RCRA Facility Investigation Report

Evans Chemetics Facility Waterloo, New York

Prepared for

Hampshire Chemical Corporation

A Subsidiary of The Dow Chemical Company

October 2004

CH2MHILL

One South Main Street
Suite 1100
Dayton, OH 45402-1828

850001A

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One South Main Street
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October 8, 2004

Bruce R. Terbush, PE
New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials
Bureau of Hazardous Waste and Radiation Management,
625 Broadway
8th Floor
Albany, NY 12233-7258

RE: Hampshire Chemical Corporation, Evans Chemetics Facility, Waterloo New York.
RCRA Facility Investigation (RFI) Report

Dear Bruce :

With this letter, and in accordance with the amended Administrative Order on Consent (Index No. Number 8-20000218-3281), June 1, 2004, The Dow Chemical Company respectfully submits three copies of this RFI Report for the above referenced facility for review. This report includes the completed activities, as described in the approved RFI Workplan submitted March 1, 2004 to the NYSDEC, with the exception of the proposed sediment sampling in the Seneca-Cayuga Canal. The Canal water level is scheduled to be lowered in November or December 2004, at which time we will complete the sediment sampling as defined in the RFI Workplan. An addendum to the RFI Report will be submitted upon completion and evaluation of the sediment sampling activities.

If you have any questions or comments, please contact me at 304-747-7788.

Sincerely,

Jerome E. Cibrik

Jerome E. Cibrik, P.G.
Remediation Leader
The Dow Chemical Company

cc: Mr. Peter Hoffmire, PE, NYSDEC Region 8
Mr. Frank DiPasquale, Hampshire Chemical Corporation
Mr. Richard Capozza, Hiscock and Barclay, LLC
Mr. Sid Stephenson, CH2M HILL
Mr. Scott Saroff, CH2M HILL
Ms. Sandi VanWormer, The Dow Chemical Company

Contents

Appendixes

Tables

Figures

SECTION 1

Introduction

This report presents the findings of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) completed at the Hampshire Chemical Corporation (Hampshire) Evans Chemetics Facility in Waterloo, New York (the Facility), a Subsidiary of The Dow Chemical Company (Dow). The general objective of the RFI was to obtain information on the nature and extent of release(s) to the environment so that the need for interim corrective measures or a Corrective Measures Study (CMS) could be determined.

This RFI has been conducted pursuant to an Amended Administrative Consent Order (ACO) executed between Hampshire Chemical Corporation and the New York State Department of Environmental Conservation (NYSDEC) (Index Number 8-20000218-3281, June 1, 2004) and the NYSDEC-approved RFI Workplan (CH2M HILL, 2004). The Amended Consent Order also provides for, as one of its goals, the conduct of an interim response action (IRA) to address liquid-containing bottles at the Former Village of Waterloo Dump Site, discovered at Test Pit 9 during the RCRA Facility Assessment (RFA) Sampling Visit (OBG, 2003). The scope of work for both the RFI and the IRA are contained in the NYSDEC-approved RFI Work Plan (CH2M HILL, 2004).

1.1 Regulatory Background

Prior to 1995, Hampshire had RCRA hazardous waste storage interim status and was pursuing a 6NYCRR Part 373 Permit for its Evans Chemetics Facility in Waterloo, New York. Under contract to Region II of the United States Environmental Protection Agency (USEPA), O'Brien and Gere, Inc. performed a Visual Site Inspection (VSI) at the Facility in 2001-2002, and subsequently prepared an RFA Report (OBG, 2003).

In response to the findings of this RFA, the NYSDEC prepared a Draft Corrective Action Module (NYSDEC, 1995) for the Facility. Shortly thereafter, Hampshire withdrew its Part 373 Permit Application before the Permit was issued in final form. The draft Corrective Action Module required Hampshire to perform a Sampling Visit at nine Solid Waste Management Units (SWMUs) and one Area of Concern (AOC). After discussion with the NYSDEC, a Sampling Visit Work Plan (SVWP) was developed with two additional AOCs included (the Building 4 Pit and Gorham Street), as well as scope for further investigation of SWMU 8. The following nine SWMUs and three AOCs were ultimately identified for investigation as part of the Sampling Visit:

- SWMU 1: Former Village of Waterloo Dump Site
- SWMU 8: Former Non-Hazardous Waste Container Storage Area
- SWMU 9: Intermediate Non-Hazardous Waste Container Storage Area
- SWMU 17: Department 69 Day Tank
- SWMU 22: Former Building 14 Loading Area
- SWMU 23: Building No. 16 Loading Area
- SWMU 25, 25A, and 25B: MPA Residue Hoppers

- SWMU 28: Wash Water Sewer System
- SWMU 29: State Pollutant Discharge Elimination System (SPDES) Sewer System
- AOC A: Seneca-Cayuga Canal
- AOC B: Building 4 Pit
- AOC C: Gorham Street

The Part 373 Permit application was withdrawn on September 29, 1994. NYSDEC approved the completion of all regulated unit closure activities at the Facility on January 31, 1995. Hampshire implemented the SVWP pursuant to an Administrative Consent Order (ACO) executed between Hampshire and the NYSDEC (Index Number 8-20000218-3281, January 30, 2002) and an NYSDEC-approved SVWP work plan (OBG, 2001). The purpose of the Sampling Visit was to evaluate whether contaminants had been released at the subject SWMUs and AOCs, and whether an RFI was warranted.

The Sampling Visit was conducted in 2001 and 2002. The Sampling Visit activities and results are documented in the Sampling Visit Report (OBG, 2003), and form the basis for the activities conducted during the RFI. The final Sampling Visit Report was submitted to the NYSDEC in September 2003 (OBG, 2003) and was conditionally approved by the NYSDEC on December 2, 2003.

Based on the NYSDEC conditional Sampling Visit Report approval letter dated December 3, 2003, no further action is required at the following SWMUs, as recommended in the Sampling Visit Report (OBG, 2003):

- SWMU 9: Intermediate Non-Hazardous Waste Container Storage Area
- SWMU 17: Department 69 Day Tank
- SWMU 22: Former Building 14 Loading Area
- SWMU 23: Building No. 16 Loading Area
- SWMU 25 and 25A: MPA Residue Hoppers
- SWMU 28: Wash Water Sewer System
- SWMU 29: SPDES Sewer System

Based on the results of the Sampling Visit, the NYSDEC requested the conduct of an RFI to collect additional data at the Facility. In response, Dow met with the NYSDEC on February 3, 2004, at the Facility to address the additional data needs. After that meeting, a RFI Work Plan was developed and submitted to and approved by the NYSDEC in March 2004. Investigation activities were completed in April and May 2004, except as otherwise noted in Section 3.

1.2 RFI Objective

As noted above, the objective of the RFI was to characterize the nature and extent of constituents associated with releases from SWMUs and AOCs. Based on the recommendations presented in the Sampling Visit Report, additional scope items requested by the NYSDEC in its conditional Sampling Visit Report approval letter (December 2, 2003), and discussions held at the February 3, 2004 meeting, the following data needs were identified to satisfy the RFI objective:

- SWMU 8 (Former Non-Hazardous Waste Container Storage Area): Evaluate concentrations of mercury and cadmium in fill and background soils.
- SWMU 25B (MPA Residue Hopper): Evaluate concentrations of arsenic, cadmium, and mercury in fill and background soils.
- AOC A (Seneca-Cayuga Canal): Additional sediment sampling in the canal.
- AOC B (Building 4 Pit): Evaluate potential presence of a shallow source of soil contamination near MW-2. Evaluate potential impacts to the Facility's standby bedrock production well.
- AOC C (Gorham Street): Evaluate extent of residuals surrounding the former excavation.
- Monitoring Well MW-11S: Evaluate presence of arsenic and chromium in this area of the Facility.
- Monitoring Well MW-10: Evaluate the potential presence of a soil source area near the well. Collect additional groundwater samples to further assess the nature and extent of groundwater impacts observed at the well.
- Monitoring Well 17: Assess whether turbidity contributed to the elevated concentrations of inorganics in previously collected samples.
- Facility Hydrology and Hydrogeologic Characteristics: Collect water-level measurements in the canal and monitoring wells.
- Background characterization: Assess whether inorganic constituent concentrations detected in individual SMWUs/AOCs are consistent with concentrations detected in similar stratigraphic units elsewhere at the Facility.
- Survey of Potable Water Wells: Evaluate the presence of potable water wells near the Facility.

In addition to satisfying the RFI objective, the following limited IRA was carried out during the field activities:

- SWMU 1 (Former Village of Waterloo Dump Site): Evaluated the extent of intact bottles in fill; removed a portion of bottles encountered.

1.3 Report Organization

The RFI Report has been divided into seven sections as follows:

- Section 1 Introduction
- Section 2 Facility Background
- Section 3 Field Activities
- Section 4 Investigation Results
- Section 5 Conceptual Site Model
- Section 6 Summary, Conclusions, and Recommendations
- Section 7 References

SECTION 2

Facility Background

2.1 Facility Description and History

The Facility is located at 228 East Main Street in the Village of Waterloo, Seneca County, New York (Figure 1). The Facility is bordered to the north by East Main Street, the east by Gorham Street, the west by East Water Street, and the south by the Seneca-Cayuga Canal (Figure 2). Facility topography is relatively flat, with a gentle southward slope toward the Canal. Surface water runoff is toward the Seneca-Cayuga Canal.

The Facility manufactures divalent organic sulfur chemical intermediates used for the cosmetic, pharmaceutical, and plastics industries. These products have been manufactured at the Facility since its purchase by Evans Chemetics, Inc. in 1943. Before 1943, the Facility was owned by the Waterloo Woolen Manufacturing Company, which had operated a textile mill from approximately 1839 until sometime between 1920 and 1930, when it was closed.

Evans Chemetics was acquired by the W.R. Grace Company in 1979 and remained a part of W.R. Grace's Organic Chemical Division until 1992, when Hampshire completed a management buyout of the Organic Chemical Division. Evans Chemetics was part of the management buyout, and the Facility became an operating unit of Hampshire. In 1995, while Hampshire remained the owner of the Facility, the Hampshire Corporation was purchased and became a wholly owned subsidiary of Sentrachem, Ltd., a South African chemical company. In 1997, Sentrachem was acquired as a wholly owned subsidiary of Dow.

The Facility has undergone significant changes over time. Many of the current buildings were constructed during the 1800s, in addition to a number of buildings that were subsequently demolished. The canal and raceway system was also much more extensive in the 1800s than it is today. Since 1948, many of the old canals and raceways were gradually filled, old buildings demolished, and new buildings constructed. Figure 2 depicts the current Facility configuration.

Two bedrock production wells are currently used to provide non-contact cooling water for the Facility processes. The wells are identified as Department 68 well and Department 69 well; according to Facility personnel, both wells are approximately 100 feet deep. An old standby bedrock water well also exists at the Facility and is located near the Former Building 4 Pit (Figure 2); however, no information regarding its depth or construction is available.

2.2 Facility Topography and Subsurface Structures

The shallow subsurface is characterized by the presence of the following man-made structures:

- Raceways and Canals: The raceways and canals have been present in the area since the 1800s, when they were much more extensive than they are today. By 1948, most of the canals and raceways were filled and covered. Most of the old canals and raceways were located in the western and central portions of the Facility. Test pits installed as part of the Sampling Visit exposed the sides and bottom of several raceways. Based on these test pits, the raceways were determined to have limestone walls and a solid bottom. The base of the southern raceway was found to be approximately 20 feet below grade.
- SPDES Sewer System: The SPDES sewer system consists of a network of pipes that discharge non-contact cooling water from processes at the Facility to the Seneca-Cayuga Canal through SPDES-permitted outfalls. Historically, discharges to the Seneca-Cayuga Canal were conveyed through as many as nine outfalls (Figure 3).
- Wash Water Sewer System: The wash water sewer system consists of a network of floor trenches, pipes, and sumps used to collect, hold, and transfer leaks, wash water, and process waste water. The system generally drains by gravity to holding tanks or sumps that are subsequently pumped to the wastewater treatment system in Building 16 (Figure 3).

2.3 Surface Water

The Facility is located within the watershed of the Seneca River, which borders the Facility on the south (Seneca-Cayuga Canal). The Seneca-Cayuga Canal is a New York State Class "C" stream, which flows eastward (A.T. Kearney, 1993). Surface water runoff from the Facility is generally toward the canal. Currently, cooling water and treated wastewater discharge to the canal through SPDES-permitted outfalls. The canal has been extensively reworked over the period that the Facility has been in operation. Currently, the canal is approximately 80 feet wide and 8 to 18 feet deep.

Part of the north side of the Facility is bordered by the Seneca-Cayuga raceway, which is a man-made reservoir that the Facility uses as part of their water supply (A.T. Kearney, 1993). The Seneca-Cayuga raceway receives its water from the Seneca-Cayuga Canal.

2.4 Geology

The geologic setting of the site was presented in the SVI Report (OBG, 2002) and summarized in the RFI Workplan (CH2M HILL, 2004). Additional soil and groundwater data were collected during the RFI that were consistent with the findings of the previous investigation. No changes to the geologic setting are apparent from the data collected during the RFI.

2.5 Hydrology and Hydrogeology

During previous investigations, 18 shallow wells and 3 intermediate depth wells were installed at the Facility. The shallow wells were constructed to intersect the water table; intermediate wells were screened at the base of the glacial till. Well construction details are shown in Table 1.

Groundwater elevation data collected during the Sampling Visit and RFI are displayed in Table 2. The data indicate that the groundwater within both the shallow and intermediate groundwater zones flows to the south toward the Seneca-Cayuga Canal. Water levels in the shallow wells ranged from 429 to 444 feet above mean sea level (msl), while water levels in the intermediate wells ranged from 428 to 434 feet above msl.

To assess the potential for the raceways and canals to influence groundwater flow, monitoring wells were installed during the Sampling Visit, inside and outside of the old canals and raceways (Figure 3). Specifically, on the western side of the Facility, wells MW-15 and MW-16S were installed within raceway structures and wells MW-14, MW-17, and MW-18 were installed outside of the raceways.

To evaluate if the existing canal and raceway are hydraulically connected to the groundwater system at the Facility, two staff gauges were installed during the RFI. SG-1 was installed along Seneca-Cayuga Raceway and SG-2 was installed along the Seneca-Cayuga Canal. Water levels measured at the staff gages in April 2004 suggest that the Seneca-Cayuga Raceway and the Seneca-Cayuga Canal are hydraulically connected to the shallow groundwater. The Seneca-Cayuga Raceway water level is about 443 feet above msl and the shallow groundwater elevation in that area is approximately 444 feet above msl. Similarly, the Seneca-Cayuga Canal water level is approximately 428 feet above msl and the shallow groundwater elevation in the area of the canal is about 430 feet above msl. This information indicates that the shallow groundwater at the Facility likely discharges to the Seneca-Cayuga Canal.

Water-level data collected during the Sampling Visit and the RFI suggest there are several feet of hydraulic separation between the shallow groundwater system and the intermediate groundwater system (i.e., between MW-5S and 5I and between MW-11S and 11I). Therefore, a similar hydraulic separation between the intermediate groundwater system and the Seneca-Cayuga Raceway is likely and may also be present between the intermediate groundwater system and the Seneca-Cayuga Canal.

The horizontal hydraulic gradient of the shallow groundwater varies slightly across the Facility. A slightly larger gradient is typically found to the west side when compared to the east; the horizontal hydraulic gradient in the intermediate aquifer is similar to that of the shallow aquifer on the east side of the Facility, as shown below:

West Side Shallow Aquifer

- January 2002 hydraulic gradient was 0.09 foot/foot
- November 2002 hydraulic gradient was 0.04 foot/foot
- April 2004 hydraulic gradient was 0.04 foot/foot

East Side Shallow Aquifer

- January 2002 hydraulic gradient was 0.05 foot/foot
- November 2002 hydraulic gradient was 0.02 foot/foot
- April 2004 hydraulic gradient was 0.02 foot/foot

Intermediate Aquifer

- January 2002 hydraulic gradient was 0.03 foot/foot
- November 2002 hydraulic gradient was 0.015 foot/foot
- April 2004 hydraulic gradient was 0.017 foot/foot

SECTION 3

Field Activities

The scope of investigation at the Facility is described in the RFI Work Plan (CH2M HILL, 2004). The field and analytical protocols for this investigation were conducted following the NYSDEC-approved Quality Assurance Project Plan (QAPP) prepared for the Sampling Visit Work Plan (OBG, 2001), with modifications presented in the RFI Work Plan (CH2M HILL, 2004).

Due to elevated water levels in the canal, the proposed sediment sampling in AOC A (Seneca-Cayuga Canal) was not completed with the other field activities. The sediment sampling is planned for when water levels in the canal are lowered in late 2004. An addendum to this report will be submitted following the completion of the sediment sampling.

3.1 Former Village of Waterloo Dump Site (SWMU 1)

Three test pits (Landfill 1, 2 and 3) were completed at SWMU 1 in the area of the former test pit (TP-9) where intact glass bottles containing a white liquid were found during the Sampling Visit investigation. The areal extent of these test pits is shown in Figure 5. Test pit logs are provided in Appendix A.

The first test pit (Landfill 1) was excavated west of former test pit TP-9. Bottles with white liquid were observed in the first 2 feet of soil below ground surface (bgs). It is believed that these bottles were placed here during backfilling of previous test pits and is not an indication of the elevation at which these bottles were originally landfilled. Beneath this initial layer of bottles, the debris observed consisted of mostly construction and demolition type material (e.g., bricks). The water table was encountered at 8 feet bgs. Lithology could not be logged beneath the water table, but fill containing glass bottles was identified. At approximately 10 to 13 feet bgs, bottles containing a white liquid, believed to have been originally landfilled at this depth, were observed. The vertical depth of the bottle fill could not be determined due to persistent collapse of the test pit below the water table. A groundwater sample (Sample ID "Landfill") was collected from this test pit and analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), and Target Analyte List (TAL) total and dissolved metals.

The second test pit (Landfill 2) was excavated approximately 10 feet east of the Test Pit 1. The observations from this excavation were similar to those of the first, with construction and demolition type material to the depth of the surficial aquifer and intact bottles containing a white liquid below the water table.

The third test pit (Landfill 3) was excavated just south of TP-9. This test pit did not encounter debris until approximately 6 feet bgs. The debris was consistent with the other test pits. The water table was encountered at approximately 10 feet bgs. Glass bottles similar to those found in the other test pits were observed below the water table at approximately

10 to 12 feet bgs. In this test pit, the bottles were found primarily at the northwestern extent of the test pit. Fewer bottles were observed in this test pit than in the other test pits.

Two intact bottles containing the white liquid were removed from the test pits; the contents were analyzed for TCL VOCs, TCL SVOCs, and TAL total metals.

Information for the samples collected during the test pit excavation activities is summarized in Table 3. Photographs of the test pit excavations are included in Appendix B.

3.2 Soil Sampling

Thirty-eight soil samples, comprising 6 surface soil (i.e., collected 0 to 2 feet bgs) and 32 subsurface soil samples, from 18 soil borings, were collected at:

- Background locations
- Former Non-Hazardous Waste Container Storage Area (SWMU 8)
- MPA Residue Hopper (SWMU 25B)
- Building 4 Pit (AOC B)
- Gorham Street (AOC C)
- Monitoring Well MW-11S
- Monitoring Well MW-10

The final sampling locations agreed upon by NYSDEC during the field investigation are depicted in Figure 5. Soil sample depths were those that were identified in the RFI Work Plan. Soil sample collection information is summarized in Table 4 and soil boring logs are provided in Appendix A.

3.2.1 Background Characterization

Nine soil samples were collected in the area north of the Facility buildings, from four locations (HP-1 through HP-4, as shown in Figure 4) considered to be unrelated to known SWMUs or AOCs. Samples were collected from similar depths as those for samples collected at known SWMUs and AOCs. The samples were submitted to the analytical laboratory for analysis of TAL inorganics.

3.2.2 Former Non-Hazardous Waste Container Storage Area (SWMU 8)

Two soil borings, SB-03 and SB-04, were completed near the Former Non-Hazardous Waste Container Storage Area during the Sampling Visit (OBG, 2003); two additional soil borings (SB-03A and SB-03B) were completed west and northwest of SB-03 during the RFI. Seven soil samples were collected from the two soil borings, SB-03A (0-2 feet, 2-4 feet, 5-8 feet bgs) and SB-03B (1-2 feet bgs, 3-4 feet bgs, 8-9 feet bgs), and analyzed for TAL metals to evaluate the distribution of mercury and cadmium near SWMU 8. The depth intervals represent the approximate top, middle, and bottom of the fill.

3.2.3 MPA Residue Hopper (SWMU 25B)

Soil boring SB-08 was completed near the SWMU 25B MPA Residue Hopper during the Sampling Visit (OBG, 2003); two additional soil borings, SB-08A and SB-08B, were completed near SB-08 during the RFI. Two samples were collected from each of the RFI

borings and analyzed for TAL inorganics: SB-08A (2-4 feet bgs and 4-6 feet bgs) and SB-08B (2-4 feet bgs and 5-6 feet bgs).

3.2.4 Building 4 Pit (AOC B)

Two soil borings, B01_41904 and B02_41904, were completed adjacent to the south wall of Building 4 to evaluate the potential presence of a shallow source of contamination near well MW-2. One soil sample was collected from each boring and analyzed for TCL VOCs, TCL SVOCs, TCL PCBs, and TAL inorganics: B091_41904 (9.5 - 10.5 feet bgs) and B02_41904 (7.5 - 8.5 feet bgs).

3.2.5 Gorham Street (AOC C)

Two soil borings (SB-01 and SB-02) were completed near Gorham Street during the Sampling Visit (OBG, 2003); four additional soil borings (SB-01A, SB-01B, SB-02A, and SB-02B) were completed near SB-01 and SB-02 during the RFI. These borings were completed to evaluate the extent of residual contamination surrounding the former excavation. Twelve soil samples were collected and analyzed for TCL VOCs, TCL SVOCs, TCL PCBs, and TAL inorganics: SB-01A (0 - 2 feet bgs, 2 - 4 feet bgs, and 4 - 6 feet bgs), SB-01B (0 - 2 feet bgs, 2 - 4 feet bgs, and 6 - 8 feet bgs), SB-02A (0 - 2 feet bgs, 2 - 4 feet bgs, and 4 - 6 feet bgs), and SB-02B (0 - 2 feet bgs, 2 - 4 feet bgs, and 6 - 8 feet bgs).

3.2.6 Monitoring Well MW-11S

One soil boring, B02_42004, was completed adjacent to MW-11S to evaluate the potential presence of a contaminant source area near the well. Two soil samples were collected from this boring and analyzed for TCL VOCs, TCL SVOCs, TCL PCBs, and TAL inorganics: 4-6 feet bgs and 7-9 feet bgs.

3.2.7 Monitoring Well MW-10

To evaluate the potential presence of a contaminant source area near the well, four soil samples were collected from two soil borings: SB-10A (4 - 6 feet bgs and 10 - 12 feet bgs) and SB-10B (2 - 4 feet bgs and 10 - 12 feet bgs). The samples were analyzed for TCL VOCs, TCL SVOCs, TCL PCBs, and TAL inorganics.

3.3 Groundwater Sampling

Groundwater samples were collected from monitoring wells MW-01, MW-02, MW-03, MW-10, MW-11S, MW-11I, and MW-17. These samples were collected to evaluate whether concentrations in the monitoring wells have changed since the Sampling Visit. In the MW-10 area, additional groundwater samples (GW-10A through GW-10D) were collected from four temporary piezometers to further assess the nature and extent of constituents in groundwater in this area.

The Facility standby bedrock production well located adjacent to the Building 4 Pit was also sampled to determine if releases in the overburden have affected the bedrock aquifer in this area. A water sample was also collected from the Building 4 sump to evaluate the sump as a potential source of contamination in the former Building 4 Pit area.

Figure 5 shows the location of the monitoring wells and production wells at the Facility. Groundwater sample collection information is summarized in Table 5 and groundwater sampling logs are provided in Appendix A.

Groundwater samples were submitted to an offsite laboratory for chemical analysis as follows:

- Monitoring wells MW-01, MW-02, MW-03, MW-10, temporary piezometers GW-10A through GW-10D, and the Building 4 Pit Sump samples were analyzed for TCL VOCs, TCL SVOCs, TAL total and dissolved metals, and turbidity. (Note: only TCL VOCs were analyzed for the sample collected from GW-10B due to insufficient recovery)
- The Building 4 Standby Production Well sample was analyzed for TCL VOCs, TCL SVOCs, and TAL total and dissolved metals.
- Monitoring well MW-11S and MW-11D samples were analyzed for TCL VOCs, TCL SVOCs, TAL total and dissolved metals, and turbidity.

3.4 Survey of Potable Water Wells

The area around the Facility was surveyed to identify potential private water supply wells at nearby residences and/or industrial properties. This task was accomplished by contacting the Waterloo, New York and Seneca County, New York Health Departments to obtain location and production information regarding water wells that may be located within ¼ mile of the Facility. Because no State or local database of private wells is available, the survey of possible private wells around the Facility was conducted by walking through the immediate neighborhoods adjacent to the Facility and recording any obvious water well conductor casings. No wells were identified from the agency contacts or the physical walk-through survey.

SECTION 4

Investigation Results

This section presents the findings of the soil and groundwater investigations completed at the Facility. Analytical results for the samples collected during the RFI are summarized in Tables 6 through 18. Results for constituents detected above reporting limits are shown in bold.

Analytical data for soil samples collected at the Facility were screened using the NYSDEC Recommended Soil Cleanup Objectives as set forth in the NYSDEC Technical and Administrative Guidance Memorandum HW-4046 (TAGM 4046), entitled *Determination of Soil Cleanup Objectives and Cleanup Levels* (NYSDEC, October 1995). Background concentrations for soils in the eastern United States were obtained from the NYSDEC document entitled *Background Concentrations of 20 Elements in Soils With Special Regard to New York State* (NYSDEC, 1988).

Background soil samples were collected from three borings at various depths for TAL Metals. A statistical analysis was conducted of the background samples to develop an upper tolerance limit (UTL). The purpose of calculating a UTL is to define a concentration below which 95% of the background population falls with 95% confidence (USEPA, 1989). Site data are then compared to this limit to determine whether they appear to fall within the range of likely background concentrations. If a site concentration does not exceed the background UTL, then this evidence points to a lack of contamination above background.

A more conservative approach was utilized in this report where the maximum concentration of inorganic constituents identified in Facility background samples was used to screen against soil inorganic data. However, it may be more appropriate in the future to use the UTL statistical approach to compare background data to concentrations in soil.

Groundwater sample results were compared to current New York State Class GA Ground Water Standards and to guidance values presented in the Division of Water Technical and Operational Guidance Series 1.1.1 (TOGS), entitled *Ambient Water Quality Standards and Guidance Values and Ground Water Effluent Limitations* (NYSDEC, 1998).

Results for constituents detected above the relevant screening levels or standards are flagged in the tables with shading. Laboratory data sheets are provided in Appendix C; QA/QC review reports are provided in Appendix D.

A summary of constituents detected above associated screening levels is provided in Table 19 by sample matrix. Interpretation of the analytical results is presented in Sections 5 and 6.

4.1 Former Village of Waterloo Dump Site (SWMU 1)

Three test pits (Landfill 1, 2 and 3) were completed in this area during the RFI to evaluate the extent of bottles in the fill material and to perform a limited IRA to remove bottles. Details of this activity are summarized below.

Fill material containing glass bottles was removed from the excavations and staged in a roll-off container for offsite disposal pending waste characterization analysis. Approximately 7 cubic yards of fill material containing broken and intact glass bottles, and associated soil, were removed and disposed of offsite. Waste characterization sampling indicated that the material was non-hazardous.

Per the protocol presented in the RFI Workplan, the excavation was halted prior to identifying the horizontal extent of the bottles. Re-evaluation of a cost-effective corrective measure was deemed appropriate because the area over which bottles were observed was not localized. The vertical extent of bottles could not be determined because it extended below the water table.

A sample of groundwater (Sample ID "Landfill") entering the Landfill 1 excavation was submitted for laboratory analysis. The analytical results are presented in Tables 6, 7, and 8. The sample was found to contain acetone at a concentration of 194 µg/L, which is above the Class GA standard (50 µg/L).

Inorganics (arsenic, barium, cadmium, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, sodium, and zinc) were detected above Class GA standards in the unfiltered sample; however, only iron, manganese, and sodium were detected above standards in the filtered sample. This is likely due to the relatively high turbidity of the water collected from the excavation.

A sample of liquid from a glass bottle collected during the Sampling Visit contained acetone at a concentration of 90,000 µg/L; however, samples from two bottles (one clear liquid and one white liquid) collected during the RFI did not contain detectable VOCs or SVOCs. It is important to note that these samples had elevated reporting limits due to sample matrix interference.

4.2 Background Soil Characterization

Nine soil samples were collected from four background soil borings and analyzed for TAL inorganics during the RFI. Table 9 presents a summary of the analytical results for these background soil samples. Figure 5 shows the locations of the background soil borings.

Several inorganics were not detected in samples collected from the background areas: silver, cadmium, antimony, selenium, thallium, and mercury. Therefore, these constituents are not considered further in the background evaluation.

Descriptive statistics for those inorganics that were detected in background soil samples are presented in Table 10. For screening purposes, detected constituents were compared to the maximum value of the three screening criteria (NYSDEC Recommended Soil Cleanup Objectives TAGM 4046, Eastern U.S. Background Values, and Facility Background). However, constituents without a TAGM 4046 screening level were not compared to Facility background or Eastern US background levels and are not discussed further.

4.3 Soils

This section summarizes the analytical results for soil collected during the RFI. Evaluation of RFI and previously collected data is presented in Sections 5 and 6. Soil boring locations are shown on Figure 5. Analytical results for soil samples are summarized in Tables 11 through 14. Figures 6 and 7 show the samples with exceedences of screening criteria.

4.3.1 Former Non-Hazardous Waste Container Storage Area (SWMU 8)

Analytical results for soil samples collected at this SWMU during the Sampling Visit and RFI are presented in Tables 11 through 14. The results for samples collected during the RFI are summarized below:

- Five inorganics (arsenic, copper, magnesium, nickel, and zinc) were detected above the TAGM 4046 screening criteria at this SWMU (Table 14).

4.3.2 MPA Residue Hopper (SWMU 25B)

Analytical results for soil samples collected at this SWMU during the Sampling Visit and RFI are presented in Tables 11 through 14. The samples collected during the RFI are summarized below:

- Six inorganics (cadmium, copper, lead, magnesium, mercury, and zinc) were detected above the screening criteria at this SWMU (Table 14).

4.3.3 Building 4 Pit (AOC B)

Analytical results for soil samples collected at this AOC during the Sampling Visit and RFI are presented in Tables 11 through 14. The samples collected during the RFI are summarized below:

- Two VOCs (Acetone and 4-methyl-2-pentanone (MIBK)) were detected above TAGM 4046 screening levels in one sample (Table 11).
- SVOCs and PCBs were not detected in soil samples collected at this AOC.
- Five inorganics (cadmium, copper, mercury, sodium, and zinc) were detected above the screening criteria at this AOC (Table 14).

4.3.4 Gorham Street (AOC C)

Analytical results for soil samples collected at this AOC during the Sampling Visit and RFI are presented in Tables 11 through 14. The samples collected during the RFI are summarized below:

- No VOCs were detected above TAGM 4046 screening levels in soil samples from this AOC.
- Six Polynuclear Aromatic Hydrocarbons (PAHs) (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene) were detected above TAGM 4046 screening levels at this AOC (Table 12).

- One PCB (Aroclor 1254) was detected above TAGM 4046 screening levels in two samples, SB-01A (0-2 feet bgs) and SB-01B (0-2 feet bgs) (Table 13).
- Five inorganics (arsenic, cadmium, chromium, copper, and zinc) were detected at this AOC above screening criteria (Table 14)
- The RCRA limit for sulfide reactivity was not exceeded in soil samples from SB-01A or SB-01B.

4.3.5 Monitoring Well MW-11S

Analytical results for soil samples collected in this area during the Sampling Visit and RFI are presented in Tables 11 through 14. The samples collected during the RFI are summarized below:

- No VOCs were detected above TAGM 4046 soil screening levels (Table 11).
- SVOCs and PCBs were not detected in soil samples collected in this area.
- All inorganics except magnesium were below screening criteria (Table 14).

4.3.6 Monitoring Well MW-10

Analytical results for soil samples collected in this area during the Sampling Visit and RFI are presented in Tables 11 through 14. The samples collected during the RFI are summarized below:

- No VOCs or PCBs were detected above TAGM 4046 soil screening levels.
- Three PAHs (benzo(a)anthracene, benzo(a)pyrene, and chrysene) were detected above TAGM 4046 soil screening levels in one sample (Table 12).
- Two inorganics (arsenic and zinc) were detected above the screening criteria in one sample (Table 14).

4.4 Groundwater

The analytical results for the groundwater samples collected during the Sampling Visit and RFI are presented in Tables 15 through 18. The samples collected during the RFI are summarized below:

- Ten VOCs were detected above the Class GA groundwater standard or guidance value (Table 15).
- One SVOC (bis(2-ethylhexyl)phthalate) was detected above Class GA groundwater standards in five samples, MW-01, MW-02, MW-03, MW-11S, and the Building 4 Sump Table 16).
- No PCBs were detected in groundwater samples (Table 17).
- Fourteen inorganics (arsenic, barium, beryllium, cadmium, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, selenium, and sodium) were detected at the Facility above Class GA groundwater standards (Table 18).

SECTION 5

Conceptual Site Model

The Facility is located in a mixed residential/commercial/industrial area within the Village of Waterloo, Seneca County, New York. Except along the property boundary with the Seneca-Cayuga Canal. A chain-link fence surrounds the Facility; two gates restrict access to the Facility.

The Facility has been used for industrial purposes since at least 1839. Before 1943, the Facility was owned by a woolen manufacturing company; the Facility contained a textile mill from approximately 1839 until the 1920s or 1930s. The Facility currently manufactures divalent sulfur chemical intermediates, and has manufactured these products since 1943. The Facility currently employs approximately 60 workers and runs 3 production shifts, 24 hours per day, 7 days a week.

Surface features vary across the Facility. The western portion of the Facility is predominantly grassed or unpaved; one paved driveway cut across this area. Nearly the entire eastern portion of the Facility is covered with impermeable surfaces (e.g., buildings, concrete, asphalt, etc.); limited grassed areas are present along Gorham Street and at the corner of Gorham Street and East Main Street. Facility topography slopes gently towards the Seneca-Cayuga Canal with elevations ranging from 447 to 433 feet above msl; surface water runoff is toward the Seneca-Cayuga Canal.

Two bedrock production wells are currently used to provide non-contact cooling water for Facility processes. These are the Department 68 well (next to Building 7) and the Department 69 well (next to Building 1); the wells are approximately 100 feet deep. A third bedrock well, no longer used by the Facility, is located near the Building 4 Pit. The Village of Waterloo supplies water from Seneca Lake for other uses at the Facility (e.g., drinking). There are no known private or public water supply wells located within 1/4-mile of the Facility.

Overburden soils consist of fill material and native, glacially-derived soils. Fill across much of the Facility ranges in thickness from 10 to 20 feet; on the northeast side of the Facility, less than 3 feet of fill appears to be present.

5.1 Potential Contaminant Sources

5.1.1 Facility-Wide Fill

Analytical data from the fill material present across much of the Facility indicates organic compounds (generally at low levels near the detection limits) and inorganics are ubiquitous. Low levels of PCBs were detected infrequently in soil borings across the Facility; with the exception of two surface soil samples along Gorham Street, none of these exceeded TAGM 4046 soil screening levels. In addition, PAHs, arsenic, antimony, chromium, copper, iron, magnesium, silver, thallium, vanadium, and zinc were detected above TAGM 4046 screening levels and/or Facility background in the majority of fill samples collected across

the Facility. However, the concentrations of the inorganic constituents were generally consistent across the Facility; as a result, their presence appears to be primarily characteristic of the fill, rather than indicative of releases from individual SWMUs or AOCs. This is further detailed below.

Antimony/Thallium/Silver: Although these constituents were not detected in background samples and were detected in some non-background samples, the detections are generally considered to be part of the same population as the background samples. The detected concentrations of these constituents in the non-background samples are not significantly higher than the detection limits for these constituents in the background samples. A review of histograms for these constituents supports this (using the detection limit to plot the non-detect samples on the histogram). Histograms are included in Appendix E.

Arsenic: Arsenic was detected at approximately the same frequency in SWMU/AOC samples (98%) as in background samples (100%). With the exception of select samples from SWMU 8, SWMU 25B, the Gorham Street AOC, and the MW-10 AOC, samples from the fill material across the site appeared consistent with the background data (log-transformed).

Copper: Copper was detected in all background and SWMU/AOC samples. With the exception of samples from SWMU 8 and SWMU 25B, the concentrations of copper in SWMU/AOC samples are consistent with the background levels (using log-transformed data).

Chromium: Chromium was detected in all background and SWMU/AOC samples. With the exception of one sample in the Gorham Street AOC (SB-02A: 2-4 feet bgs), the detected concentrations are statistically part of the same population as the background samples, even though some of the concentrations are higher than the maximum background levels (using log transformed data). None of the other samples in the Gorham Street AOC were close in concentration to the sample from SB-02A, which indicates: 1) the data point is an outlier, or 2) the data indicate an impact, but the impacted area is very limited in horizontal and vertical extent.

Iron: Iron was detected in all background and SWMU/AOC samples. With the exception of two samples, one from the Gorham Street AOC (SB-02) and one from SWMU 25B (SB-08), the detected concentrations are statistically part of the same population as the background samples. None of the other samples in the Gorham Street AOC or SWMU 25B were close in concentration to the samples mentioned above, which indicates: 1) the data points are outliers, or 2) the data indicate an impact, but the impacted area is very limited in horizontal and vertical extent.

Magnesium: Magnesium was detected in all background and SWMU/AOC samples. The SWMU/AOC samples are statistically part of the same population as the background samples, even though some of the concentrations were higher in the SWMU/AOC samples (the concentrations were within the same order of magnitude as those of the background samples).

Zinc: Zinc was detected in all background and SWMU/AOC samples. Although some of the concentrations were higher in the SWMU/AOC samples, when plotted with the background data, these samples appear to be part of the same population as the rest of the data.

In addition to the above, PAHs detected in Facility media may be related to historic storage of coal and use of coal-fired boilers at the Facility, and are not likely attributable to individual SWMUs.

5.1.2 Former Village of Waterloo Dump Site (SWMU 1)

The former dump site contains fill material, including glass and plastic fragments, scrap metal, ash, ceramics, shoes, brake pads, copper wire, tires, cobbles, bricks, wood, and metal scrap. Intact glass bottles containing a white liquid were also encountered in four test pits completed within the landfill area (TP-9, and Landfill 1 through Landfill 3); the bottles were primarily encountered at or just below the water table. The limits of the bottles in the fill have not been defined. The municipal fill material is not exposed at the surface; it is covered by soil.

Groundwater downgradient of the SWMU contains acetone, iron, magnesium, manganese, and sodium at concentrations above Class GA standards. Acetone was detected in a bottle removed from the fill area of the SWMU. The dissolved iron, manganese, and sodium concentrations in groundwater at MW-17 were similar across most of the Facility; therefore, these constituents are not likely attributable to the SWMU.

5.1.3 Non-Hazardous Waste Container Storage Area (SWMU 8)

The non-hazardous waste container storage area was used to store drums of still bottoms. No VOCs or PCBs were detected in soil or groundwater in this area at concentrations above screening levels or standards. PAHs were found above TAGM 4046 screening levels; however, materials containing these compounds were not stored at this SWMU. In addition, the presence of PAHs is likely attributable to historic industrial uses of the Facility (e.g., storage of coal and use of coal-fired boilers, presence of cinders in fill, etc.). A former coal gasification plant operated approximately one-half to three-quarter mile east of the Facility.

Elevated levels (i.e., approximately an order of magnitude above TAGM 4046 and Facility Background) of barium and copper were detected at only one location, SB-03; lower concentrations were detected in additional borings installed near SB-03.

There is no evidence that barium or barium containing compounds have been used or stored at the Facility; as a result, the presence of barium is not attributable to the SWMU. Copper is used only in small amounts (1 pound at a time) in powder form on occasion in Building 2A. The total copper used in this form is about 12 pounds per year. The presence of elevated levels of copper at SB-03 is not likely associated with this usage because SWMU 8 is not located near Building 2A; as a result, the copper is not attributable to this SWMU. It is more likely attributable to fill background soils concentrations.

5.1.4 MPA Residue Hopper (SWMU 25B)

Elevated levels (approximately an order of magnitude or higher above TAGM 4046 or Facility Background) of cadmium, copper, iron, and selenium were detected only at one location, SB-08; lower concentrations were detected in additional borings installed near SB-08. Elevated levels (approximately an order of magnitude above TAGM 4046 and Facility Background) of mercury and zinc were detected at SB-08 and SB-08B. PAHs were found above TAGM 4046 screening levels, but their presence is not attributable to activities at this

SWMU. Rather, their presence is likely associated with historic activities at the Facility (e.g., presence of coal piles and coal-fired boilers, presence of cinders in Facility fill, etc.).

Cadmium and selenium are not used in Facility processes; as a result, the concentrations of these constituents are not attributable to this SWMU. As mentioned previously, the only copper used at the Facility is used in Building 2A; as a result, there is no evidence that the copper detected in SB-08 is attributable to activities at this SWMU.

Mercury containing-manometers have been used at the Facility; however, mercury was not specifically stored or used in this area. There have been no process operations in this area of the Facility and the area has had a concrete cap since the mid 1970s. There is no evidence to suggest that mercury-containing manometers resulted in the mercury concentrations encountered at this SWMU.

MPA raffinate consists of ammonium chloride with iron chloride or zinc chloride and traces of MIBK. This could be a potential source of the iron and zinc detected in the area.

5.1.5 Building 4 Pit (AOC B)

According to site personnel, the former Building 4 Pit was a below-grade sump that collected wastewater from Building 4. During construction activities for a new extraction system in this area in 1994, contamination was found in the area below the sump. In 1999, the sump was closed by Hampshire Chemical by removing the cypress wood sump along with potentially contaminated soils to the groundwater level. A concrete "mud slab" was then poured in the area of the former sump and a gravel layer placed over the concrete "mud slab." Concrete was then placed on top of the gravel. A PVC sampling port was installed into the gravel layer.

Soil samples collected at AOC B and water samples from the surrounding area showed the presence of several VOCs. In soil, MIBK and acetone were the only VOCs detected above TAGM 4046. In groundwater the same VOCs detected in soil, as well as several other VOCs (i.e., 1,2-dichloropropane, benzene, carbon disulfide, chlorobenzene, chloroform, cis-1,2-dichloroethene, methylene chloride, toluene, vinyl chloride, and xylene), were detected in area groundwater at concentrations above Class GA standards. Samples collected from the building 4 sump show the presence of few of the constituents detected in soil and groundwater, which suggests that AOC B may be the source of at least some of the VOCs detected in the surrounding media.

Only one SVOCs (bis(2-ethylhexyl)phthalate) was detected above the Class GA standard in groundwater in this area. This constituent was also detected in the Building 4 sump, which also suggests that AOC B may be the source of constituents detected in groundwater.

Arsenic, chromium, iron, selenium, and sodium were detected in the water samples collected from the Building 4 sump at concentrations above Class GA levels. These constituents were also detected in the AOC B soil samples, but the concentrations were below the TAGM 4046 levels. Concentrations of cadmium, copper, mercury, sodium, and zinc were detected in AOC B soil above TAGM 4046 levels. Groundwater samples collected from wells in the vicinity of AOC B contained several of the above constituents (i.e., arsenic, cadmium, chromium, iron, selenium, and sodium) above the Class GA levels, which further suggests AOC B may be the source of groundwater contamination found in the area.

No VOCs or SVOCs were detected in the Facility's standby bedrock production well, which indicates it has not been impacted by contamination present in the shallow groundwater.

5.1.6 Gorham Street (AOC C)

A release of sodium sulfhydrate occurred in this area in the late 1990s. Potentially contaminated soil from the release was removed. During construction activities for a cooling tower in this area 1999, soil removed from the construction was found to be a hazardous waste due to characteristic reactivity. This resulted in the area being identified as an Area of Concern (AOC) to be investigated under the RCRA Corrective Action Program. Based on the RFI soil sampling results, the extent of these impacted soils is limited primarily to the immediate vicinity of the former excavation, as discussed below.

The highest concentrations of inorganics were generally found at location SB-02; lower concentrations of most inorganics were detected in additional borings installed near SB-02. Of these, only iron and zinc are known components of materials used or produced at the Facility (MPA raffinate); MPA raffinate was stored in the Department 69 Day Tank (SWMU 17), located near the Gorham Street AOC. It is not known whether these constituents were released at the Gorham Street location.

The highest concentrations of PAHs were found generally at locations SB-02 and SB-01A. Their presence is probably attributed to the presence of coal and coal-fired boilers on the eastern side of the Facility.

Although TAGM 4046 screening levels were exceeded only at two locations (SB-01A and SB-01B), PCBs were detected in over half of the soil samples collected in this area. A source for PCBs in this area is not apparent from Facility records.

5.1.7 Monitoring Well MW-10 Area

Toluene was the only organic compound detected in groundwater above Class GA standards. The Facility historically used toluene from drums in building 2 and 2a approximately 15-20 years ago. Floor drains from the building lead to a sump north of building 2b and near the MW-10 area. According to site personnel, a service station existed northeast and across the street from the Facility at the corner of US Route 20 and Gorham Street. The former service station closed in the late 1970s and is now an automobile repair shop, but no longer commercially sells petroleum based products. It is unknown if the former service station petroleum storage tanks were investigated or closed under the underground storage tank regulations. Both the former service station and the Facility's use of toluene are potential source areas for the toluene detected in groundwater. The most likely source for toluene in the shallow groundwater at the site is from historical usage by the Facility based on the following:

- Other constituents normally associated with petroleum based products (benzene, xylene, ethylbenzene) were not detected in the groundwater.
- The Facility has a record of historical usage of toluene.
- Toluene is not widespread in the surrounding soils near MW-10.

Iron, magnesium, and sodium were detected above Class GA standards at MW-10 in both total and dissolved samples. Arsenic was detected only above Class GA standards in the total sample. Other inorganics were detected in the surrounding temporary piezometers, but there were high levels of suspended solids in the groundwater samples from these locations and this is most likely attributable to the concentrations observed. The inorganic concentrations in groundwater are similar to concentration across most of the Facility; therefore, these constituents are probably not attributable to the SWMU.

5.1.8 Monitoring Well MW-11S Area

Elevated levels (several orders of magnitude above the Class GA level) of arsenic and sodium and brown colored water were observed in groundwater at MW-11S. Soil sampling completed adjacent to MW-11S did not identify a source for these elevated levels. According to Facility personnel, however, a former sodium hydroxide tank located at the northwest end of Building 3 had a history of leaks and seepage through the secondary containment dike and eventually under Building 3. Civil work performed in the late 1980s to stabilize building foundations showed that the soils in the area under the building had a high pH. It is believed that the high pH found in the soils under Building 3 was the result of the historical sodium hydroxide releases. The high pH found in groundwater at MW-11S is likely attributable to the historic sodium hydroxide releases upgradient of the well; however, there is a possibility that grout contamination from the well construction may be a source for the high pH.

Arsenic is not used at the Facility, and is therefore not attributable to a source in this area. However, the elevated pH measured in the well (approximately 11), may affect the solubility of naturally occurring inorganics, leading to increased concentrations of some inorganics in groundwater.

One SVOC (bis (2-ethylhexyl) phthalate) was detected at a concentration similar to those for this constituent in the AOC B area, which may indicate the source may be beyond the delineation of the AOC B area.

5.2 Potential Pathways

Possible exposure pathways for humans at the Facility comprise direct contact, inhalation, and ingestion. Direct contact with contaminated soils and/or groundwater is the most likely exposure pathway at the Facility. Facility workers could be exposed to contaminated surface soil by direct contact. Workers performing intrusive activities could be exposed to contaminated surface soil, subsurface soil, and groundwater by direct contact with these materials. Most of the contamination identified at the Facility was limited to the subsurface, generally in areas where contaminated soils are covered with clean fill or impermeable surfaces.

In the Gorham Street area, the contaminated surface soils were located outside the security fence. Consequently, area residents could also be exposed via direct contact or inhalation of airborne constituents derived from disturbing surface soils.

A secondary and less likely exposure scenario for on site and off site receptors could be ingestion of constituents.

5.3 Potential Receptors

Receptors are human or ecological populations that are potentially exposed to contaminants at the source area or areas where contaminants are transported due to release mechanisms. Possible human receptors for this Facility comprise Facility workers, nearby residents, off-site workers, and trespassers. Each of the receptor groups is discussed in more detail below. Human health exposure pathways and receptors are presented in Figure 10.

5.3.1 Facility Workers

These receptors comprise persons who work at the Facility (e.g., construction workers, industrial workers, and office workers). Depending on their activities and where they are located relative to the source area(s), these workers may be exposed via airborne contaminants, incidental soil and sediment ingestion, or dermal contact.

Based on activities at the Facility, most of the workers would be exposed only to contaminants present at the ground surface where protection is not provided by concrete, asphalt or soil cover. A subset of workers, workers performing intrusive work (e.g., utility, environmental, etc.), could be exposed to contaminated subsurface soil or contaminated groundwater.

5.3.2 Nearby Residents/Off-Facility Workers

These receptors comprise persons who live or work near the Facility. The most likely exposure scenario for these individuals is via airborne contaminants (gaseous or fugitive dust emissions/particulates) if they are located downwind from the Facility, or incidental contact with contaminated surface soil at the Gorham Street AOC. Another potential exposure pathway is direct contact with contaminated surface water and sediments, such as the Seneca-Cayuga Canal, if present. Subsurface utility workers outside the Facility could be exposed via direct contact to the soil and groundwater in the MW-10 area.

5.3.3 Trespasser/Non-Residential Visitors

Trespassers and non-residential visitors are persons who do not live at the Facility and come in contact with the Facility at a frequency less than Facility workers or nearby residents. These comprise visitors, contract personnel, trespassers, and delivery personnel. Potential exposure risk for these receptors is minimal.

SECTION 6

Summary, Conclusions, and Recommendations

RFI activities were conducted to resolve data gaps remaining after completion of the Sampling Visit. The results of the RFI, and conclusions and recommendations based on evaluation of existing and newly gathered data, are summarized below.

6.1 Summary and Conclusions

6.1.1 Former Village of Waterloo Dump Site (SWMU 1)

The results of the Sampling Visit and the RFI indicate:

- Approximately 7 cubic yards of fill materials containing glass bottles and associated soil were removed.
- Based on observations during test pit activities, fill material containing bottles is still present in the area and the vertical and horizontal limits of these materials have not been defined.
- Acetone was detected in a sample collected from a bottle (during the Sampling Visit) and in the excavation groundwater (during the RFI). Shallow groundwater from wells downgradient of the bottle-containing fill area contain acetone above the Class GA standard, likely as a result of release from the bottles.

6.1.2 Former Non-Hazardous Waste Container Storage Area (SWMU 8)

The results of the Sampling Visit and the RFI indicate:

- PAHs, barium, and copper are found at concentrations not typical for the site, but are limited in vertical and horizontal extent. These constituents are not attributable to activities at the SWMU, but are likely attributable to the Facility fill.
- The area is partially paved; therefore, potential exposure to these constituents is limited to workers conducting intrusive activities and worker contact with contaminated surface soil, if present.

6.1.3 MPA Residual Hopper (SWMU 25B)

The results of the Sampling Visit and the RFI indicate:

- PAHs, barium, and copper are found at concentrations not typical for the site, but are limited in vertical and horizontal extent. These constituents are not attributable to activities at the SWMU, but are likely attributable to the Facility fill.
- Iron and zinc are present above screening levels in this area; these constituents may be attributable to activities at the SWMU.

- The area is paved; therefore, potential exposure to these constituents is limited to the workers conducting intrusive activities.

6.1.4 Building 4 Pit (AOC B)

The results of the Sampling Visit and the RFI indicate:

- A number of VOCs and inorganics were detected in groundwater at and downgradient of this AOC at concentrations above screening levels.
- Remaining contaminated soil from the former sump may be a source of groundwater contamination in this area.
- No impacts to the Facility's standby production well were identified.
- The proximity of the wells associated with this AOC to the Seneca-Cayuga Canal, the direction of shallow groundwater flow, and the probable hydraulic connection of the shallow groundwater and the Canal, suggest contaminated groundwater is discharging to the Seneca Cayuga Canal.

6.1.5 Gorham Street (AOC C)

The results of the Sampling Visit and the RFI indicate:

- Impacted soils remaining in this area are limited in horizontal and vertical extent.
- PAHs and several inorganics are present at elevated levels in this area; however, these constituents do not appear to be attributable to waste management activities in this area but are likely attributable to the Facility fill.
- Iron and zinc are also present at elevated levels in this area; these constituents may be attributable to waste management activities in the vicinity of this AOC.
- Elevated levels of mercury and low level PCBs were found in surface soils along Gorham Street. No Facility source for the PCBs has been identified; the mercury source is unknown.
- The area is not paved; therefore, potential exposure to surface soil is not restricted.

6.1.6 Monitoring Well MW-10 Area

The results of the Sampling Visit and the RFI indicate:

- Toluene was detected in groundwater above Class GA standards.
- Soil and groundwater data collected around MW-10, and historical information suggested the probable source for the toluene in the groundwater is the sump.

6.1.7 Monitoring Well MW-11S Area

The results of the Sampling Visit and the RFI indicate:

- Bis(2-ethylhexyl)phthalate, arsenic, and pH have been observed at elevated levels in groundwater at MW-11.

- It is unclear if grout contamination is responsible for these levels.
- Soil sampling adjacent to MW-11S did not identify a source for the concentrations observed in groundwater.

6.1.8 MW-17

The results of the Sampling Visit and the RFI indicate:

- Acetone concentrations were observed in this well above Class GA standards. The source of this concentration is probable from SWMU 1 bottle-containing fill area.
- Concentrations of inorganics in groundwater collected during the RFI were generally an order of magnitude lower than those from the sample collected during the Sampling Visit.
- Arsenic, iron, magnesium, manganese, and sodium were still detected above Class GA standards; however, these constituents were elevated in several areas across the Facility and are not considered attributable to a release in this area.

6.2 Recommendations

Facility Wide: Sodium, chloride, and sulfate levels appear to be high on a Facility-wide basis, possibly due to regional conditions. A Facility-wide round of groundwater sampling is recommended. Groundwater samples should be analyzed for VOCs, metals, alkalinity, sulfate, and chloride. The samples should be collected via low-flow purging and sampling techniques. Field parameters including pH, dissolved oxygen, and oxidation-reduction potential should be collected during purging. This information would be used to identify areas of the Facility with naturally elevated levels of various constituents and areas that represent potential impacts from Facility activities.

Develop and implement an institutional controls plan for the Facility to minimize the potential for exposure of Facility and offsite personnel to constituents attributable to historic waste management activities at the various SWMUs/AOCs.

Former Village of Waterloo Dump Site (SWMU 1): Conduct a corrective measures study to evaluate options for eliminating or controlling the continuing source of groundwater contamination.

Non-Hazardous Waste Container Storage Area (SWMU 8): No further action is recommended for this SWMU. Constituents identified are not attributable to SWMU activities, and existing features (i.e., pavement) and proposed institutional controls will minimize potential exposure risk.

MPA Residual Hopper (SWMU 25B): No further action is recommended for this SWMU. Although iron and zinc may be attributable to SWMU activities, the nature of historic activities at the SWMU likely limits the areal extent of contamination. In addition, existing features (i.e., pavement) and proposed institutional controls will minimize potential exposure risk.

Building 4 Pit (AOC B): Evaluate whether soil at the former Building 4 Pit is a potential source of groundwater contamination. Implement institutional controls to minimize potential exposure to soil contaminants, and evaluate options for eliminating or controlling the continuing soil contaminant source (if identified).

Evaluate whether contaminated groundwater downgradient of this AOC is discharging to the Seneca-Cayuga Canal and, if so, whether the resulting concentrations in the Canal are at or below permissible levels.

Abandon the standby production well to reduce the potential for groundwater contamination detected in the shallow aquifer in this area to migrate downward into bedrock.

Gorham Street AOC (AOC C): Further evaluate the extent of soil contamination at this AOC. Implement institutional controls and/or corrective measures to minimize the potential exposure risk posed by contaminated surface soil in this area.

MW-10 Area: Evaluate and mitigate the sump as a continuing source of groundwater contaminants and monitor groundwater concentrations downgradient of the sump to assure declining concentrations of toluene over time.**MW-11S Area:** Abandon existing well and install a new well to verify existing groundwater conditions. Conduct corrective measures study to evaluate options for eliminating or controlling continuing source of groundwater contamination.

MW-17: No further action is recommended.

SECTION 7

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Tables

TABLE 1
Monitoring Well Construction Details
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Monitoring Well ID	Ground Surface Elevation (feet above msl)	Measuring Point Elevation (feet above msl)	Well Depth (feet bgs)	Screen Interval (feet above msl)
MW-01	434.18	433.87	16.50	417.37 - 430.87
MW-02	433.38	433.01	16.50	416.51 - 430.01
MW-03	434.33	433.95	16.50	417.45 - 430.95
MW-05S	445.89	445.40	13.08	432.32 - 442.32
MW-05I	445.90	445.45	29.83	415.62 - 420.62
MW-06	447.23	446.87	13.53	433.34 - 443.34
MW-07	438.49	437.98	12.78	425.20 - 435.20
MW-08	440.38	440.02	13.16	426.86 - 436.86
MW-09	435.98	435.42	15.70	419.72 - 429.72
MW-10	445.94	445.66	12.99	432.67 - 442.67
MW-11S	434.14	433.57	13.70	419.87 - 429.87
MW-11I	434.19	433.72	27.08	406.64 - 411.64
MW-12	434.31	433.74	12.02	421.72 - 429.72
MW-13	434.28	433.91	15.78	418.13 - 428.13
MW-14	444.37	444.10	16.53	427.57 - 437.57
MW-15	444.21	443.91	15.43	428.48 - 438.48
MW-16S	451.20	453.23	33.73	419.50 - 429.50
MW-16I	450.40	452.80	32.68	420.12 - 425.12
MW-17	439.75	441.65	14.74	426.91 - 434.91
MW-18	438.87	441.14	13.08	428.06 - 434.06
MW-19	446.27	445.89	17.34	428.55 - 438.55

Notes:

msl = mean sea level.
bgs = below ground surface.
Monitoring well construction details from the Sampling Visit Report (OBG, 2003).

TABLE 2
Water Level Information
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Monitoring Well ID	Measuring Point Elevation (feet above msl)	Groundwater Levels								Groundwater Elevation (feet above msl)	
		Sampling Visit				RFI					
		01/14/2002		11/04/2002		04/21/2004		04/22/2004	04/23/2004		
		DTW (feet)	Elevation (feet above msl)	DTW (feet)	Elevation (feet above msl)	DTW (feet)	Elevation (feet above msl)	Elevation (feet above msl)	Elevation (feet above msl)	Minimum	Maximum
MW-01	433.87	8.74	425.13	4.06	429.81	2.42	431.45	NM	NM	425.13	431.45
MW-02	433.01	6.05	426.96	3.95	429.06	3.88	429.13	NM	NM	426.96	429.13
MW-03	433.95	5.67	428.28	4.48	429.47	3.42	430.53	NM	NM	428.28	430.53
MW-05S	445.40	9.35	436.05	7.81	437.59	4.38	441.02	NM	NM	436.05	441.02
MW-05I	445.45	15.05	430.40	13.21	432.24	11.33	434.12	NM	NM	430.40	434.12
MW-06	446.87	5.17	441.70	6.22	440.65	2.83	444.04	NM	NM	440.65	444.04
MW-07	437.98	6.13	431.85	5.50	432.48	4.60	433.38	NM	NM	431.85	433.38
MW-08	440.02	8.05	431.97	7.80	432.22	8.43	431.59	NM	NM	431.59	432.22
MW-09	435.42	8.15	427.27	6.61	428.81	NM*				427.27	428.81
MW-10	445.66	7.05	438.61	8.09	437.57	4.98	440.68	NM	NM	437.57	440.68
MW-11S	433.57	3.31	430.26	2.08	431.49	1.61	431.96	NM	NM	430.26	431.96
MW-11I	433.72	15.91	417.81	5.80	427.92	5.46	428.26	NM	NM	417.81	428.26
MW-12	433.74	6.90	426.84	4.76	428.98	4.22	429.52	NM	NM	426.84	429.52
MW-13	433.91	8.26	425.65	4.75	429.16	3.96	429.95	NM	NM	425.65	429.95
MW-14	444.10	11.65	432.45	10.92	433.18	9.23	434.87	NM	NM	432.45	434.87
MW-15	443.91	10.91	433.00	10.41	433.50	8.14	435.77	NM	NM	433.00	435.77
MW-16S	453.23	27.32	425.91	23.44	429.79	21.40	431.83	NM	NM	425.91	431.83
MW-16I	452.80	27.15	425.65	23.17	429.63	21.24	431.56	NM	NM	425.65	431.56
MW-17	441.65	14.50	427.15	12.10	429.55	10.66	430.99	NM	NM	427.15	430.99
MW-18	441.14	11.30	429.84	11.30	429.84	9.94	431.20	NM	NM	429.84	431.20
MW-19	445.89	14.55	431.34	14.12	431.77	10.90	434.99	NM	NM	431.34	434.99
SG-1	442.69	NA		NA		NA		443.89	443.79	443.79	443.89
SG-2	433.49	NA		NA		NA		428.64	427.94	427.94	428.64

Notes:

NM* = Not measured, well not located.
DTW = Depth to water from the measuring point.
msl = mean sea level.
2002 water level information from the Sampling Visit Report (OBG, 2003).
SG = Stream Guage
NA = Not Available for measurement

TABLE 3
Summary of Other Sample Collection
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	Field Sample ID	Date Collected	Matrix	Analysis Conducted
Test Pits				
Landfill Test Pit Water	Landfill	04/20/04	water	TCL VOCs, TCL SVOCs, TAL Metals (total and dissolved)
Testpit 9-1 (Bottle from Test Pit)	Testpit 9-1 white	04/21/04	liqid	TCL VOCs, TCL SVOCs, TAL Metals (total)
Testpit 9-2 (Bottle from Test Pit)	Testpit 9-2 clear	04/21/04	liqid	TCL VOCs, TCL SVOCs, TAL Metals (total)

Notes:

TCL VOCs - Target Compound List Volatile Organic Compounds
TCL SVOCs - Target Compound List Semi-Volatile Organic Compounds
TAL - Target Analyte List

TABLE 4
Summary of Soil Sample Collection Information
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	Field Sample ID	Date Sampled	Depth Interval (feet bgs)	Depth Interval Rational	Analysis
Former Non-Hazardous Waste Container Storage Area (SWMU 8)					
SB-3A	SB-3A-0-2	04/21/04	0 - 2	Depth taken per the Workplan	TAL Metals
	SB-3A-2-4	04/21/04	2 - 4	Depth taken per the Workplan	TAL Metals
	SB-3A-6-8	04/21/04	6 - 8	Depth taken per the Workplan	TAL Metals
SB-3B	SB-3B-1-2	04/21/04	1 - 2	Depth taken per the Workplan	TAL Metals
	SB-3B-3-4	04/21/04	3 - 4	Depth taken per the Workplan	TAL Metals
	SB-3B-8-9	04/21/04	8 - 9	Depth taken per the Workplan	TAL Metals
MPA Residue Hopper (SWMU 25B)					
SB-8A	SB-8A-2-4	04/20/04	2 - 4	Depth taken per the Workplan	TAL Metals
	SB-8A-4-6	04/20/04	4 - 6	Depth taken per the Workplan	TAL Metals
SB-8B	SB-8B-2-4	04/20/04	2 - 4	Depth taken per the Workplan	TAL Metals
	SB-8B-5-6	04/20/04	5 - 6	Depth taken per the Workplan	TAL Metals
Building 4 Pit (AOC B)					
B01_41904	B01_41904_9.5-10.5	04/19/04	9.5 - 10.5	Sample Collected at Highest PID	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals
B02_41904	B02_41904_7.5-8.5	04/19/04	7.5 - 8.5	Sample Collected at Highest PID	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals
Gorham Street (AOC C)					
SB-1A	SB-1A-0-2	04/19/04	0 - 2	Depth taken per the Workplan	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals, Sulfide Reactivity
	SB-1A-2-4	04/19/04	2 - 4	Depth taken per the Workplan	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals, Sulfide Reactivity
	SB-1A-4-6	04/19/04	4 - 6	Depth taken per the Workplan	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals, Sulfide Reactivity
SB-1B	SB-1B-0-2	04/20/04	0 - 2	Depth taken per the Workplan	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals, Sulfide Reactivity
	SB-1B-2-4	04/20/04	2 - 4	Depth taken per the Workplan	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals, Sulfide Reactivity
	SB-1B-6-8	04/20/04	6 - 8	Depth taken per the Workplan	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals, Sulfide Reactivity
SB-2A	SB-2A-0-2	04/20/04	0 - 2	Depth taken per the Workplan	TAL Metals
	SB-2A-2-4	04/20/04	2 - 4	Depth taken per the Workplan	TAL Metals
	SB-2A-6-8	04/20/04	6 - 8	Depth taken per the Workplan	TAL Metals
SB-2B	SB-2B-0-2	04/20/04	0 - 2	Depth taken per the Workplan	TAL Metals
	SB-2B-2-4	04/20/04	2 - 4	Depth taken per the Workplan	TAL Metals
	SB-2B-6-8	04/20/04	6 - 8	Depth taken per the Workplan	TAL Metals

TABLE 4
Summary of Soil Sample Collection Information
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	Field Sample ID	Date Sampled	Depth Interval (feet bgs)	Depth Interval Rational	Analysis
Monitoring Well MW-11S					
B02_42004	B02_42004_4-6	04/20/04	4 - 6	Depth taken per the Workplan	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals
	B02_42004_7-9	04/20/04	7 - 9	Depth taken per the Workplan	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals
Monitoring Well MW-10					
SB-10A	SB-10A-4-6	04/20/04	4 - 6	Depth taken per the Workplan	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals
	SB-10A-10-12	04/20/04	10 -12	Depth taken per the Workplan	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals
SB-10B	SB-10B-2-4	04/21/04	2 - 4	Depth taken per the Workplan	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals
	SB-10B-10-12	04/21/04	10 - 12	Depth taken per the Workplan	TCL VOCs, TCL SVOCs, TCL PCBs, TAL Metals
Background Samples					
HF-1	HF-1-0-2	04/21/04	0 - 2	Depth taken per the Workplan	TAL Metals
	HF-1-8-9	04/21/04	8 - 9	Depth taken per the Workplan	TAL Metals
HF-2	HF-2-4-5	04/21/04	4 - 5	Depth taken per the Workplan	TAL Metals
	HF-2-12-13	04/21/04	12 - 13	Depth taken per the Workplan	TAL Metals
HF-3	HF-3-2-4	04/21/04	2 - 4	Depth taken per the Workplan	TAL Metals
	HF-3-5-6	04/21/04	5 - 6	Depth taken per the Workplan	TAL Metals
HF-4	HF-4-3-4	04/21/04	3 - 4	Depth taken per the Workplan	TAL Metals
	HF-4-7-8	04/21/04	7 - 8	Depth taken per the Workplan	TAL Metals
	HF-4-2-3	04/21/04	2 - 3	Depth taken per the Workplan	TAL Metals

Notes:

bgs = below ground surface.
TCL VOCs = Target Compound List Volatile Organic Compounds.
TCL SVOCs = Target Compound List Semi-Volatile Organic Compounds.
TCL PCBs = Target Compound List Polychlorinated Biphenyls.
TAL = Target Analyte List.

TABLE 5
Summary of Groundwater Sample Collection Information
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	Field Sample ID	Date Collected	Matrix	Analysis Conducted
Monitoring Wells				
MW-01	MW-1	042304	groundwater	TCL VOs, TCL SVOs, TAL Metals (total and dissolved), turbidity
MW-02	MW-2	042304	groundwater	TCL VOs, TCL SVOs, TAL Metals (total and dissolved), turbidity
MW-03	MW-3	042304	groundwater	TCL VOs, TCL SVOs, TAL Metals (total and dissolved), turbidity
MW-10	MW-10	042204	groundwater	TCL VOs, TCL SVOs, TAL Metals (total and dissolved), turbidity
MW-11S	MW-11S	042204	groundwater	TCL VOs, TCL SVOs, TAL Metals (total and dissolved), turbidity
MW-11I	MW-11I	042204	groundwater	TCL VOs, TCL SVOs, TAL Metals (total and dissolved), turbidity
MW-17	MW-17	042204	groundwater	TCL VOs, TCL SVOs, TAL Metals (total and dissolved), turbidity
Temporary Piezometers				
GW-10A	GW-10A	042204	groundwater	TCL VOs, TCL SVOs, TAL Metals (total), turbidity
GW-10B	GW-10B	042204	groundwater	TCL VOs
GW-10C	GW-10C	042204	groundwater	TCL VOs, TCL SVOs, TAL Metals (total), turbidity
GW-10D	GW-10D	042204	groundwater	TCL VOs, TCL SVOs, TAL Metals (total), turbidity
Test Pits				
Landfill	Landfill	042004	water	TCL VOs, TCL SVOs, TAL Metals (total and dissolved)
Testpit 9-1	Testpit 9-1 white	042104	other	TCL VOs, TCL SVOs, TAL Metals (total)
Testpit 9-2	Testpit 9-2 clear	042104	other	TCL VOs, TCL SVOs, TAL Metals (total)
Building 4				
Building 4 Production Well	BLDG-4-PW	042204	groundwater	TCL VOs, TCL SVOs, TAL Metals (total and dissolved)
Building 4 Sump	SUMP042204	042204	groundwater	TCL VOs, TCL SVOs, TAL Metals (total and dissolved), turbidity

Notes:

TCL VOs - Target Compound List Volatile Organic Compounds.
TCL SVOs - Target Compound List Semi-Volatile Organic Compounds.
TAL - Target Analyte List

TABLE 6
Volatile Organic Compounds in Other Samples
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID Sample Date Sample Type	NYSDEC Class GA Values	SWMU1 Landfill[1] 4/20/04 N	 Test Pit 9-1 4/21/04 N	 Test Pit 9-2 4/21/04 N
VOC (µg/l)				
1,1,1-Trichloroethane	5.0[b]	U (1.0)	U (500)	U (500)
1,1,2,2-Tetrachloroethane	5.0[b]	U (0.5)	U (500)	U (500)
1,1,2-Trichloroethane	1	U (1.0)	U (500)	U (500)
1,1-Dichloroethane	5.0[b]	U (1.0)	U (500)	U (500)
1,1-Dichloroethene	5.0[b]	U (1.0)	U (500)	U (500)
1,2-Dichloroethane	0.6	U (1.0)	U (500)	U (500)
1,2-Dichloropropane	1.0	U (1.0)	U (500)	U (500)
2-Butanone	50	U (10)	U (1000)	U (1000)
2-Hexanone	50[a]	U (5.0)	U (500)	U (500)
4-Methyl-2-Pentanone	not listed	U (5.0)	U (500)	U (500)
Acetone	50[a]	**194**	U (1000)	U (1000)
Acrylonitrile	5.0[b]	U (5.0)	U (2000)	U (2000)
Benzene	1.0	U (1.0)	U (500)	U (500)
Bromodichloromethane	50[a]	U (1.0)	U (500)	U (500)
Bromoform	50[a]	U (1.0)	U (500)	U (500)
Bromomethane	5.0[b]	U (1.0)	U (500)	U (500)
Carbon Disulfide	60	**1.14**	U (500)	U (500)
Carbon tetrachloride	5	U (1.0)	U (500)	U (500)
Chlorobenzene	5.0[b]	U (1.0)	U (500)	U (500)
Chloroethane	5.0[b]	U (1.0)	U (500)	U (500)
Chloroform	7.0	U (1.0)	U (500)	U (500)
Chloromethane	not listed	U (1.0)	U (500)	U (500)
cis-1,2-Dichloroethylene	5.0[b]	U (1.0)	U (500)	U (500)
cis-1,3-Dichloropropene	not listed	U (1.0)	U (500)	U (500)
Dibromochloromethane	50[a]	U (1.0)	U (500)	U (500)
Ethylbenzene	5.0[b]	U (1.0)	U (500)	U (500)
Ephichlorohydrin	not listed	NF	NA	NA
Methylene chloride	5.0[b]	U (2.0)	U (500)	U (500)
Styrene	5.0[b]	U (0.5)	U (500)	U (500)
Tetrachloroethene	5.0[b]	U (1.0)	U (500)	U (500)
Toluene	5.0[b]	U (1.0)	U (500)	U (500)
trans-1,2-Dichloroethene	5	U (1.0)	U (500)	U (500)
trans-1,3-Dichloropropene	not listed	U (1.0)	U (500)	U (500)
Trichloroethene	5.0[b]	U (1.0)	U (500)	U (500)
Vinyl chloride	2.0	U (1.0)	U (500)	U (500)
Xylenes, Total	5.0	U (2.0)	U (500)	U (500)

Notes:
Sample Type:
N = Field sample.
FD = Field duplicate.
1 = The sample "Landfill" is the only sample that is compared to the Class GA Values for this table.
Class GA Values = Class GA groundwater standards or guidelines (NYSDEC, June 1998; as amended).
not listed = No screening level is provided by NYSDEC.
NA = Not analyzed
U = The constituent was not detected above the associated reporting limit. (reporting limits are shown in parenthesis)
NF = The constituent was not found during a Library Search
Bold indicates that the constituent was detected above reporting limits
Shading indicates that the constituent was detected above Class GA standards or guidelines.
a = Guidance value.
b= Principal organic contaminant standard, a general standard that applies individually to substances that do not have chemical specific standards or guidelines.

TABLE 7
Semi-Volatile Organic Compounds in Other Samples
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID Sample Date Sample Type	NYSDEC Class GA Values	SWMU 1 Landfill[1] 4/20/04 N	 Test Pit 9-1 4/20/04 N	 Test Pit 9-2 4/20/04 N
SVOC (µg/l)				
1,2,4-Trichlorobenzene	5.0[b]	U (51)	U (51)	U (51)
1,2-Dichlorobenzene	3	U (51)	U (51)	U (51)
1,3-Dichlorobenzene	3	U (51)	U (51)	U (51)
1,4-Dichlorobenzene	3	U (51)	U (51)	U (51)
2,4,5-Trichlorophenol	not listed	U (51)	U (51)	U (51)
2,4,6-Trichlorophenol	not listed	U (51)	U (51)	U (51)
2,4-Dichlorophenol	1 .0 or 5.0	U (51)	U (51)	U (51)
2,4-Dimethylphenol	1	U (51)	U (51)	U (51)
2,4-Dinitrophenol	10	U (255)	U (255)	U (255)
2,4-Dinitrotoluene	5.0[b]	U (51)	U (51)	U (51)
2,6-Dinitrotoluene	5.0[b]	U (51)	U (51)	U (51)
2-Chloronaphthalene	10a	U (51)	U (51)	U (51)
2-Chlorophenol	not listed	U (51)	U (51)	U (51)
2-Methylnaphthalene	not listed	U (51)	U (51)	U (51)
2-Methylphenol	not listed	U (51)	U (51)	U (51)
2-Nitroaniline	5.0[b]	U (255)	U (255)	U (255)
2-Nitrophenol	not listed	U (51)	U (51)	U (51)
3,3'-Dichlorobenzidine	not listed	U (102)	U (102)	U (102)
3-,4-Methylphenol	not listed	U (51)	U (51)	U (51)
3-Nitroaniline	5.0[b]	U (255)	U (255)	U (255)
4,6-Dinitro-2-methylphenol	not listed	U (255)	U (255)	U (255)
4-Bromophenyl phenyl ether	not listed	U (51)	U (51)	U (51)
4-Chloro-3-methylphenol	not listed	U (51)	U (51)	U (51)
4-Chloroaniline	not listed	U (51)	U (51)	U (51)
4-Chlorophenyl phenyl ether	not listed	U (51)	U (51)	U (51)
4-Nitroaniline	5.0[b]	U (255)	U (255)	U (255)
4-Nitrophenol	not listed	U (255)	U (255)	U (255)
Acenaphthene	20[a]	U (51)	U (51)	U (51)
Acenaphthylene	not listed	U (51)	U (51)	U (51)
Anthracene	50[a]	U (51)	U (51)	U (51)
Benzo (a) anthracene	not listed	U (51)	U (51)	U (51)
Benzo (a) pyrene	ND	U (51)	U (51)	U (51)
Benzo (b) fluoranthene	0.0020[a]	U (51)	U (51)	U (51)
Benzo (g,h,i) perylene	0.0020[a]	U (51)	U (51)	U (51)
Benzo (k) fluoranthene	0.0020[a]	U (51)	U (51)	U (51)
Bis (2-chloroethoxy) methane	5.0[b]	U (51)	U (51)	U (51)
Bis (2-chloroethyl) ether	1	U (51)	U (51)	U (51)

TABLE 7
Semi-Volatile Organic Compounds in Other Samples
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID Sample Date Sample Type	NYSDEC Class GA Values	SWMU 1 Landfill[1] 4/20/04 N	 Test Pit 9-1 4/20/04 N	 Test Pit 9-2 4/20/04 N
SVOC (µg/l)				
Bis (2-chloroisopropyl) ether	not listed	U (51)	U (51)	U (51)
Bis (2-ethylhexyl) phthalate	5.0	U (51)	U (51)	U (51)
Butyl benzylphthalate	50[a]	U (51)	U (51)	U (51)
Carbazole	not listed	U (51)	U (51)	U (51)
Chrysene	0.0020[a]	U (51)	U (51)	U (51)
Dibenzo (a,h) anthracene	not listed	U (51)	U (51)	U (51)
Dibenzofuran	not listed	U (51)	U (51)	U (51)
Diethyl phthalate	50[a]	U (51)	U (51)	U (51)
Dimethyl phthalate	50[a]	U (51)	U (51)	U (51)
Di-n-butylphthalate	50	U (51)	U (51)	U (51)
Di-n-octylphthalate	50[a]	U (51)	U (51)	U (51)
Fluoranthene	50[a]	U (51)	U (51)	U (51)
Fluorene	50[a]	U (51)	U (51)	U (51)
Hexachlorobenzene	0.04	U (51)	U (51)	U (51)
Hexachlorobutadiene	0.5	U (51)	U (51)	U (51)
Hexachlorocyclopentadiene	5.0[b]	U (51)	U (51)	U (51)
Hexachloroethane	5.0[b]	U (51)	U (51)	U (51)
Indeno (1,2,3-c,d) pyrene	0.0020[a]	U (51)	U (51)	U (51)
Isophorone	50[a]	U (51)	U (51)	U (51)
Naphthalene	10[a]	U (51)	U (51)	U (51)
Nitrobenzene	0.4	U (51)	U (51)	U (51)
n-Nitrosodi-n-propylamine	not listed	U (51)	U (51)	U (51)
n-Nitrosodiphenylamine	50[a]	U (51)	U (51)	U (51)
Pentachlorophenol	1	U (255)	U (255)	U (255)
Phenanthrene	50[a]	U (51)	U (51)	U (51)
Phenol	1	U (51)	U (51)	U (51)
Pyrene	50[a]	U (51)	U (51)	U (51)

Notes:

Sample Type:

N = Field sample.

FD = Field duplicate.

1 = The sample "Landfill" is the only sample that is compared to the Class GA Values for this table.

Class GA Values = Class GA groundwater standards or guidelines (NYSDEC, June 1998; as amended).

not listed = No screening level is provided by NYSDEC.

U = The constituent was not detected above the associated reporting limit. (reporting limits are shown in parenthesis)

Bold indicates that the constituent was detected above the reporting limits.

Shading indicates that the constituent was detected above Class GA standards or guidelines.

a = Guidance value.

b= Principal organic contaminant standard, a general standard that applies individually to substances that do not have chemical specific standards or guidelines.

TABLE 8
Inorganics in Other Samples
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC	SWMU 1			
		Landfill[1]		Test Pit 9-1	Test Pit 9-2
Sample Date	Class	4/20/04		4/21/04	4/21/04
Sample Type	GA	N		N	N
Sample Prep	Values	Total	Dissolved	Total	Total
Inorganics (µg/l)					
Aluminum	not listed	**35,500**	**190**	**17,100**	**15,600**
Antimony	3	U (60)	U (60)	U (60000)	U (6000)
Arsenic	25	**54.6**	**5.52**	U (5000)	**879**
Barium	1000	**3,640**	U (100)	U (5000)	U (5000)
Beryllium	3	U (5.0)	U (5.0)	U (250)	U (250)
Cadmium	5	**40.3**	U (5.0)	U (250)	U (250)
Calcium	not listed	**279,000**	**164,000**	**454,000**	**233,000**
Chromium	50	**89.1**	U (10)	U (500)	U (500)
Cobalt	not listed	U (50)	U (50)	U (2500)	U (2500)
Copper	200	**3,010**	**26.7**	**612**	**514**
Iron	300	**88,900**	**263**	**6,970**	**6,970**
Lead	25	**35,200**	**22**	U (5000)	**694**
Magnesium	35000	**48,800**	**25,400**	**84,900**	U (50000)
Manganese	300	**2,440**	**718**	U (2500)	U (2500)
Mercury	0.7	**32.9**	U (0.222)	U (11.9)	U (10.8)
Nickel	100	**155**	U (40)	U (2000)	U (2000)
Potassium	not listed	**18,300**	**10,600**	U (250000)	U (250000)
Selenium	10	**11.2**	U (5.0)	U (5000)	U (500)
Silver	50	**12.1**	U (10)	U (500)	U (1000)
Sodium	20000	**96,200**	**98,300**	**314,000**	**250,000**
Thallium	0.5	U (10)	U (10)	U (10000)	U (1000)
Vanadium	not listed	**86.6**	U (50)	U (2500)	U (2500)
Zinc	2000	**6,040**	**94**	**12,200**	**6,230**
pH	not listed	NA	NA	8.49	8.9

Notes:

Sample Type:
N = Field sample.
FD = Field duplicate.
1 = The sample "Landfill" is the only sample that is compared to the Class GA values for this table.
Class GA values = Class GA groundwater standards or guidelines (NYSDEC, June 1998; as amended)
not listed = No screening level is provided by NYSDEC.
NA = Not analyzed
U = The compound was not detected above the associated reporting limit. (reporting limits shown in parenthesis)
Bold indicates that the analyte was detected above reporting limit.
Shading indicates that the analyte was detected above Class GA standards or guidelines.

TABLE 9
Inorganics in Background Soil Samples
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC	Eastern	HF-1		HF-2		HF-3		HF-4			Maximum
Sample Depth	TAGM	US	(0 - 2')	(8 - 9')	(4 - 5')	(12 - 13')	(2 - 4')	(5 - 6')	(2 - 3')	(3 - 4')	(7 - 8')	Detected
Sample Date	4046	Background	4/21/04	4/21/04	4/21/04	4/21/04	4/21/04	4/21/04	4/21/04	4/21/04	4/21/04	Concentration
Sample Type	RSCOs	Values	N	N	N	N	N	N	N	N	N	
Inorganics (mg/kg)												
Aluminum	SB	33,000	**6,580**	**8,790**	**16,500**	**22,400**	**30,100**	**10,200**	**3,520**	**15,800**	**6,650**	**30,100**
Antimony	SB	not listed	U (4.2)	U (5.43)	U (6.18)	U (8.76)	U (6.89)	U (4.78)	U (5.87)	U (6.13)	U (6.53)	ND
Arsenic	7.5 or SB	5.0	**0.844**	**3.24**	**2.52**	**2.39**	**2.82**	**5.47**	**2.71**	**2.16**	**2.81**	**5.47**
Barium	300 or SB	290	**46**	**59.3**	**98.3**	**143**	**214**	**86.7**	**35.8**	**107**	**49.8**	**214**
Beryllium	0.16 or SB	0.60	U (0.35)	U (0.453)	**0.71**	**1.0**	**1.43**	**0.441**	**0.538**	**0.612**	U (0.544)	**1.43**
Cadmium	1.0 or SB	0.20	U (0.35)	U (0.453)	U (0.515)	U (0.73)	U (0.574)	U (0.398)	U (0.49)	U (0.511)	U (0.544)	ND
Calcium	SB	3,400	**50,200**	**53,900**	**70,700**	**8,470**	**6,020**	**3,970**	**3,130**	**2,990**	**8,260**	**70,700**
Chromium	10 or SB	33	**8.45**	**11.5**	**19.3**	**27.5**	**36.9**	**11.0**	**7.04**	**18.2**	**11.1**	**36.9**
Cobalt	30	5.9	**4.53**	**6.32**	**10.4**	**13.1**	**16.6**	**8.19**	**5.65**	**14.6**	U (5.44)	**16.6**
Copper	25 or SB	13	**10.2**	**13.7**	**16.3**	**17.6**	**26.5**	**6.14**	**23.2**	**3.39**	**17.2**	**26.5**
Iron	2,000 or SB	14,000	**10,000**	**13,300**	**20,300**	**28,600**	**37,500**	**18,000**	**4,380**	**27,400**	**9,380**	**37,500**
Lead	SB	14	**4.1**	**6.63**	**7.09**	**12.2**	**9.11**	**20.3**	**190**	**6.85**	**49.9**	**190**
Magnesium	SB	2,300	**16,200**	**15,700**	**7,160**	**7,000**	**10,300**	**1,950**	**605**	**3,040**	**2,570**	**16,200**
Manganese	SB	285	**302**	**343**	**509**	**250**	**471**	**1140**	**35.5**	**891**	**143**	**1,140**
Mercury	0.10	0.81	U (0.261)	U (0.299)	U (0.309)	U (0.38)	U (0.313)	U (0.334)	U (0.301)	U (0.294)	U (0.324)	ND
Nickel	13 or SB	12	**9.15**	**12.7**	**21.7**	**26.1**	**35.7**	**8.35**	**13.2**	**13.1**	**11.3**	**36**
Potassium	SB	12,000	**1,780**	**2,370**	**3,600**	**3,720**	**5,160**	**844**	U (490)	**1,510**	**879**	**5,160**
Selenium	2.0 or SB	0.30	U (0.492)	U (0.533)	U (0.572)	U (0.775)	U (0.68)	U (0.727)	U (0.627)	U (0.576)	U (0.675)	ND
Silver	SB	not listed	U (0.701)	U (0.905)	U (1.03)	U (1.46)	U (1.15)	U (0.796)	U (0.979)	U (1.02)	U (1.09)	ND
Sodium	SB	2,500	**121**	**142**	**158**	U (146)	**449**	**208**	**121**	**151**	**176**	**449**
Thallium	SB	not listed	U (0.985)	U (1.07)	U (1.14)	U (1.55)	U (1.36)	U (1.45)	U (1.25)	U (1.15)	U (1.35)	ND
Vanadium	150 or SB	43	**14.9**	**19.8**	**29.3**	**41.7**	**51.6**	**23.8**	**19**	**31.1**	**21.6**	**52**
Zinc	20 or SB	40	**25**	**37.6**	**47.8**	**62.5**	**78.9**	**45.4**	**15.6**	**43**	**41.1**	**79**

Notes:

Sample Type:
N = Field sample.
FD = Field duplicate.
TAGM 4046 RSCOs = Recommended Soil Cleanup Objectives (NYSDEC, 1/94; as amended).
not listed = No screening level is provided by NYSDEC or no Eastern U.S. Background value is available.
ND = Not detected
SB = Site background.
U = The analyte was not detected above the associated reporting limit. (reporting limits shown in parenthesis)
Bold indicates that the analyte was detected above reporting limits
Shading indicates that the analyte was detected above TAGM 4046 screening levels or Eastern U.S. Background values

TABLE 10
Background Soil Sample Statistics
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Analyte	Detection Frequency	Concentration (mg/Kg)			
		Minimum	Maximum	Geo Mean	Median
Aluminum	100%	3,520	30,100	11,036	10,200
Arsenic	100%	0.84	5.47	2.53	2.71
Barium	100%	35.8	214	80.1	86.7
Beryllium	67%	0.44	1.43	0.727	0.661
Calcium	100%	2,990	70,700	11,296	8,260
Chromium	100%	7.04	36.9	14.6	11.5
Cobalt	89%	4.53	16.6	9.02	9.3
Copper	100%	3.39	26.5	12.7	16.3
Iron	100%	4,380	37,500	15,721	18,000
Lead	100%	4.1	190	14.5	9.11
Magnesium	100%	605	16,200	4,741	7,000
Manganese	100%	35.5	1,140	317	343
Nickel	100%	8.35	35.7	15	13.1
Potassium	89%	844	5,160	2,062	2,075
Sodium	89%	121	449	173	155
Vanadium	100%	14.9	51.6	26.1	23.8
Zinc	100%	15.6	78.9	40.3	43

Notes:
Silver, cadmium, antimony, selenium, thallium, and mercury were not detected in any background soil sample so these constituents were not included in this table

TABLE 11
Volatile Organic Compounds in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

		Building 4 Pit AOC		MW-10 Area					SWMU 25B
Location ID	NYSDEC	B01_41904	B02_41904	SB-10A		SB-10B			SB-08
Sample Depth	TAGM	(9.5 - 10.5')	(7.5 - 8.5')	(4 - 6')	(10 - 12')	(2 - 4')	(2 - 4')	(10 - 12')	(6 - 8')
Sample Date	4046	4/19/04	4/19/04	4/20/04	4/20/04	4/21/04	4/21/04	4/21/04	12/19/01
Sample Type	RSCOs	N	N	N	N	N	FD	N	N
VOC (mg/kg)									
1,1,1-Trichloroethane	0.80	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
1,1,2,2-Tetrachloroethane	0.60	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	UJ (0.0050)
1,1,2-Trichloroethane	not listed	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
1,1-Dichloroethane	0.20	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
1,1-Dichloroethene	0.40	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
1,2-Dichloroethane	0.10	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
1,2-Dichloropropane	not listed	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
2-Butanone	0.30	U (0.0134)	U (0.0745)	U (0.0128)	U (0.0131)	U (0.0122)	U (0.0121)	U (0.0125)	**0.01 J**
2-Hexanone	not listed	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.010)
4-Methyl-2-Pentanone	1.0	**0.624**	**7.1**	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.010)
Acetone	0.20	**0.0209**	**0.327**	**0.022**	**0.0487**	U (0.0122)	U (0.0121)	U (0.0125)	**0.056**
Acrylonitrile	not listed	U (0.0268)	U (0.149)	U (0.0257)	U (0.0262)	U (0.0244)	U (0.0241)	U (0.025)	U (0.040)
Benzene	0.060	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
Bromodichloromethane	not listed	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
Bromoform	not listed	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
Bromomethane	not listed	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.010)
Carbon Disulfide	2.7	**0.0308**	**1.18**	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	**0.0062**
Carbon tetrachloride	0.60	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
Chlorobenzene	1.7	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
Chloroethane	1.9	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.010)
Chloroform	0.3	**0.00371 E**	**0.0784**	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	**0.0048 J**
Chloromethane	not listed	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.010)
cis-1,2-Dichloroethylene	not listed	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
cis-1,3-Dichloropropene	not listed	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
Dibromochloromethane	not listed	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
Ephichlorohydrin	not listed	NF	NF	NF	NF	NF	NF	NF	UJ (0.10)
Ethylbenzene	5.5	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	**0.0079**
Methylene chloride	0.10	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.010)
Styrene	not listed	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
Tetrachloroethene	1.4	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
Toluene	1.5	U (0.0067)	**0.14**	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	**0.0015 J**
Trans-1,2-Dichloroethene	0.30	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
trans-1,3-Dichloropropene	not listed	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
Trichloroethene	0.70	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.005)
Myl chloride	0.20	U (0.0067)	U (0.0373)	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	U (0.010)
Xenes, Total	1.2	U (0.0067)	**0.213**	U (0.00642)	U (0.00654)	U (0.0061)	U (0.00603)	U (0.00625)	**0.037**

TABLE 11
Volatile Organic Compounds in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC	MW-11S Area		Gorham Street AOC					
		B02_42004		SB-01	SB-01A			SB-01B	
Sample Depth	TAGM	(6 - 8')	(7 - 9')	(2 - 4')	(0 - 2')	(2 - 4')	(4 - 6')	(0 - 2')	(2 - 4')
Sample Date	4046	4/20/04	4/20/04	12/18/01	4/19/04	4/19/04	4/19/04	4/20/04	4/20/04
Sample Type	RSCOs	N	N	N	N	N	N	N	N
VOC (mg/kg)									
1,1,1-Trichloroethane	0.80	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
1,1,2,2-Tetrachloroethane	0.60	U (0.00634)	U (0.00556)	UJ (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
1,1,2-Trichloroethane	not listed	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
1,1-Dichloroethane	0.20	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
1,1-Dichloroethene	0.40	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
1,2-Dichloroethane	0.10	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
1,2-Dichloropropane	not listed	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
2-Butanone	0.30	**0.0253**	U (0.0111)	**0.0042 J**	U (0.013)	U (0.013)	U (0.0129)	U (0.0129)	U (0.0129)
2-Hexanone	not listed	U (0.00634)	U (0.00556)	U (0.0064)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
4-Methyl-2-Pentanone	1.0	U (0.00634)	U (0.00556)	U (0.0064)	U (0.00648)	**0.0943**	U (0.00645)	U (0.00645)	U (0.00645)
Acetone	0.20	U (0.0127)	U (0.0111)	U (0.034)	U (0.013)	**0.031**	**0.0296**	U (0.0129)	U (0.0129)
Acrylonitrile	not listed	U (0.0254)	U (0.0222)	U (0.026)	U (0.0259)	U (0.0259)	U (0.0258)	U (0.0258)	U (0.0258)
Benzene	0.060	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Bromodichloromethane	not listed	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Bromoform	not listed	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Bromomethane	not listed	U (0.00634)	U (0.00556)	U (0.0064)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Carbon Disulfide	2.7	U (0.00634)	U (0.00556)	**0.00086 J**	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Carbon tetrachloride	0.60	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Chlorobenzene	1.7	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Chloroethane	1.9	U (0.00634)	U (0.00556)	U (0.0064)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Chloroform	0.3	U (0.00634)	U (0.00556)	**0.00073 J**	**0.00436 E**	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Chloromethane	not listed	U (0.00634)	U (0.00556)	U (0.0064)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
cis-1,2-Dichloroethylene	not listed	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
cis-1,3-Dichloropropene	not listed	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Dibromochloromethane	not listed	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Ephichlorohydrin	not listed	NF	NF	UJ (0.064)	NF	NF	NF	NF	NF
Ethylbenzene	5.5	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Methylene chloride	0.10	U (0.00634)	U (0.00556)	U (0.0064)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Styrene	not listed	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Tetrachloroethene	1.4	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Toluene	1.5	U (0.00634)	U (0.00556)	**0.0081**	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Trans-1,2-Dichloroethene	0.30	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
trans-1,3-Dichloropropene	not listed	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Trichloroethene	0.70	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Vinyl chloride	0.20	U (0.00634)	U (0.00556)	U (0.0064)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)
Xenes, Total	1.2	U (0.00634)	U (0.00556)	U (0.0032)	U (0.00648)	U (0.00649)	U (0.00645)	U (0.00645)	U (0.00645)

TABLE 11
Volatile Organic Compounds in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

		Gorham Street AOC		SWMU 8	
Location ID	**NYSDEC**	**SB-01B**	**SB-02**	**SB-03**	**SB-04**
Sample Depth	**TAGM**	**(6 - 8')**	**(6 - 8')**	**(8 - 10')**	**(4 - 6')**
Sample Date	**4046**	**4/20/04**	**12/18/01**	**12/18/01**	**12/18/01**
Sample Type	**RSCOs**	**N**	**N**	**N**	**N**
VOC (mg/kg)					
1,1,1-Trichloroethane	0.80	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
1,1,2,2-Tetrachloroethane	0.60	U (0.00622)	UJ (0.0033)	UJ (0.0040)	UJ (0.0036)
1,1,2-Trichloroethane	not listed	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
1,1-Dichloroethane	0.20	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
1,1-Dichloroethene	0.40	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
1,2-Dichloroethane	0.10	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
1,2-Dichloropropane	not listed	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
2-Butanone	0.30	U (0.0124)	U (0.013)	U (0.016)	U (0.015)
2-Hexanone	not listed	U (0.00622)	U (0.0066)	U (0.0081)	U (0.0073)
4-Methyl-2-Pentanone	1.0	U (0.00622)	U (0.0066)	U (0.0081)	U (0.0073)
Acetone	0.20	**0.0124**	U (0.039)	U (0.016)	U (0.039)
Acrylonitrile	not listed	U (0.0249)	U (0.026)	U (0.032)	U (0.026)
Benzene	0.060	U (0.00622)	**0.00093 J**	U (0.0040)	**0.00093 J**
Bromodichloromethane	not listed	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
Bromoform	not listed	U (0.00622)	U (0.0033)	UJ (0.0040)	U (0.0036)
Bromomethane	not listed	U (0.00622)	U (0.0066)	U (0.0081)	U (0.0073)
Carbon Disulfide	2.7	U (0.00622)	**0.0008 J**	U (0.0040)	U (0.0036)
Carbon tetrachloride	0.60	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
Chlorobenzene	1.7	U (0.00622)	U (0.0033)	UJ (0.0040)	UJ (0.0036)
Chloroethane	1.9	U (0.00622)	U (0.0066)	U (0.0081)	U (0.0073)
Chloroform	0.3	U (0.00622)	U (0.0033)	**0.029**	**0.088**
Chloromethane	not listed	U (0.00622)	U (0.0033)	U (0.0081)	U (0.0073)
cis-1,2-Dichloroethylene	not listed	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
cis-1,3-Dichloropropene	not listed	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
Dibromochloromethane	not listed	U (0.00622)	U (0.0066)	U (0.0040)	U (0.0036)
Ephichlorohydrin	not listed	NF	U (0.066)	U (0.081)	U (0.073)
Ethylbenzene	5.5	U (0.00622)	U (0.0033)	U (0.0040)	UJ (0.0036)
Methylene chloride	0.10	U (0.00622)	U (0.0066)	UJ (0.081)	U (0.0073)
Styrene	not listed	U (0.00622)	U (0.0033)	UJ (0.0040)	UJ (0.0036)
Tetrachloroethene	1.4	U (0.00622)	U (0.0033)	UJ (0.0022)	UJ (0.0029)
Toluene	1.5	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
Trans-1,2-Dichloroethene	0.30	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
trans-1,3-Dichloropropene	not listed	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
Trichloroethene	0.70	U (0.00622)	U (0.0033)	U (0.0040)	U (0.0036)
Vinyl chloride	0.20	U (0.00622)	U (0.0066)	U (0.0081)	U (0.0073)
Xylenes, Total	1.2	U (0.00622)	U (0.0033)	UJ (0.0040)	UJ (0.0036)

TABLE 11
Volatile Organic Compounds in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Notes:

Sample Type:
N = Field sample.
FD = Field duplicate.
TAGM 4046 RSCOs = Recommended Soil Cleanup Objectives (NYSDEC, 1/94; as amended).
not listed = No screening level is provided by NYSDEC.
U = The constituent was not detected above the associated reporting limit. (reporting limits shown in parenthesis)
J = The constituent concentration was estimated
E = The constituent conentration was above the calibration range
NF = The constituent was not found during a Library Search
Bold indicates that the constituent was detected above reporting limits
Shading indicates that the constituent was detected above TAGM 4046 screening levels.

TABLE 12
Semi-Volatile Organic Compounds in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location	NYSDEC	Bldg 4 Pit AOC		MW-10 Area					MW-11S Area	
		B01_41904	B02_41904	SB-10A		SB-10B			B02_42004	
Sample Depth	TAGM	(9.5 - 10.5')	(7.5 - 8.5')	(4 - 6')	(10 - 12')	(2 - 4')	(2 - 4')	(10 - 12')	(6 - 8')	(7 - 9')
Sample Date	4046	04/19/04	04/19/04	04/20/04	04/20/04	04/21/04	04/21/04	04/21/04	04/20/04	04/20/04
Sample Type	RSCOs	N	N	N	N	N	FD	N	N	N
SVOC (mg/kg)										
1,2,4-Trichlorobenzene	3.4	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
1,2-Dichlorobenzene	7.9	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
1,3-Dichlorobenzene	1.6	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
1,4-Dichlorobenzene	8.5	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
2,4,5-Trichlorophenol	0.10	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
2,4,6-Trichlorophenol	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
2,4-Dichlorophenol	0.40	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
2,4-Dimethylphenol	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
2,4-Dinitrophenol	0.20 or MDL	U (1.09)	U (12.3)	U (1.05)	U (1.06)	U (0.997)	U (0.987)	U (1.02)	U (1.04)	U (0.914)
2,4-Dinitrotoluene	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
2,6-Dinitrotoluene	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
2-Chloronaphthalene	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
2-Chlorophenol	0.80	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
2-Methylnaphthalene	36.4	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
2-Methylphenol	0.10 or MDL	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
2-Nitroaniline	0.43 or MDL	U (1.09)	U (12.3)	U (1.05)	U (1.06)	U (0.997)	U (0.987)	U (1.02)	U (1.04)	U (0.914)
2-Nitrophenol	0.33 or MDL	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
3,3'-Dichlorobenzidine	not listed	U (0.436)	U (4.90)	U (0.422)	U (0.425)	U (0.399)	U (0.395)	U (0.406)	U (0.416)	U (0.365)
3-,4-Methylphenol	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
3-Nitroaniline	0.50 or MDL	U (1.09)	U (12.3)	U (1.05)	U (1.06)	U (0.997)	U (0.987)	U (1.02)	U (1.04)	U (0.914)
4,6-Dinitro-2-methylphenol	not listed	U (1.09)	U (12.3)	U (1.05)	U (1.06)	U (0.997)	U (0.987)	U (1.02)	U (1.04)	U (0.914)
4-Bromophenyl phenyl ether	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
4-Chloro-3-methylphenol	0.24 or MDL	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
4-Chloroaniline	0.22 or MDL	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
4-Chlorophenyl phenyl ether	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
4-Nitroaniline	not listed	U (1.09)	U (12.3)	U (1.05)	U (1.06)	U (0.997)	U (0.987)	U (1.02)	U (1.04)	U (0.914)
4-Nitrophenol	0.10 or MDL	U (1.09)	U (12.3)	U (1.05)	U (1.06)	U (0.997)	U (0.987)	U (1.02)	U (1.04)	U (0.914)
Acenaphthene	50	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Acenaphthylene	41	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Anthracene	50	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Benzo (a) anthracene	0.224 or MDL	U (0.218)	U (2.45)	U (0.211)	U (0.213)	**0.384**	**0.231**	U (0.203)	U (0.208)	U (0.183)
Benzo (a) pyrene	0.061 or MDL	U (0.218)	U (2.45)	U (0.211)	U (0.213)	**0.317**	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Benzo (b) fluoranthene	1.1	U (0.218)	U (2.45)	U (0.211)	U (0.213)	**0.416**	**0.261**	U (0.203)	U (0.208)	U (0.183)
Benzo (g,h,i) perylene	50	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Benzo (k) fluoranthene	1.1	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Bis (2-chloroethoxy) methane	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Bis (2-chloroethyl) ether	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)

TABLE 12
Semi-Volatile Organic Compounds in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location	NYSDEC	Bldg 4 Pit AOC		MW-10 Area					MW-11S Area	
		B01_41904	B02_41904	SB-10A		SB-10B			B02_42004	
Sample Depth	TAGM	(9.5 - 10.5')	(7.5 - 8.5')	(4 - 6')	(10 - 12')	(2 - 4')	(2 - 4')	(10 - 12')	(6 - 8')	(7 - 9')
Sample Date	4046	04/19/04	04/19/04	04/20/04	04/20/04	04/21/04	04/21/04	04/21/04	04/20/04	04/20/04
Sample Type	RSCOs	N	N	N	N	N	FD	N	N	N
SVOC (mg/kg)										
Bis (2-chloroisopropyl) ether	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Bis (2-ethylhexyl) phthalate	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Butyl benzylphthalate	50	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Carbazole	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Chrysene	0.40	U (0.218)	U (2.45)	U (0.211)	U (0.213)	**0.416**	**0.24**	U (0.203)	U (0.208)	U (0.183)
Dibenzo (a,h) anthracene	0.014 or MDL	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Dibenzofuran	6.2	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Diethyl phthalate	7.1	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Dimethyl phthalate	2	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Di-n-butylphthalate	8.1	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Di-n-octylphthalate	50	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Fluoranthene	50	U (0.218)	U (2.45)	U (0.211)	U (0.213)	**0.93**	**0.473**	U (0.203)	U (0.208)	U (0.183)
Fluorene	50	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Hexachlorobenzene	0.41	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Hexachlorobutadiene	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Hexachlorocyclopentadiene	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Hexachloroethane	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Indeno (1,2,3-cd) pyrene	3.2	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Isophorone	4.4	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Naphthalene	13	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Nitrobenzene	0.20 or MDL	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
n-Nitrosodi-n-propylamine	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
n-Nitrosodiphenylamine	not listed	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Pentachlorophenol	1.0 or MDL	U (1.09)	U (12.3)	U (1.05)	U (1.06)	U (0.997)	U (0.987)	U (1.02)	U (1.04)	U (0.914)
Phenanthrene	50	U (0.218)	U (2.45)	U (0.211)	U (0.213)	**0.57**	**0.298**	U (0.203)	U (0.208)	U (0.183)
Phenol	0.030 or MDL	U (0.218)	U (2.45)	U (0.211)	U (0.213)	U (0.199)	U (0.197)	U (0.203)	U (0.208)	U (0.183)
Pyrene	50	U (0.218)	U (2.45)	U (0.211)	U (0.213)	**0.747**	**0.373**	U (0.203)	U (0.208)	U (0.183)

TABLE 12
Semi-Volatile Organic Compounds in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

		SWMU 25B	Gorham Street AOC								SWMU 8	
Location	NYSDEC	SB-08	SB-01	SB-01A			SB-01B			SB-02	SB-03	SB-04
Sample Depth	TAGM	(6 - 8')	(2 - 4')	(0 - 2')	(2 - 4')	(4 - 6')	(0 - 2')	(2 - 4')	(6 - 8')	(6 - 8')	(8 - 10')	(4 - 6')
Sample Date	4046	12/19/01	12/18/01	04/19/04	04/19/04	04/19/04	04/20/04	04/20/04	04/20/04	12/18/01	12/18/01	12/18/01
Sample Type	RSCOs	N	N	N	N	N	N	N	N	N	N	N
SVOC (mg/kg)												
1,2,4-Trichlorobenzene	3.4	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
1,2-Dichlorobenzene	7.9	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
1,3-Dichlorobenzene	1.6	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
1,4-Dichlorobenzene	8.5	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
2,4,5-Trichlorophenol	0.10	U (2.1)	U (2.1)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (2.2)	U (2.7)	U (2.4)
2,4,6-Trichlorophenol	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
2,4-Dichlorophenol	0.40	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
2,4-Dimethylphenol	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
2,4-Dinitrophenol	0.20 or MDL	U (2.1)	U (2.1)	U (1.04)	U (1.07)	U (20.9)	U (1.05)	U (1.03)	U (1.02)	U (2.2)	U (2.7)	U (2.4)
2,4-Dinitrotoluene	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
2,6-Dinitrotoluene	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
2-Chloronaphthalene	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
2-Chlorophenol	0.80	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
2-Methylnaphthalene	36.4	U (0.41)	**0.3 J**	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	**1.6**	**0.25 J**	U (0.48)
2-Methylphenol	0.10 or MDL	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
2-Nitroaniline	0.43 or MDL	U (2.1)	U (2.1)	U (1.04)	U (1.07)	U (20.9)	U (1.05)	U (1.03)	U (1.02)	U (2.2)	U (2.7)	U (2.4)
2-Nitrophenol	0.33 or MDL	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
3,3'-Dichlorobenzidine	not listed	U (0.83)	U (0.85)	U (0.418)	U (0.427)	U (8.37)	U (0.419)	U (0.412)	U (0.406)	U (0.88)	U (1.1)	U (0.97)
3-,4-Methylphenol	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	**0.058 J**	U (0.54)	U (0.48)
3-Nitroaniline	0.50 or MDL	U (2.1)	U (2.1)	U (1.04)	U (1.07)	U (20.9)	U (1.05)	U (1.03)	U (1.02)	U (2.2)	U (2.7)	U (2.4)
4,6-Dinitro-2-methylphenol	not listed	U (2.1)	U (2.1)	U (1.04)	U (1.07)	U (20.9)	U (1.05)	U (1.03)	U (1.02)	U (2.2)	U (2.7)	U (2.4)
4-Bromophenyl phenyl ether	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
4-Chloro-3-methylphenol	0.24 or MDL	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
4-Chloroaniline	0.22 or MDL	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
4-Chlorophenyl phenyl ether	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
4-Nitroaniline	not listed	U (2.1)	U (2.1)	U (1.04)	U (1.07)	U (20.9)	U (1.05)	U (1.03)	U (1.02)	U (2.2)	U (2.7)	U (2.4)
4-Nitrophenol	0.10 or MDL	U (2.1)	U (2.1)	U (1.04)	U (1.07)	U (20.9)	U (1.05)	U (1.03)	U (1.02)	U (2.2)	U (2.7)	U (2.4)
Acenaphthene	50	U (0.41)	**1.7**	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	**1.6**	**0.17 J**	U (0.48)
Acenaphthylene	41	U (0.41)	**0.045 J**	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	**0.28 J**	**0.21 J**	U (0.48)
Anthracene	50	**0.42**	**2.8**	U (0.209)	U (0.214)	**5.96**	U (0.209)	U (0.206)	U (0.203)	**5.0**	**0.51 J**	U (0.48)
Benzo (a) anthracene	0.224 or MDL	**1.3**	**5.8**	**0.645**	**0.329**	**15.5**	**0.441**	U (0.206)	U (0.203)	**16**	**1.4**	U (0.48)
Benzo (a) pyrene	0.061 or MDL	**1.2**	**5.3**	**0.495**	**0.261**	**11.4**	**0.345**	U (0.206)	U (0.203)	**14**	**1.7**	U (0.48)
Benzo (b) fluoranthene	1.1	**1.7**	**6.7**	**0.653**	**0.368**	**14.1**	**0.402**	U (0.206)	U (0.203)	**19**	**3.6**	U (0.48)
Benzo (g,h,i) perylene	50	**0.57**	**1.8**	**0.312**	U (0.214)	**6.07**	U (0.209)	U (0.206)	U (0.203)	**3.6**	**0.73**	U (0.48)
Benzo (k) fluoranthene	1.1	**0.53**	**1.8**	**0.259**	U (0.214)	**5.4**	U (0.209)	U (0.206)	U (0.203)	**4.0**	**0.82**	U (0.48)
Bis (2-chloroethoxy) methane	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
Bis (2-chloroethyl) ether	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)

TABLE 12
Semi-Volatile Organic Compounds in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location	NYSDEC	SWMU 25B	Gorham Street AOC								SWMU 8	
		SB-08	SB-01	SB-01A			SB-01B			SB-02	SB-03	SB-04
Sample Depth	TAGM	(6 - 8')	(2 - 4')	(0 - 2')	(2 - 4')	(4 - 6')	(0 - 2')	(2 - 4')	(6 - 8')	(6 - 8')	(8 - 10')	(4 - 6')
Sample Date	4046	12/19/01	12/18/01	04/19/04	04/19/04	04/19/04	04/20/04	04/20/04	04/20/04	12/18/01	12/18/01	12/18/01
Sample Type	RSCOs	N	N	N	N	N	N	N	N	N	N	N
SVOC (mg/kg)												
Bis (2-chloroisopropyl) ether	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
Bis (2-ethylhexyl) phthalate	not listed	**0.44**	**0.15 J**	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	**1.4**	**3.0**	**0.76**
Butyl benzylphthalate	50	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
Carbazole	not listed	**0.22 J**	**1.4**	U (0.209)	U (0.214)	**4.26**	U (0.209)	U (0.206)	U (0.203)	**2.9**	**0.34 J**	U (0.48)
Chrysene	0.40	**1.3**	**5.4**	**0.617**	**0.332**	**13.3**	**0.44**	U (0.206)	U (0.203)	**15**	**2.3**	U (0.48)
Dibenzo (a,h) anthracene	not listed	**0.12 J**	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	**0.079 J**	**0.2 J**	**0.084 J**
Dibenzofuran	6.2	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
Diethyl phthalate	7.1	**0.15 J**	**0.43**	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	**1**	U (0.54)	U (0.48)
Dimethyl phthalate	2	U (0.41)	**0.72**	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	**1.2**	**0.24 J**	U (0.48)
Di-n-butylphthalate	8.1	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
Di-n-octylphthalate	50	100	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	**0.091 J**	U (0.48)
Fluoranthene	50	**2.9**	**15**	**1.31**	**0.621**	**35.3**	**0.969**	**0.376**	U (0.203)	**34**	**4.7**	U (0.48)
Fluorene	50	**0.14 J**	**1.2**	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	**1.9**	**0.18 J**	U (0.48)
Hexachlorobenzene	0.41	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
Hexachlorobutadiene	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
Hexachlorocyclopentadiene	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
Hexachloroethane	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
Indeno (1,2,3-cd) pyrene	3.2	**0.69**	**2.2**	**0.254**	U (0.214)	**5.14**	U (0.209)	U (0.206)	U (0.203)	**4.6**	**0.86**	U (0.48)
Isophorone	4.4	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
Naphthalene	13	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
Nitrobenzene	0.20 or MDL	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
n-Nitrosodi-n-propylamine	not listed	U (0.41)	**0.33 J**	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	**2.2**	**0.73**	U (0.48)
n-Nitrosodiphenylamine	not listed	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	U (0.44)	U (0.54)	U (0.48)
Pentachlorophenol	1.0 or MDL	U (2.1)	U (2.1)	U (1.04)	U (1.07)	U (20.9)	U (1.05)	U (1.03)	U (1.02)	U (2.2)	U (2.7)	**0.073 J**
Phenanthrene	50	**2.2**	**15**	**0.681**	**0.409**	**30.3**	**0.757**	**0.265**	U (0.203)	**30**	**3.3**	U (0.48)
Phenol	0.030 or MDL	U (0.41)	U (0.42)	U (0.209)	U (0.214)	U (4.18)	U (0.209)	U (0.206)	U (0.203)	**0.047 J**	U (0.54)	U (0.48)
Pyrene	50	**2.4**	**13**	**1.07**	**0.507**	**26.5**	**0.739**	**0.325**	U (0.203)	**30**	**4.0**	U (0.48)

Notes:

Sample Type:
N = Field sample.
FD = Field duplicate.
TAGM 4046 RSCOs = Recommended Soil Cleanup Objectives (NYSDEC, 1/94; as amended).
not listed = No screening level is provided by NYSDEC.
MDL = Method detection limit
U = The constituent was not detected above the associated reporting limit.
J = The constituent concentration was estimated
Bold indicates that the constituent was detected.
Shading indicates that the constituent was detected above TAGM 4046 screening levels.

TABLE 13
PCBs in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location	NYSDEC TAGM		Bldg 4 Pit AOC		MW-10 Area					SWMU 25B	MW-11S Area	
			B01_41904	B02_41904	SB-10A		SB-10B			SB-08	B02_42004	
Sample Depth	4046		(9.5 - 10.5')	(7.5 - 8.5')	(4 - 6')	(10 - 12')	(2 - 4')	(2 - 4')	(10 - 12')	(6 - 8')	(6 - 8')	(7 - 9')
Sample Date	RSCOs		04/19/04	04/19/04	04/20/04	04/20/04	04/21/04	04/21/04	04/21/04	12/19/01	04/20/04	04/20/04
Sample Type	Surface	Subsurface	N	N	N	N	N	FD	N	N	N	N
PCB (mg/kg)												
Aroclor-1016	1.0	10	U (0.216)	U (0.242)	U (0.211)	U (0.215)	U (0.199)	U (0.197)	U (0.203)	U (0.021)	U (0.209)	U (0.179)
Aroclor-1221	1.0	10	U (0.216)	U (0.242)	U (0.211)	U (0.215)	U (0.199)	U (0.197)	U (0.203)	U (0.021)	U (0.209)	U (0.179)
Aroclor-1232	1.0	10	U (0.216)	U (0.242)	U (0.211)	U (0.215)	U (0.199)	U (0.197)	U (0.203)	U (0.021)	U (0.209)	U (0.179)
Aroclor-1242	1.0	10	U (0.216)	U (0.242)	U (0.211)	U (0.215)	U (0.199)	U (0.197)	U (0.203)	U (0.021)	U (0.209)	U (0.179)
Aroclor-1248	1.0	10	U (0.216)	U (0.242)	U (0.211)	U (0.215)	U (0.199)	U (0.197)	U (0.203)	U (0.021)	U (0.209)	U (0.179)
Aroclor-1254	1.0	10	U (0.216)	U (0.242)	**0.307**	U (0.215)	**0.324**	U (0.197)	U (0.203)	U (0.021)	U (0.209)	U (0.179)
Aroclor-1260	1.0	10	U (0.216)	U (0.242)	U (0.211)	U (0.215)	U (0.199)	U (0.197)	U (0.203)	U (0.021)	U (0.209)	U (0.179)
Total PCBs	1.0	10	ND	ND	**0.307**	ND	**0.324**	ND	ND	ND	ND	ND

TABLE 13
PCBs in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location	NYSDEC TAGM 4046 RSCOs		Gorham Street AOC							SWMU 8	
			SB-01	SB-01A			SB-01B			SB-02	SB-03	SB-04
Sample Depth			(2 - 4')	(0 - 2')	(2 - 4')	(4 - 6')	(0 - 2')	(2 - 4')	(6 - 8')	(6 - 8')	(8 - 10')	(4 - 6')
Sample Date			12/18/01	04/19/04	04/19/04	04/19/04	04/20/04	04/20/04	04/20/04	12/18/01	12/18/01	12/18/01
Sample Type	Surface	Subsurface	N	N	N	N	N	N	N	N	N	N
PCB (mg/kg)												
Aroclor-1016	1.0	10	U (0.021)	U (0.425)	U (0.428)	U (0.021)	U (0.211)	U (0.208)	U (0.203)	U (1.1)	U (0.054)	U (0.024)
Aroclor-1221	1.0	10	U (0.021)	U (0.425)	U (0.428)	U (0.021)	U (0.211)	U (0.208)	U (0.203)	U (1.1)	U (0.054)	U (0.024)
Aroclor-1232	1.0	10	U (0.021)	U (0.425)	U (0.428)	U (0.021)	U (0.211)	U (0.208)	U (0.203)	U (1.1)	U (0.054)	U (0.024)
Aroclor-1242	1.0	10	U (0.021)	U (0.425)	U (0.428)	U (0.021)	U (0.211)	U (0.208)	U (0.203)	U (1.1)	U (0.054)	U (0.024)
Aroclor-1248	1.0	10	U (0.021)	U (0.425)	U (0.428)	U (0.021)	U (0.211)	U (0.208)	U (0.203)	U (1.1)	U (0.054)	U (0.024)
Aroclor-1254	1.0	10	**0.04**	**3.04**	**0.295**	U (0.021)	**1.07**	**0.18**	U (0.203)	U (1.1)	**0.30**	**0.023 J**
Aroclor-1260	1.0	10	U (0.021)	U (0.425)	U (0.428)	U (0.021)	U (0.211)	U (0.208)	U (0.203)	**7.0**	U (0.054)	U (0.024)
Total PCBs	1.0	10	**0.04**	**3.04**	**0.295**	ND	**1.07**	**0.18**	ND	**7.0**	**0.30**	**0.023**

Notes:

Sample Type:
N = Field sample.
FD = Field duplicate.
TAGM 4046 RSCO = Recommended Soil Cleanup Objectives (NYSDEC, 1994; as amended).
not listed = No screening level is provided by NYSDEC.
ND = Not detected
U = The constituent was not detected above the associated reporting limit. (reporting limit shown in parenthesis)
J = The constituent concentration was estimated
Bold indicates that the constituent was detected above reporting limit.
Shading indicates that the constituent was detected above TAGM 4046 screening levels.

TABLE 14
Inorganics in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC	Eastern		Building 4 Pit AOC		MW-10 Area					SWMU 25B				
				B01_41904	B02_41904	SB-10A		SB-10B			SB-08	SB-08A		SB-08B	
Sample Depth	TAGM	US	Facility	(9.5 - 10.5')	(7.5 - 8.5')	(4 - 6')	(10 - 12')	(2 - 4')	(2 - 4')	(10 - 12')	(6 - 8')	(2 - 4')	(4 - 6')	(2 - 4')	(5 - 6')
Sample Date	4046	Background	Background	04/19/04	04/19/04	04/20/04	04/20/04	04/21/04	04/21/04	04/21/04	12/19/01	04/20/04	04/20/04	04/20/04	04/20/04
Sample Type	RSCOs	Levels	Levels	N	N	N	N	N	FD	N	N	N	N	N	N
Inorganics (mg/kg)															
Aluminum	not listed	33,000	30,100	**19,000**	**1,080**	**9,640**	**16,100**	**6,810**	**8,600**	**10,900**	**4,700**	**4,760**	**5,130**	**4,000**	**15,600**
Antimony	SB	not listed	ND	U (7.73)	U (8.52)	U (7.41)	U (7.85)	U (6.54)	U (6.24)	U (7.28)	**30**	U (5.82)	U (6.05)	U (6.49)	U (9.6)
Arsenic	7.5	5.0	5.5	**2.04**	**3.79**	**27.6**	**1.96**	U (0.555)	**1.55**	**2.88**	**56**	**1.58**	**2.33**	**1.77**	**7.41**
Barium	300	290	214	**143**	**30.3**	**69.4**	**95.9**	**24.4**	**32**	**66.4**	**210**	**15.5**	**34.3**	**11.3**	**130**
Beryllium	0.16	0.60	1.4	**0.889**	U (0.71)	U (0.617)	**0.718**	U (0.545)	U (0.52)	U (0.607)	**0.30 J**	U (0.485)	U (0.504)	U (0.541)	**0.825**
Cadmium	1.0	0.20	ND	U (0.645)	**5.63**	U (0.617)	U (0.654)	U (0.545)	U (0.52)	U (0.607)	**5.3**	U (0.485)	U (0.504)	U (0.541)	**2.41**
Calcium	not listed	3,400	70,700	**49,400**	**27,000**	**74,300**	**33,500**	**1,690**	**1,790**	**61,300**	**31,000**	**63,300**	**94,400**	**63,200**	**12,300**
Chromium	10	33	37	**28.2**	**15.5**	**13.5**	**20.1**	**8.06**	**9.5**	**13.9**	**65 J**	**5.11**	**9.24**	**4.92**	**28.5**
Cobalt	30	5.9	17	**10.6**	**9.9**	U (6.17)	**9.78**	U (5.45)	U (5.2)	**7.05**	**8.0 J**	U (4.85)	U (5.04)	U (5.41)	**12**
Copper	25	13	27	**21.6**	**43.8**	**15.7**	**18.3**	**2.81**	**3.44**	**14.1**	**1,100**	**9.04**	**16.2**	**10.4**	**322**
Iron	2,000	14,000	37,500	**27,700**	**8,190**	**11,300**	**22,900**	**10,900**	**12,000**	**16,300**	**220,000**	**8,610**	**8,440**	**7,970**	**20,600**
Lead	not listed	14	190	**11.3**	**59.3**	**171**	**7.9**	**2.97**	**5.19**	**6.4**	**860 J**	**3.98**	**7.05**	**4.61**	**347**
Magnesium	SB	2,300	16,200	**15,300**	**1,710**	**4,270**	**13,900**	**1,570**	**1,830**	**19,700**	**6,300**	**25,600**	**25,000**	**21,100**	**7,170**
Manganese	SB	285	1,140	**515**	**51.6**	**222**	**406**	**179**	**228**	**386**	**810**	**347**	**338**	**291**	**169**
Mercury	0.10	0.81	ND	U (0.335)	**7.04**	U (0.321)	U (0.327)	U (0.305)	U (0.302)	U (0.312)	**28.8**	U (0.264)	U (0.262)	U (0.271)	**3.78**
Nickel	13	12	36	**24.1**	**11.3**	**11.7**	**20.3**	**6.65**	**7.93**	**14.1**	**52**	**5.51**	**8.72**	**6.45**	**31.3**
Potassium	not listed	12,000	5,160	**5,130**	U (710)	**1,670**	**4,000**	U (545)	**559**	**2,420**	**600 J**	**1,480**	**1,860**	**926**	**2,990**
Selenium	2.0	0.30	ND	U (0.67)	**1.39**	**0.916**	U (0.654)	U (0.555)	U (0.628)	U (0.625)	**12 J**	U (0.539)	U (0.558)	U (0.541)	**1.37**
Silver	not listed	not listed	ND	U (1.29)	U (1.42)	U (1.23)	U (1.31)	U (1.09)	U (1.04)	U (1.21)	**0.50 J**	U (0.969)	U (1.01)	U (1.08)	U (1.6)
Sodium	SB	2,500	449	**4,520**	**4,050**	**155**	**922**	U (109)	U (104)	**306**	**200**	**156**	**182**	**255**	**1,290**
Thallium	SB	not listed	ND	U (1.34)	U (1.49)	U (1.28)	U (1.31)	U (1.11)	U (1.26)	U (1.25)	**1.0**	U (1.08)	U (1.12)	U (1.08)	U (1.63)
Vanadium	150	43	52	**34.4**	**85.7**	**26.7**	**29.7**	**17.3**	**18.9**	**22**	**17**	**7.85**	**12.6**	**7.95**	**32.9**
Zinc	20	40	79	**2,990**	**194**	**127**	**55.6**	**20.7**	**25.4**	**39.1**	**480**	**57.5**	**45**	**30.5**	**857**
Cyanide	not listed	not listed	NA	NA	NA	NA	NA	NA	NA	NA	U (0.62)	NA	NA	NA	NA
Sulfide Reactivity	not listed	not listed	NA	NA	NA	NA	NA	NA	NA	**NA**	NA	NA	NA	NA	NA

TABLE 14
Inorganics in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC	Eastern		MW-11S Area		Gorham Street AOC										
				B02_42004		SB-01	SB-01A			SB-01B			SB-02	SB-02A		
Sample Depth	TAGM 4046	US Background	Facility Background	(6 - 8')	(7 - 9')	(2 - 4')	(0 - 2')	(2 - 4')	(4 - 6')	(0 - 2')	(2 - 4')	(6 - 8')	(6 - 8')	(0 - 2')	(2 - 4')	(6 - 8')
Sample Date	RSCOs	Levels	Levels	04/20/04	04/20/04	12/18/01	04/19/04	04/19/04	04/19/04	04/20/04	04/20/04	04/20/04	12/18/01	04/20/04	04/20/04	04/20/04
Sample Type				N	N	N	N	N	N	N	N	N	N	N	N	N
Inorganics (mg/kg)																
Aluminum	not listed	33,000	30,100	12,800	4,570	16,000	9,890	12,800	13,500	13,400	16,400	14,300	8,000	19,600	8,470	24,100
Antimony	SB	not listed	ND	U (7.18)	U (6.18)	0.50 J	U (7.78)	U (7.48)	U (7.66)	U (7.52)	U (7.59)	U (6.66)	4.0 J	U (7.51)	U (6.38)	U (7.73)
Arsenic	7.5	5.0	5.5	2.88	2.35	7.4	21.8	5.29	5.23	13.8	7.09	3.16	50	4.29	4.88	3.81
Barium	300	290	214	87.2	61.2	120	70.5	118	119	97.9	108	93.7	120	99.5	92.8	181
Beryllium	0.16	0.60	1.4	U (0.598)	U (0.515)	1.0 J	0.685	0.826	0.812	0.852	0.811	0.776	0.60 J	0.833	U (0.532)	1.1
Cadmium	1.0	0.20	ND	U (0.598)	U (0.515)	0.90	1.13	0.628	0.738	0.707	U (0.632)	0.594	6.2	U (0.626)	U (0.532)	U (0.645)
Calcium	not listed	3,400	70,700	103,000	71,500	47,000	88,300	23,400	17,900	26,700	24,300	21,000	12,000	3,170	41,300	66,200
Chromium	10	33	37	15.6	6.69	25 J	38.5	17.8	18.9	18.3	21.1	18.2	60 J	21.4	220	27.7
Cobalt	30	5.9	17	8.89	U (5.15)	12 J	7.29	9.67	9.08	9.24	10	9.4	15 J	12.1	6.84	13.2
Copper	25	13	27	18.5	11	32	63	33.2	31.8	32.5	23.9	22.4	92	15.5	19.2	26.2
Iron	2,000	14,000	37,500	18,700	8,470	29,000	18,100	23,300	18,000	21,500	20,200	19,200	250,000	25,400	25,300	30,500
Lead	not listed	14	190	8.65	3.65	27 J	252	68.3	75.1	56.1	69.5	67.7	160 J	14.3	42.4	9.23
Magnesium	SB	2,300	16,200	14,800	23,400	13,000	10,300	7,550	6,560	8,510	8,640	8,000	4,300	4,460	14,100	15,900
Manganese	SB	285	1,140	381	269	590	285	237	221	244	309	254	990	759	480	464
Mercury	0.10	0.81	ND	U(0.317)	U (0.278)	0.070	0.431	U (0.324)	U (0.322)	U (0.323)	U (0.322)	U (0.311)	0.020	U (0.313)	U (0.292)	U (0.322)
Nickel	13	12	36	18.7	8.24	28	25.7	20.2	21.2	20.2	21.3	19.6	52	18.1	12.5	28.5
Potassium	not listed	12,000	5,160	3,190	1,380	3,900 J	2,160	2,400	2,580	2,720	3,340	2,690	1,000 J	2,880	2,190	6,800
Selenium	2.0	0.30	ND	U (0.634)	U (0.556)	1.4 J	1.17	U (0.649)	0.718	U (0.645)	U (0.645)	U (0.622)	16 J	U (0.626)	U (0.585)	U (0.645)
Silver	not listed	not listed	ND	U (1.2)	U (1.03)	1.0	U (1.3)	U (1.25)	U (1.28)	U (1.25)	U (1.26)	U (1.11)	0.50 J	U (1.25)	U (1.06)	U (1.29)
Sodium	SB	2,500	449	508	983	400	1,070	530	436	168	215	301	200	133	1,100	974
Thallium	SB	not listed	ND	U (1.27)	U (1.11)	1.0 J	U (1.3)	U (1.3)	U (1.29)	U (1.29)	U (1.29)	U (1.24)	1.0	U (1.25)	U (1.17)	U (1.29)
Vanadium	150	43	52	23.2	10.8	37	50.7	30.7	34.6	32.9	33.4	29	67	32.7	16.4	41.5
Zinc	20	40	79	55.2	47.7	86	905	195	318	112	117	111	2,000	80.6	56.5	74.4
Cyanide	not listed	not listed	NA	NA	NA	U (0.64)	NA	NA	NA	NA	NA	NA	U (0.66)	NA	NA	NA
Sulfide Reactivity	not listed	not listed	NA	NA	NA	NA	U (130)	U (130)	U (129)	U (129)	U (129)	U (124)	NA	NA	NA	NA

TABLE 14
Inorganics in Soils
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC	Eastern		Gorham Street AOC			SWMU 8								
				SB-02B	SB-02B		SB-03	SB-03A				SB-03B			SB-04
Sample Depth	TAGM	US	Facility	(0 - 2')	(2 - 4')	(6 - 8')	(8 - 10')	(0 - 2')	(2 - 4')	(6 - 8')	(6 - 8')	(1 - 2')	(3 - 4')	(8 - 9')	(4 - 6')
Sample Date	4046	Background	Background	04/20/04	04/20/04	04/20/04	12/18/01	04/21/04	04/21/04	04/21/04	04/21/04	04/21/04	04/21/04	04/21/04	12/18/01
Sample Type	RSCOs	Levels	Levels	N	N	N	N	N	N	N	FD	N	N	N	N
Inorganics (mg/kg)															
Aluminum	not listed	33,000	30,100	**17,900**	**19,500**	**14,800**	**6,800**	**5,530**	**16,300**	**12,600**	**14,200**	**6,450**	**11,500**	**14,200**	**5,000**
Antimony	SB	not listed	ND	U (7.38)	U (7.67)	U (6.62)	**2.0 J**	U (6.08)	U (7.13)	U (5.76)	U (6.52)	U (6.21)	U (6.35)	U (5.2)	**9.0**
Arsenic	7.5	5.0	5.5	**34.4**	**6.92**	**2.07**	**21**	**4.48**	**3.63**	**2.82**	**3.11**	**10.3**	**6.3**	**5.51**	**5.3**
Barium	300	290	214	**118**	**115**	**90**	**1,400**	**35.8**	**126**	**94.8**	**101**	**71.3**	**102**	**127**	**40**
Beryllium	0.16	0.60	1.4	**0.88**	**0.865**	U (0.551)	**1.1 J**	U (0.506)	**0.721**	**0.489**	**0.57**	U (0.517)	**0.593**	**0.677**	**0.30 J**
Cadmium	1.0	0.20	ND	U (0.615)	U (0.639)	U (0.551)	**3.3**	U (0.506)	U (0.594)	U (0.48)	U (0.544)	**0.545**	**0.592**	**0.467**	**1.6**
Calcium	not listed	3,400	70,700	**26,200**	**31,700**	**2,770**	**8,900**	**120,000**	**54,500**	**55,800**	**66,100**	**184,000**	**42,300**	**59,700**	**33,000**
Chromium	10	33	37	**25.7**	**64.8**	**19.6**	**46 J**	**8.72**	**20.4**	**13.7**	**15.3**	**9.09**	**17**	**21.4**	**10 J**
Cobalt	30	5.9	17	**11.6**	**12.1**	**5.88**	**9.0 J**	**5.18**	**9.66**	**7.49**	**7.78**	**6.86**	**8.42**	**9.62**	**4.0 J**
Copper	25	13	27	**31.1**	**22**	**8.71**	**530**	**20.2**	**28**	**17.6**	**20**	**32**	**48.3**	**42.5**	**90**
Iron	2,000	14,000	37,500	**23,500**	**26,900**	**16,700**	**41,000**	**9,050**	**20,600**	**15,300**	**17,800**	**9,540**	**17,500**	**24,200**	**11,000**
Lead	not listed	14	190	**117**	**68.2**	**8.88**	**970 J**	**46.1**	**32.2**	**53**	**9.92**	**50.4**	**140**	**73.1**	**450 J**
Magnesium	SB	2,300	16,200	**12,000**	**11,800**	**3,420**	**2,600**	**29,100**	**17,400**	**14,200**	**15,200**	**11,100**	**14,400**	**17,700**	**7,400**
Manganese	SB	285	1,140	**403**	**400**	**95.7**	**260**	**236**	**420**	**457**	**336**	**208**	**298**	**469**	**530**
Mercury	0.10	0.81	ND	**0.409**	U (0.332)	U (0.303)	**29.3**	U (0.278)	U (0.297)	U (0.278)	U (0.283)	**0.314**	U (0.291)	U (1.46)	**1.4**
Nickel	13	12	36	**24.9**	**24.5**	**14.5**	**33**	**11.6**	**40**	**14.4**	**14.5**	**23.6**	**17.2**	**19.4**	**20**
Potassium	not listed	12,000	5,160	**3,880**	**4,400**	**2,240**	**700 J**	**2,160**	**5,200**	**3,870**	**4,500**	**2,950**	**3,260**	**4,020**	**600 J**
Selenium	2.0	0.30	ND	U (0.621)	U (0.664)	U (0.606)	**3.2 J**	U (0.593)	U (0.632)	U (0.546)	U (0.577)	**0.966**	U (0.633)	U (0.522)	**0.90 J**
Silver	not listed	not listed	ND	U (1.23)	U (1.28)	U (1.1)	**0.30 J**	U (1.01)	U (1.19)	U (0.96)	U (1.09)	U (1.03)	U (1.06)	U (0.866)	**1.0**
Sodium	SB	2,500	449	**141**	**176**	**543**	**200**	**156**	**325**	**230**	**252**	**201**	**237**	**271**	**200**
Thallium	SB	not listed	ND	U (1.24)	U (1.33)	U (1.21)	**2.0**	U (1.19)	U (1.26)	U (1.09)	U (1.15)	U (1.09)	U (1.27)	U (1.04)	**1.0**
Vanadium	150	43	52	**44.1**	**33.7**	**24.5**	**25**	**13.1**	**30.5**	**21.9**	**25.9**	**18.8**	**27**	**27.6**	**14**
Zinc	20	40	79	**147**	**73.5**	**314**	**1,100**	**239**	**80.4**	**161**	**72**	**67.7**	**218**	**108**	**570**
Cyanide	not listed	not listed	NA	NA	NA	NA	**0.83**	NA	NA	NA	NA	NA	NA	NA	U (0.73)
Sulfide Reactivity	not listed	not listed	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Sample Type:
N = Field sample.
FD = Field duplicate.
TAGM 4046 RSCOs = Recommended Soil Cleanup Objectives (NYSDEC, 1994; as amended).
not listed = No screening level is provided by NYSDEC.
NA = Not analyzed
SB = Site background.
U = The constituent was not detected above the associated reporting limit. (reporting limit shown in parenthesis)
J = The constituent concentration was estimated
Bold indicates that the analyte was detected above reporting limit.
Shading indicates that the analyte was detected above the screening criteria

TABLE 15
Volatile Organic Compounds in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC Class	Upgradient			Production Wells				Gorham Street AOC			SWMU 28	SWMU 25B
		MW-05I	MW-05S	MW-06	Dept 68 Well		Dept 69 Well		MW-07	MW-08	MW-09	MW-12	MW-13
Sample Date	GA	01/15/02	01/21/02	01/21/02	01/15/02	11/04/02	01/15/02	11/04/02	01/18/02	01/18/02	01/21/02	01/21/02	01/16/02
Sample Type	Values	N	N	N	N	N	N	N	N	N	N	N	N
VOC (µg/l)													
1,1,1-Trichloroethane	5.0[b]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
1,1,2,2-Tetrachloroethane	5.0[b]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
1,1,2-Trichloroethane	1.0	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
1,1-Dichloroethane	5.0[b]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
1,1-Dichloroethene	5.0[b]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
1,2-Dichloroethane	0.60	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
1,2-Dichloropropane	1.0	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
2-Butanone	50	UJ (10)	UJ (10)	UJ (10)	UJ (10)	U (10)	U (10)	U (10)	UJ (10)	UJ (10)	UJ (10)	UJ (10)	UJ (10)
2-Hexanone	50[a]	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)
4-Methyl-2-Pentanone	not listed	U (5.0)	U (5.0)	U (5.0)	**4.0 J**	U (5.0)	**2.6 J**	**1.9 J**	U (5.0)	U (5.0)	U (5.0)	**1.6 J**	U (5.0)
Acetone	50[a]	**7.9 J**	UJ (10)	UJ (10)	UJ (10)	U (10)	UJ (10)	U (10)	**5.8 J**	UJ (10)	**5.8 J**	**4.1 J**	UJ (10)
Acrylonitrile	5.0[b]	UJ (4.0)	UJ (4.0)	UJ (4.0)	UJ (4.0)	U (4.0)	UJ (4.0)	U (4.0)	UJ (4.0)	UJ (4.0)	UJ (4.0)	UJ (4.0)	UJ (4.0)
Benzene	1.0	**0.22 J**	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	**0.15 J**	U (0.50)	U (0.50)
Bromodichloromethane	5.0[b]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
Bromoform	50[a]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
Bromomethane	5.0[b]	U (1.0)	U (1.0)	U (1.0)	U (1.0)	UJ (1.0)	U (1.0)	UJ (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Carbon Disulfide	60	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	**0.26 J**	**0.34 J**	U (0.50)
Carbon tetrachloride	5.0	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
Chlorobenzene	5.0[b]	**0.41 J**	**0.12 J**	U (0.50)	**0.93**	U (0.50)	**0.30 J**	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
Chloroethane	5.0[b]	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Chloroform	7.0	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	**7.4**	U (0.50)	U (0.50)
Chloromethane	not listed	UJ (5.0)	UJ (5.0)	UJ (5.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	UJ (5.0)	U (1.0)	U (1.0)	U (1.0)	UJ (5.0)
cis-1,2-Dichloroethylene	5.0[b]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	**0.99**	U (0.50)	U (0.50)
cis-1,3-Dichloropropene	not listed	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
Dibromochloromethane	50[a]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
Epichlorohydrin	not listed	U (2.0)	U (2.0)	U (2.0)	UJ (5.0)	NA	UJ (5.0)	NA	U (2.0)	UJ (5.0)	UJ (5.0)	UJ (5.0)	U (2.0)
Ethylbenzene	5.0[b]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
Methylene chloride	5.0[b]	U (0.50)	U (0.50)	U (0.50)	U (2.0)	U (2.0)	U (2.0)	U (2.0)	U (0.50)	U (2.0)	U (2.0)	U (2.0)	U (2.0)
Styrene	5.0[b]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
Tetrachloroethene	5.0[b]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
Toluene	5.0[b]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	**0.38 J**	U (0.50)
trans-1,2-Dichloroethene	5.0	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
trans-1,3-Dichloropropene	not listed	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
Trichloroethene	5.0[b]	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)
Vinyl chloride	2.0	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	**0.46 J**	U (1.0)	U (1.0)
Xylenes, Total	5.0	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)

TABLE 15
Volatile Organic Compounds in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC Class	MW-11S Area					MW-10 Area						
		MW-11I		MW-11S			MW-10			GW-10A	GW-10B	GW-10C	GW-10D
Sample Date	GA	01/23/02	04/22/04	01/23/02	11/05/02	04/22/04	01/21/02	11/06/02	04/22/04	04/22/04	04/22/04	04/22/04	04/22/04
Sample Type	Values	N	N	N	N	N	N	N	N	N	N	N	N
VOC (µg/l)													
1,1,1-Trichloroethane	5.0[b]	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
1,1,2,2-Tetrachloroethane	5.0[b]	U (0.50)	U (0.5)	U (1.0)	U (1.0)	U (0.5)	U (2.5)	U (1.0)	U (0.5)	U (0.5)	U (0.5)	U (0.5)	U (0.5)
1,1,2-Trichloroethane	1.0	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
1,1-Dichloroethane	5.0[b]	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
1,1-Dichloroethene	5.0[b]	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
1,2-Dichloroethane	0.60	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
1,2-Dichloropropane	1.0	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
2-Butanone	50	UJ (10)	U (10)	UJ (20)	U (20)	U (10)	UJ (50)	U (20)	U (10)	**12.2**	U (10)	U (10)	U (10)
2-Hexanone	50[a]	U (5.0)	U (5.0)	U (10)	U (10)	U (5.0)	U (25)	U (10)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)
4-Methyl-2-Pentanone	not listed	U (5.0)	U (5.0)	**5.9 J**	**10**	**9.68**	**73**	**260**	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)
Acetone	50[a]	UJ (10)	U (10)	UJ (8.2)	U (10)	U (10)	**23 J**	U (10)	U (10)	**41.1**	**36**	U (10)	U (10)
Acrylonitrile	5.0[b]	UJ (4.0)	U (5.0)	UJ (8.0)	U (8.0)	U (5.0)	UJ (20)	U (8.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)
Benzene	1.0	U (0.50)	U (1.0)	U (1.0)	**0.24 J**	U (1.0)	U (2.5)	**0.53 J**	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Bromodichloromethane	5.0[b]	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Bromoform	50[a]	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Bromomethane	5.0[b]	U (1.0)	U (1.0)	U (2.0)	UJ (2.0)	U (1.0)	U (5.0)	U (2.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Carbon Disulfide	60	**0.24 J**	U (1.0)	**2.4**	**5.2**	**10.8**	**10**	**1.3**	U (1.0)	**1.15**	**1.24**	U (1.0)	U (1.0)
Carbon tetrachloride	5.0	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Chlorobenzene	5.0[b]	**0.62**	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Chloroethane	5.0[b]	U (1.0)	U (1.0)	U (2.0)	U (2.0)	U (1.0)	U (5.0)	U (2.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Chloroform	7.0	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Chloromethane	not listed	U (1.0)	U (1.0)	U (2.0)	U (2.0)	U (1.0)	U (5.0)	U (2.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
cis-1,2-Dichloroethylene	5.0[b]	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
cis-1,3-Dichloropropene	not listed	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Dibromochloromethane	50[a]	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Epichlorohydrin	not listed	UJ (5.0)	NA	UJ (10)	NA	NA	UJ (25)	NA	NA	NA	NA	NA	NA
Ethylbenzene	5.0[b]	U (0.50)	U (1.0)	**0.97 J**	**0.76 J**	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Methylene chloride	5.0[b]	U (2.0)	U (2.0)	U (4.0)	U (4.0)	U (2.0)	U (10)	U (4.0)	U (2.0)	U (2.0)	U (2.0)	U (2.0)	U (2.0)
Styrene	5.0[b]	U (0.50)	U (0.5)	U (1.0)	U (1.0)	U (0.5)	U (2.5)	U (1.0)	U (0.5)	U (0.5)	U (0.5)	U (0.5)	U (0.5)
Tetrachloroethene	5.0[b]	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Toluene	5.0[b]	U (0.50)	U (1.0)	**1.9**	**1.8**	**1.13**	**10**	**0.46 J**	U (1.0)	U (1.0)	U (1.0)	**57.6**	**6.23**
trans-1,2-Dichloroethene	5.0	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
trans-1,3-Dichloropropene	not listed	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Trichloroethene	5.0[b]	U (0.50)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (2.5)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Vinyl chloride	2.0	U (1.0)	U (1.0)	U (2.0)	U (2.0)	U (1.0)	U (5.0)	U (2.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Xylenes, Total	5.0	U (0.50)	U (2.0)	**2.1**	**1.7**	U (2.0)	U (2.5)	U (1.0)	U (2.0)	U (2.0)	U (2.0)	U (2.0)	**2.25**

TABLE 15
Volatile Organic Compounds in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC Class	Building 4 Pit											
		Bldg 4 PW	Bldg 4 Sump			MW-01				MW-02			
Sample Date	GA	04/22/04	01/24/02	11/04/02	04/22/04	01/22/02	11/06/02	11/06/02	04/23/04	01/22/02	01/22/02	11/06/02	04/23/04
Sample Type	Values	N	N	N	N	N	N	FD	N	N	FD	N	N
VOC (µg/l)													
1,1,1-Trichloroethane	5.0[b]	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
1,1,2,2-Tetrachloroethane	5.0[b]	U (0.5)	U (12)	U (12)	U (5.0)	U (0.50)	U (0.50)	U (0.50)	U (5.0)	U (25)	U (25)	U (120)	U (5.0)
1,1,2-Trichloroethane	1.0	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
1,1-Dichloroethane	5.0[b]	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
1,1-Dichloroethene	5.0[b]	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
1,2-Dichloroethane	0.60	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
1,2-Dichloropropane	1.0	U (1.0)	U (12)	U (12)	U (10)	**0.34 J**	**0.49 J**	**0.49 J**	U (10)	U (25)	U (25)	U (120)	U (10)
2-Butanone	50	U (10)	**220 J**	U (250)	U (100)	U (10)	U (10)	U (10)	U (100)	UJ (500)	UJ (500)	U (2,500)	U (100)
2-Hexanone	50[a]	U (5.0)	U (120)	U (120)	U (50)	U (5.0)	U (5.0)	U (5.0)	U (50)	U (250)	U (250)	U (1,000)	U (50)
4-Methyl-2-Pentanone	not listed	U (5.0)	**1,000**	**2,400**	**72,100**	U (5.0)	U (5.0)	U (5.0)	**4,770 E**	**11,000**	**11,000**	**13,000**	**9,420**
Acetone	50[a]	U (10)	**69 J**	U (250)	U (100)	**2.2** J	U (10)	U (10)	U (100)	**190 J**	**190 J**	U (2,500)	**216**
Acrylonitrile	5.0[b]	U (5.0)	UJ (100)	U (100)	U (50)	UJ (4.0)	U (4.0)	U (4.0)	U (50)	UJ (200)	UJ (200)	U (1,000)	U (50)
Benzene	1.0	U (1.0)	U (12)	U (12)	U (10)	**0.30 J**	**0.16 J**	**0.17 J**	U (10)	U (25)	U (25)	U (120)	U (10)
Bromodichloromethane	5.0[b]	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
Bromoform	50[a]	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
Bromomethane	5.0[b]	U (1.0)	U (25)	UJ (25)	U (10)	U (1.0)	UJ (1.0)	UJ (1.0)	U (10)	U (50)	U (50)	UJ (250)	U (10)
Carbon Disulfide	60	U (1.0)	**17**	**28**	U (10)	**0.46 J**	**0.25 J**	**0.16 J**	**35.9**	**160**	**160**	**200**	**216**
Carbon tetrachloride	5.0	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
Chlorobenzene	5.0[b]	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	**0.12 J**	**0.12** J	U (10)	U (25)	U (25)	U (120)	U (10)
Chloroethane	5.0[b]	U (1.0)	U (25)	U (25)	U (10)	U (1.0)	U (1.0)	U (1.0)	U (10)	U (50)	U (50)	U (250)	U (10)
Chloroform	7.0	U (1.0)	**29**	**83**	**120**	U (0.50)	U (0.50)	U (0.50)	**146**	**51**	**52**	**83 J**	**88.1**
Chloromethane	not listed	U (1.0)	U (25)	U (25)	U (10)	U (1.0)	U (1.0)	U (1.0)	U (10)	U (50)	U (50)	U (250)	U (10)
cis-1,2-Dichloroethylene	5.0[b]	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
cis-1,3-Dichloropropene	not listed	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
Dibromochloromethane	50[a]	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
Epichlorohydrin	not listed	NA	UJ (125)	NA	NA	UJ (5.0)	NA	NA	NA	UJ (250)	UJ (250)	NA	NA
Ethylbenzene	5.0[b]	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
Methylene chloride	5.0[b]	U (2.0)	U (12)	**12 J**	U (20)	U (2.0)	U (2.0)	U (2.0)	U (20)	U (25)	U (25)	U (120)	U (20)
Styrene	5.0[b]	U (0.5)	U (12)	U (12)	U (5.0)	U (0.50)	U (0.50)	U (0.50)	U (5.0)	U (25)	U (25)	U (120)	U (5.0)
Tetrachloroethene	5.0[b]	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
Toluene	5.0[b]	U (1.0)	**4.5 J**	**9.9 J**	U (10)	**0.13 J**	**0.14 J**	**0.14 J**	**19.3**	**21 J**	**21 J**	**29 J**	**19**
trans-1,2-Dichloroethene	5.0	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
trans-1,3-Dichloropropene	not listed	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
Trichloroethene	5.0[b]	U (1.0)	U (12)	U (12)	U (10)	U (0.50)	U (0.50)	U (0.50)	U (10)	U (25)	U (25)	U (120)	U (10)
Vinyl chloride	2.0	U (1.0)	U (25)	U (25)	U (10)	U (1.0)	U (1.0)	U (1.0)	U (10)	U (50)	U (50)	U (250)	U (10)
Xenes, Total	5.0	U (2.0)	U (12)	U (12)	U (20)	U (0.50)	U (0.50)	U (0.50)	U (20)	U (25)	**5.1 J**	U (120)	U (20)

TABLE 15
Volatile Organic Compounds in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC Class	Building 4 Pit			SWMU 1								MW-19
		MW-03			MW-14	MW-15	MW-16I	MW-16S		MW-17		MW-18	MW-19
Sample Date	GA	01/23/02	11/05/02	04/23/04	01/22/02	01/22/02	01/16/02	01/16/02	01/16/02	01/22/02	04/22/04	01/21/02	01/23/02
Sample Type	Values	N	N	N	N	N	N	N	FD	N	N	N	N
VOC (µg/l)													
1,1,1-Trichloroethane	5.0[b]	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
1,1,2,2-Tetrachloroethane	5.0[b]	U (50)	U (10)	U (0.5)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.5)	U (0.50)	U (0.50)
1,1,2-Trichloroethane	1.0	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
1,1-Dichloroethane	5.0[b]	U (50)	**2.5 J**	**2.12**	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
1,1-Dichloroethene	5.0[b]	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
1,2-Dichloroethane	0.60	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
1,2-Dichloropropane	1.0	U (50)	**2.5 J**	**1.77**	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
2-Butanone	50	UJ (1,000)	**22 J**	**28.8**	UJ (10)	UJ (10)	UJ (10)	UJ (10)	UJ (10)	UJ (10)	U (10)	UJ (10)	UJ (10)
2-Hexanone	50[a]	U (500)	U (100)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)
4-Methyl-2-Pentanone	not listed	**680**	**130**	**29.6**	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)
Acetone	50[a]	UJ (1,000)	U (200)	**24.9**	UJ (10)	**3.5 J**	UJ (10)	UJ (10)	UJ (10)	**75 J**	U (10)	**7.1 J**	UJ (10)
Acrylonitrile	5.0[b]	UJ (400)	U (80)	U (5.0)	UJ (4.0)	UJ (4.0)	UJ (4.0)	UJ (4.0)	UJ (4.0)	UJ (4.0)	U (5.0)	UJ (4.0)	UJ (4.0)
Benzene	1.0	U (50)	U (10)	**1.75**	U (0.50)	U (0.50)	**0.17 J**	**0.42 J**	**0.44 J**	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Bromodichloromethane	5.0[b]	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Bromoform	50[a]	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Bromomethane	5.0[b]	U (100)	UJ (20)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Carbon Disulfide	60	U (50)	**3.5 J**	**13.2**	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Carbon tetrachloride	5.0	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Chlorobenzene	5.0[b]	U (50)	**6.0 J**	**5.66**	U (0.50)	U (0.50)	U (0.50)	**0.83**	**0.9**	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Chloroethane	5.0[b]	U (100)	U (20)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Chloroform	7.0	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Chloromethane	not listed	U (100)	U (20)	U (1.0)	UJ (5.0)	UJ (5.0)	UJ (5.0)	UJ (5.0)	UJ (5.0)	UJ (5.0)	U (1.0)	UJ (5.0)	UJ (5.0)
cis-1,2-Dichloroethylene	5.0[b]	**12 J**	**11**	**9.31**	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	**1.7**
cis-1,3-Dichloropropene	not listed	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Dibromochloromethane	50[a]	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	**0.3 J**	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Epichlorohydrin	not listed	UJ (500)	NA	NA	U (2.0)	U (2.0)	U (2.0)	U (2.0)	U (2.0)	U (2.0)	NA	U (2.0)	U (2.0)
Ethylbenzene	5.0[b]	U (50)	U (10)	**1.0**	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Methylene chloride	5.0[b]	U (50)	U (40)	U (2.0)	U (2.0)	U (2.0)	U (2.0)	U (2.0)	U (2.0)	U (2.0)	U (2.0)	U (2.0)	U (2.0)
Styrene	5.0[b]	U (50)	U (10)	U (0.5)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.5)	U (0.50)	U (0.50)
Tetrachloroethene	5.0[b]	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Toluene	5.0[b]	**130**	**83**	**35.7**	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
trans-1,2-Dichloroethene	5.0	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	**1.4**
trans-1,3-Dichloropropene	not listed	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Trichloroethene	5.0[b]	U (50)	U (10)	U (1.0)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (0.50)	U (1.0)	U (0.50)	U (0.50)
Vinyl chloride	2.0	U (50)	U (20)	**2.46**	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)	U (1.0)
Xylenes, Total	5.0	U (50)	**5.2 J**	**5.05**	U (0.50)	U (0.50)	**1.8**	U (0.50)	U (0.50)	U (0.50)	U (2.0)	U (0.50)	U (0.50)

TABLE 15
Volatile Organic Compounds in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Notes:

Sample Type:
N = Field sample.
FD = Field duplicate.
Class GA Values = Class GA groundwater standards or guidelines (NYSDEC, June 1998; as amended)
not listed = No screening level is provided by NYSDEC.
NA = Not analyzed
U = The constituent was not detected above the associated reporting limit. (reporting limit shown in parenthesis)
J = The constituent concentration was estimated
Bold indicates that the constituent was detected above reporting limits.
Shading indicates that the constituent was detected above Class GA standards or guidelines.
a = Guidance value.
b= Principal organic contaminant standard, a general standard that applies individually to substances that do not have chemical specific standards or guidelines.

TABLE 16
Semi-Volatile Organic Compounds in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC Class	Production Wells		Building 4 Pit								
		Dept 68 Well	Dept 69 Well	Bldg 4 PW	Bldg 4 Sump		MW-01	MW-01	MW-02			MW-03	
Sample Date	GA	01/15/02	01/15/02	04/22/04	01/24/02	04/22/04	01/22/02	04/23/04	01/22/02	01/22/02	04/23/04	01/23/02	04/23/04
Sample Type	Values	N	N	N	N	N	N	N	N	FD	N	N	N
SVOC (g/l)													
1,2,4-Trichlorobenzene	5.0[b]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
1,2-Dichlorobenzene	3.0	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
1,3-Dichlorobenzene	3.0	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
1,4-Dichlorobenzene	3.0	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
2,2'-oxybis(1-Chloropropane)	not listed	U (10)	U (10)	NA	U (10)	NA	U (10)	NA	UJ (500)	UJ (500)	NA	U (10)	NA
2,4,5-Trichlorophenol	not listed	U (51)	UJ (52)	U (5.29)	U (50)	U (17.2)	U (51)	U (5.0)	UJ (52)	UJ (52)	U (5.26)	U (51)	U (5.35)
2,4,6-Trichlorophenol	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
2,4-Dichlorophenol	5.0[b]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
2,4-Dimethylphenol	1.0	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
2,4-Dinitrophenol	1.0	U (51)	UJ (52)	U (26.5)	U (50)	U (86.2)	U (51)	U (25)	UJ (52)	UJ (52)	U (26.3)	U (51)	U (26.7)
2,4-Dinitrotoluene	5.0[b]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
2,6-Dinitrotoluene	5.0[b]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
2-Chloronaphthalene	10[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
2-Chlorophenol	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
2-Methylnaphthalene	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
2-Methylphenol	not listed	U (10)	UJ (500)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (500)	UJ (500)	U (5.26)	U (10)	U (5.35)
2-Nitroaniline	5.0[b]	U (51)	UJ (52)	U (26.5)	U (50)	U (86.2)	U (51)	U (25)	UJ (52)	UJ (52)	U (26.3)	U (51)	U (26.7)
2-Nitrophenol	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
3,3'-Dichlorobenzidine	not listed	U (20)	U (21)	U (10.6)	U (20)	U (34.5)	U (20)	U (10)	UJ (21)	UJ (21)	U (10.5)	U (20)	U (10.7)
3-,4-Methylphenol	not listed	NA	NA	U (5.29)	NA	U (17.2)	NA	**8.98**	NA	NA	**7.23**	NA	U (5.35)
3-Nitroaniline	5.0[b]	U (51)	UJ (52)	U (26.5)	U (50)	U (86.2)	U (51)	U (25)	UJ (52)	UJ (52)	U (26.3)	U (51)	U (26.7)
4,6-Dinitro-2-methylphenol	not listed	U (51)	UJ (52)	U (26.5)	U (50)	U (86.2)	U (51)	U (25)	UJ (52)	UJ (52)	U (26.3)	U (51)	U (26.7)
4-Bromophenyl phenyl ether	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
4-Chloro-3-methylphenol	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
4-Chloroaniline	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
4-Chlorophenyl phenyl ether	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
4-Methylphenol		U (10)	UJ (500)	NA	**13**	NA	U (10)	NA	UJ (10)	UJ (10)	NA	U (10)	NA
4-Nitroaniline	5.0[b]	U (51)	UJ (52)	U (26.5)	U (50)	U (86.2)	U (51)	U (25)	UJ (52)	UJ (52)	U (26.3)	U (51)	U (26.7)
4-Nitrophenol	not listed	U (51)	UJ (52)	U (26.5)	U (50)	U (86.2)	U (51)	U (25)	UJ (52)	UJ (52)	U (26.3)	U (51)	U (26.7)
Acenaphthene	20[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Acenaphthylene	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Anthracene	50[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Benzo (a) anthracene	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Benzo (a) pyrene	ND	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Benzo (b) fluoranthene	0.0020[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Benzo (g,h,i) perylene	0.0020[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Benzo (k) fluoranthene	0.0020[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Bis (2-chloroethoxy) methane	5.0[b]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Bis (2-chloroethyl) ether	1.0	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Bis (2-chloroisopropyl) ether	not listed	U (10)	UJ (500)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (500)	UJ (500)	U (5.26)	U (10)	U (5.35)
Bis (2-ethylhexyl) phthalate	5.0	NA	NA	U (5.29)	NA	**129**	U (10)	**12.1**	U (10)	U (10)	**19.2**	U (82)	**14.9**

TABLE 16
Semi-Volatile Organic Compounds in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC Class	Production Wells			Building 4 Pit								
		Dept 68 Well	Dept 69 Well	Bldg 4 PW	Bldg 4 Sump		MW-01	MW-01	MW-02			MW-03	
Sample Date	GA	01/15/02	01/15/02	04/22/04	01/24/02	04/22/04	01/22/02	04/23/04	01/22/02	01/22/02	04/23/04	01/23/02	04/23/04
Sample Type	Values	N	N	N	N	N	N	N	N	FD	N	N	N
SVOC (µg/l)													
Butyl benzylphthalate	50[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Carbazole	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Chrysene	0.0020[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Dibenzo (a,h) anthracene	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Dibenzofuran	not listed	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Diethyl phthalate	50[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Dimethyl phthalate	50[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Di-n-butylphthalate	50	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Di-n-octylphthalate	50[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Fluoranthene	50[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Fluorene	50[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Hexachlorobenzene	0.040	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Hexachlorobutadiene	0.50	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Hexachlorocyclopentadiene	5.0[b]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Hexachloroethane	5.0[b]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Indeno (1,2,3-c,d) pyrene	0.0020[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Isophorone	50[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Naphthalene	10[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Nitrobenzene	0.40	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
n-Nitrosodi-n-propylamine	not listed	U (10)	UJ (500)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
n-Nitrosodiphenylamine	50[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Pentachlorophenol	1.0	U (51)	UJ (52)	U (26.5)	U (50)	U (86.2)	U (51)	U (25)	UJ (52)	UJ (52)	U (26.3)	U (51)	U (26.7)
Phenanthrene	50[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Phenol	1.0	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)
Pyrene	50[a]	U (10)	UJ (10)	U (5.29)	U (10)	U (17.2)	U (10)	U (5.0)	UJ (10)	UJ (10)	U (5.26)	U (10)	U (5.35)

TABLE 16
Semi-Volatile Organic Compounds in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC Class	Upgradient Wells			Gorham Street AOC			MW-10 Area					MW-11S Area
		MW-05I	MW-05S	MW-06	MW-07	MW-08	MW-09	MW-10		GW-10A	GW-10C	GW-10D	MW-11I
Sample Date	GA	01/15/02	01/21/02	01/21/02	01/18/02	01/18/02	01/21/02	01/21/02	04/22/04	04/22/04	04/22/04	04/22/04	01/23/02
Sample Type	Values	N	N	N	N	N	N	N	N	N	N	N	N
SVOC (g/l)													
1,2,4-Trichlorobenzene	5.0[b]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
1,2-Dichlorobenzene	3.0	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
1,3-Dichlorobenzene	3.0	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
1,4-Dichlorobenzene	3.0	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
2,2'-oxybis(1-Chloropropane)	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	NA	NA	NA	NA	U (10)
2,4,5-Trichlorophenol	not listed	U (50)	U (52)	U (50)	U (52)	U (50)	U (52)	U (50)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (51)
2,4,6-Trichlorophenol	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
2,4-Dichlorophenol	5.0[b]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
2,4-Dimethylphenol	1.0	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
2,4-Dinitrophenol	1.0	U (50)	U (52)	U (50)	U (52)	U (50)	U (52)	U (50)	U (26.3)	U (25)	U (28.4)	U (59.5)	U (51)
2,4-Dinitrotoluene	5.0[b]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
2,6-Dinitrotoluene	5.0[b]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
2-Chloronaphthalene	10[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
2-Chlorophenol	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
2-Methylnaphthalene	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
2-Methylphenol	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
2-Nitroaniline	5.0[b]	U (50)	U (52)	U (50)	U (52)	U (50)	U (52)	U (50)	U (26.3)	U (25)	U (28.4)	U (59.5)	U (51)
2-Nitrophenol	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
3,3'-Dichlorobenzidine	not listed	U (20)	U (20)	U (20)	U (20)	U (20)	U (20)	U (20)	U (10.5)	U (10)	U (11.4)	U (23.8)	U (20)
3-,4-Methylphenol	not listed	NA	NA	NA	NA	NA	NA	NA	U (5.26)	U (5.0)	U (5.68)	U (11.9)	NA
3-Nitroaniline	5.0[b]	U (50)	U (52)	U (50)	U (52)	U (50)	U (52)	U (50)	U (26.3)	U (25)	U (28.4)	U (59.5)	U (51)
4,6-Dinitro-2-methylphenol	not listed	U (50)	U (52)	U (50)	U (52)	U (50)	U (52)	U (50)	U (26.3)	U (25)	U (28.4)	U (59.5)	U (51)
4-Bromophenyl phenyl ether	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
4-Chloro-3-methylphenol	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
4-Chloroaniline	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
4-Chlorophenyl phenyl ether	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
4-Methylphenol		U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	NA	NA	NA	NA	U (10)
4-Nitroaniline	5.0[b]	U (50)	U (52)	U (50)	U (52)	U (50)	U (52)	U (50)	U (26.3)	U (25)	U (28.4)	U (59.5)	U (51)
4-Nitrophenol	not listed	U (50)	U (52)	U (50)	U (52)	U (50)	U (52)	U (50)	U (26.3)	U (25)	U (28.4)	U (59.5)	U (51)
Acenaphthene	20[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Acenaphthylene	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Anthracene	50[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Benzo (a) anthracene	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Benzo (a) pyrene	ND	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Benzo (b) fluoranthene	0.0020[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Benzo (g,h,i) perylene	0.0020[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Benzo (k) fluoranthene	0.0020[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Bis (2-chloroethoxy) methane	5.0[b]	U (10)	U (10)	U (10)	U (10)	U (10)	**2.7 J**	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Bis (2-chloroethyl) ether	1.0	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Bis (2-chloroisopropyl) ether	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Bis (2-ethylhexyl) phthalate	5.0	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)

TABLE 16
Semi-Volatile Organic Compounds in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC Class	Upgradient Wells			Gorham Street AOC			MW-10 Area					MW-11S Area
		MW-05I	MW-05S	MW-06	MW-07	MW-08	MW-09	MW-10		GW-10A	GW-10C	GW-10D	MW-11I
Sample Date	GA	01/15/02	01/21/02	01/21/02	01/18/02	01/18/02	01/21/02	01/21/02	04/22/04	04/22/04	04/22/04	04/22/04	01/23/02
Sample Type	Values	N	N	N	N	N	N	N	N	N	N	N	N
SVOC (µg/l)													
Butyl benzylphthalate	50[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Carbazole	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Chrysene	0.0020[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Dibenzo (a,h) anthracene	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Dibenzofuran	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Diethyl phthalate	50[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Dimethyl phthalate	50[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Di-n-butylphthalate	50	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Di-n-octylphthalate	50[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Fluoranthene	50[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Fluorene	50[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Hexachlorobenzene	0.040	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Hexachlorobutadiene	0.50	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Hexachlorocyclopentadiene	5.0[b]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Hexachloroethane	5.0[b]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Indeno (1,2,3-c,d) pyrene	0.0020[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Isophorone	50[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Naphthalene	10[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Nitrobenzene	0.40	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
n-Nitrosodi-n-propylamine	not listed	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
n-Nitrosodiphenylamine	50[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Pentachlorophenol	1.0	U (50)	U (52)	U (50)	U (52)	U (50)	U (52)	U (50)	U (26.3)	U (25)	U (28.4)	U (59.5)	U (51)
Phenanthrene	50[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Phenol	1.0	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)
Pyrene	50[a]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (5.0)	U (5.68)	U (11.9)	U (10)

TABLE 16
Semi-Volatile Organic Compounds in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC Class	MW-11S Area			SWMU 28	SWMU 25B	SWMU 1								MW-19
		MW-11I	MW-11S		MW-12	MW-13	MW-14	MW-15	MW-16I	MW-16S		MW-17		MW-18	MW-19
Sample Date	GA	04/22/04	01/23/02	04/22/04	01/21/02	01/16/02	01/22/02	01/22/02	01/16/02	01/16/02	01/16/02	01/22/02	04/22/04	01/21/02	01/23/02
Sample Type	Values	N	N	N	N	N	N	N	N	N	FD	N	N	N	N
SVOC (µg/l)															
1,2,4-Trichlorobenzene	5.0[b]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
1,2-Dichlorobenzene	3.0	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
1,3-Dichlorobenzene	3.0	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
1,4-Dichlorobenzene	3.0	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
2,2'-oxybis(1-Chloropropane)	not listed	NA	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	NA	U (10)	U (10)
2,4,5-Trichlorophenol	not listed	U (5.43)	U (52)	U (5.1)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (51)	U (5.26)	U (52)	U (52)
2,4,6-Trichlorophenol	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
2,4-Dichlorophenol	5.0[b]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
2,4-Dimethylphenol	1.0	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
2,4-Dinitrophenol	1.0	U (27.2)	U (52)	U (25.5)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (51)	U (26.3)	U (52)	U (52)
2,4-Dinitrotoluene	5.0[b]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
2,6-Dinitrotoluene	5.0[b]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
2-Chloronaphthalene	10[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
2-Chlorophenol	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
2-Methylnaphthalene	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	**7.3 J**	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
2-Methylphenol	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
2-Nitroaniline	5.0[b]	U (27.2)	U (52)	U (25.5)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (51)	U (26.3)	U (52)	U (52)
2-Nitrophenol	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
3,3'-Dichlorobenzidine	not listed	U (10.9)	U (20)	U (10.2)	U (20)	U (20)	U (20)	U (20)	U (20)	U (20)	U (20)	U (20)	U (10.5)	U (20)	U (20)
3-,4-Methylphenol	not listed	U (5.43)	NA	U (5.1)	NA	NA	NA	NA	NA	NA	NA	NA	U (5.26)	NA	NA
3-Nitroaniline	5.0[b]	U (27.2)	U (52)	U (25.5)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (51)	U (26.3)	U (52)	U (52)
4,6-Dinitro-2-methylphenol	not listed	U (27.2)	U (52)	U (25.5)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (51)	U (26.3)	U (52)	U (52)
4-Bromophenyl phenyl ether	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
4-Chloro-3-methylphenol	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
4-Chloroaniline	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
4-Chlorophenyl phenyl ether	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
4-Methylphenol		NA	**1.4 J**	NA	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	NA	U (10)	U (10)
4-Nitroaniline	5.0[b]	U (27.2)	U (52)	U (25.5)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (51)	U (26.3)	U (52)	U (52)
4-Nitrophenol	not listed	U (27.2)	U (52)	U (25.5)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (51)	U (26.3)	U (52)	U (52)
Acenaphthene	20[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	**1.4 J**	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Acenaphthylene	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	**2.2 J**	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Anthracene	50[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	**9.2 J**	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Benzo (a) anthracene	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Benzo (a) pyrene	ND	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Benzo (b) fluoranthene	0.0020[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	**7.7 J**	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Benzo (g,h,i) perylene	0.0020[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Benzo (k) fluoranthene	0.0020[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Bis (2-chloroethoxy) methane	5.0[b]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Bis (2-chloroethyl) ether	1.0	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Bis (2-chloroisopropyl) ether	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Bis (2-ethylhexyl) phthalate	5.0	U (5.43)	U (10)	**7.92**	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (36)	U (5.26)	U (10)	U (10)

TABLE 16
Semi-Volatile Organic Compounds in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC Class	MW-11S Area			SWMU 28	SWMU 25B	SWMU 1								MW-19
		MW-11I	MW-11S		MW-12	MW-13	MW-14	MW-15	MW-16I	MW-16S		MW-17		MW-18	MW-19
Sample Date	GA	04/22/04	01/23/02	04/22/04	01/21/02	01/16/02	01/22/02	01/22/02	01/16/02	01/16/02	01/16/02	01/22/02	04/22/04	01/21/02	01/23/02
Sample Type	Values	N	N	N	N	N	N	N	N	N	FD	N	N	N	N
SVOC (µg/l)															
Butyl benzylphthalate	50[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Carbazole	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Chrysene	0.0020[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Dibenzo (a,h) anthracene	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Dibenzofuran	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	**2.6 J**	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Diethyl phthalate	50[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Dimethyl phthalate	50[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Di-n-butylphthalate	50	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Di-n-octylphthalate	50[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Fluoranthene	50[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	**10**	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Fluorene	50[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	**10**	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Hexachlorobenzene	0.040	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Hexachlorobutadiene	0.50	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Hexachlorocyclopentadiene	5.0[b]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Hexachloroethane	5.0[b]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Indeno (1,2,3-c,d) pyrene	0.0020[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Isophorone	50[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Naphthalene	10[a]	U (5.43)	U (10)	U (5.1)	U (10)	**2.3 J**	U (10)	U (10)	**29**	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Nitrobenzene	0.40	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
n-Nitrosodi-n-propylamine	not listed	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
n-Nitrosodiphenylamine	50[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Pentachlorophenol	1.0	U (27.2)	U (52)	U (25.5)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (51)	U (26.3)	U (52)	U (52)
Phenanthrene	50[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	**6.2 J**	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Phenol	1.0	U (5.43)	**29**	U (5.1)	**1.7 J**	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)
Pyrene	50[a]	U (5.43)	U (10)	U (5.1)	U (10)	U (10)	U (10)	U (10)	**1.9 J**	U (10)	U (10)	U (10)	U (5.26)	U (10)	U (10)

Notes:
Sample Type:
N = Field sample.
FD = Field duplicate.
Class GA Values = Class GA groundwater standards or guidelines (NYSDEC, June 1998; as amended).
not listed = No screening level is provided by NYSDEC.
U = The constituent was not detected above the associated reporting limit. (reporting limits are shown in parenthesis)
Bold indicates that the constituent was detected above the reporting limits.
Shading indicates that the constituent was detected above Class GA standards or guidelines.
a = Guidance value.
b= Principal organic contaminant standard, a general standard that applies individually to substances that do not have chemical specific standards or guidelines.

TABLE 17
Polychlorinated Biphenyls in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

	NYSDEC	Upgradient			Production Wells		Bldg 4 Pit					MW-10 Area	MW-11S Area	
Location ID	Class	MW-05I	MW-05S	MW-06	Dept 68 Well	Dept 69 Well	Bldg 4 Sump	MW-01	MW-02		MW-03	MW-10	MW-11I	MW-11S
Sample Date	GA	01/15/02	01/21/02	01/21/02	01/15/02	01/15/02	01/24/02	01/22/02	01/22/02	01/22/02	01/23/02	01/21/02	01/23/02	01/23/02
Sample Type	Values	N	N	N	N	N	N	N	N	N	N	N	N	N
PCB (g/l)														
Aroclor 1016	not listed	U (0.51)	U (0.52)	U (0.50)	U (0.50)	U (0.51)	U (0.50)	U (0.51)	U (0.52)	U (0.50)	U (0.52)	U (0.51)	U (0.50)	UJ (0.52)
Aroclor 1221	not listed	U (0.51)	U (0.52)	U (0.50)	U (0.50)	U (0.51)	U (0.50)	U (0.51)	U (0.52)	U (0.50)	U (0.52)	U (0.51)	U (0.50)	UJ (0.52)
Aroclor 1232	not listed	U (0.51)	U (0.52)	U (0.50)	U (0.50)	U (0.51)	U (0.50)	U (0.51)	U (0.52)	U (0.50)	U (0.52)	U (0.51)	U (0.50)	UJ (0.52)
Aroclor 1242	not listed	U (0.51)	U (0.52)	U (0.50)	U (0.50)	U (0.51)	U (0.50)	U (0.51)	U (0.52)	U (0.50)	U (0.52)	U (0.51)	U (0.50)	UJ (0.52)
Aroclor 1248	not listed	U (0.51)	U (0.52)	U (0.50)	U (0.50)	U (0.51)	U (0.50)	U (0.51)	U (0.52)	U (0.50)	U (0.52)	U (0.51)	U (0.50)	UJ (0.52)
Aroclor 1254	not listed	U (0.51)	U (0.52)	U (0.50)	U (0.50)	U (0.51)	U (0.50)	U (0.51)	U (0.52)	U (0.50)	U (0.52)	U (0.51)	U (0.50)	UJ (0.52)
Aroclor 1260	not listed	U (0.51)	U (0.52)	U (0.50)	U (0.50)	U (0.51)	U (0.50)	U (0.51)	U (0.52)	U (0.50)	U (0.52)	U (0.51)	U (0.50)	UJ (0.52)
Total PCBs	not listed	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

TABLE 17
Polychlorinated Biphenyls in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

	NYSDEC	SWMU 1							MW-19	Gorham Street AOC			SWMU 28	SWMU 25B
Location ID	Class	MW-14	MW-15	MW-16I	MW-16S		MW-17	MW-18	MW-19	MW-07	MW-08	MW-09	MW-12	MW-13
Sample Date	GA	01/22/02	01/22/02	01/16/02	01/16/02	01/16/02	01/22/02	01/21/02	01/23/02	01/18/02	01/18/02	01/21/02	01/21/02	01/16/02
Sample Type	Values	N	N	N	N	FD	N	N	N	N	N	N	N	N
PCB (g/l)		**PCB (g/l)**												
Aroclor 1016	not listed	U (0.51)	U (0.50)	U (0.51)	UJ (0.51)	UJ (0.50)	U (0.70)	U (0.51)	0.79 U	U (0.51)	U (0.52)	U (0.50)	U (0.51)	U (0.51)
Aroclor 1221	not listed	U (0.51)	U (0.50)	U (0.51)	UJ (0.51)	UJ (0.50)	U (0.70)	U (0.51)	0.79 U	U (0.51)	U (0.52)	U (0.50)	U (0.51)	U (0.51)
Aroclor 1232	not listed	U (0.51)	U (0.50)	U (0.51)	UJ (0.51)	UJ (0.50)	U (0.70)	U (0.51)	0.79 U	U (0.51)	U (0.52)	U (0.50)	U (0.51)	U (0.51)
Aroclor 1242	not listed	U (0.51)	U (0.50)	U (0.51)	UJ (0.51)	UJ (0.50)	U (0.70)	U (0.51)	0.79 U	U (0.51)	U (0.52)	U (0.50)	U (0.51)	U (0.51)
Aroclor 1248	not listed	U (0.51)	U (0.50)	U (0.51)	UJ (0.51)	UJ (0.50)	U (0.70)	U (0.51)	0.79 U	U (0.51)	U (0.52)	U (0.50)	U (0.51)	U (0.51)
Aroclor 1254	not listed	U (0.51)	U (0.50)	U (0.51)	UJ (0.51)	UJ (0.50)	U (0.70)	U (0.51)	0.79 U	U (0.51)	U (0.52)	U (0.50)	U (0.51)	U (0.51)
Aroclor 1260	not listed	U (0.51)	U (0.50)	U (0.51)	UJ (0.51)	UJ (0.50)	U (0.70)	U (0.51)	0.79 U	U (0.51)	U (0.52)	U (0.50)	U (0.51)	U (0.51)
Total PCBs	not listed	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

Sample Type:
N = Field sample.
FD = Field duplicate.
Class GA Values = Class GA groundwater standards or guidelines (NYSDEC, June 1998; as amended)
not listed = No screening level is provided by NYSDEC.
U = The constituent was not detected above the associated reporting limit. (reporting limits shown in parenthesis)
J = The constituent concentration was estimated
Bold indicates that the analyte was detected above the reporting limit.
Shading indicates that the analyte was detected above Class GA standards or guidelines.

TABLE 18
Inorganics in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC	Production Wells				Building 4 Pit			
		Dept 68 Well		Dept 69 Well		Bldg 4 PW			
Sample Date	Class	01/15/02	11/04/02	01/15/02	11/04/02	04/22/04	04/22/04	04/22/04	04/22/04
Sample Type	GA	N	N	N	N	N	N	FD	FD
Sample Prep	Values	Total	Total	Total	Total	Total	Dissolved	Total	Dissolved
Inorganics (µg/l)									
Aluminum	not listed	U (100)	U (100)	U (100)	U (100)	**1,140**	U (100)	**1,140**	U (100)
Antimony	3.0	U (60)	U (60)	**4.0 J**	U (60)	U (60)	U (60)	U (60)	U (60)
Arsenic	25	U (5.0)	**1.9 J**	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)
Barium	1000	**20 J**	**24 J**	**20 J**	**20 J**	U (100)	U (100)	U (100)	U (100)
Beryllium	3.0	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)
Cadmium	5.0	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)
Calcium	not listed	**280000**	**230000**	**340000**	**280000**	**44,000**	**43,800**	**43,800**	**42500**
Chromium	50	**4.0 J**	**1.8 J**	**10 J**	**1.8 J**	U (10)	U (10)	U (10)	U (10)
Cobalt	not listed	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)
Copper	200	**0.70 J**	**1.9 J**	**10 J**	**18**	U (10)	U (10)	U (10)	U (10)
Cyanide	200	U (10)	NA	U (10)	NA	NA	NA	NA	NA
Iron	300	**110**	**61**	**1200**	**230**	**881**	**70.5**	**906**	**63.2**
Lead	25	U (5.0)	U (5.0)	**1.0 J**	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)
Magnesium	35000	**70000**	**61000**	**79000**	**66000**	**11,500**	**11,300**	**11,500**	**11000**
Manganese	300	**10 J**	**5.6 J**	**20 J**	**6.2 J**	U (50)	U (50)	U (50)	U (50)
Mercury	0.70	U (0.20)	UJ (0.20)	U (0.20)	**0.11 J**	U (0.2)	U (0.2)	U (0.2)	U (0.2)
Nickel	100	**2.0 J**	U (40)	**2.0 J**	U (40)	U (40)	U (40)	U (40)	U (40)
Potassium	not listed	**5000 J**	**4800 J**	**4000 J**	**4200 J**	U (5000)	U (5000)	U (5000)	U (5000)
Selenium	10	UJ (5.0)	U (5.0)	UJ (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)
Silver	50	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)
Sodium	20000	**540000**	**350000**	**440000**	**310000**	**87,600**	**86,900**	**86,900**	**84700**
Thallium	0.5[b]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)
Vanadium	not listed	U (50)	U (50)	**0.70 J**	**1.6 J**	U (50)	U (50)	U (50)	U (50)
Zinc	5000	**50**	**4.7 J**	**10 J**	**41**	U (0.010)	U (0.010)	U (0.010)	U (0.010)
pH	not listed	NA	NA	NA	NA	NA	NA	NA	NA
Turbidity	not listed	NA	NA	NA	NA	NA	NA	NA	NA
Chloride (mg/L)	250	**670**	**560**	**610**	**520**	NA	NA	NA	NA
Sulfate (mg/L)	250	**1100**	**510**	**1000**	**560**	NA	NA	NA	NA
Total Sulfides (mg/L)	not listed	**0.20**	NA	U (0.20)	NA	NA	NA	NA	NA

TABLE 18
Inorganics in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC	Building 4 Sump				Building 4 Pit					MW-02	
						MW-01						
Sample Date	Class	01/24/02	11/04/02	04/22/04	04/22/04	01/22/02	11/06/02	11/06/02	04/23/04	04/23/04	01/22/02	11/05/02
Sample Type	GA	N	N	N	N	N	N	FD	N	N	N	N
Sample Prep	Values	Total	Total	Total	Dissolved	Total	Total	Total	Total	Dissolved	Total	Total
Inorganics (µg/l)												
Aluminum	not listed	**20 J**	U (100)	**1,270**	**751**	**1200**	**220**	**190**	**196**	**114**	UJ (100)J	U (100)
Antimony	3.0	**2.0 J**	U (60)	U (60)	U (60)	**3.0 J**	U (60)	U (60)	U (60)	U (60)	**4.0 J**	**3.9 J**
Arsenic	25	**88**	**94**	**116**	**72.4**	**11**	**8.6**	**7.8**	**73.6**	**97.4**	**69 J**	**86**
Barium	1000	**200**	**160 J**	U (100)	U (100)	**100 J**	**90 J**	**86 J**	**295**	**273**	**40 J**	**29 J**
Beryllium	3.0	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	UJ (5.0)	U (5.0)
Cadmium	5.0	**25**	**13**	U (5.0)	U (5.0)	**1.0 J**	U (5.0)	U (5.0)	**6.17**	U (5.0)	UJ (5.0)	U (5.0)
Calcium	not listed	**260000**	**190000**	**39,700**	**37,100**	**78000**	**82000**	**79000**	**175,000**	**271,000**	**300000 J**	**300000**
Chromium	50	**30**	**16**	**59.3**	**50.3**	**4.0 J**	**3.1 J**	**2.9 J**	**10.3**	**16.5**	**60 J**	**29**
Cobalt	not listed	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	U (50)	UJ (50)	U (50)
Copper	200	U (10)	**1.1 J**	**134**	U (10)	**30**	**11**	**9.2 J**	U (10)	U (10)	UJ (10)	U (10)
Cyanide	200	**36**	NA	NA	NA	U (10)	NA	NA	NA	NA	UJ (50)	NA
Iron	300	**230**	**130**	**20,400**	**17,900**	**6000**	**4900**	**4600**	**1,330**	U (50)	**60 J**	**44 J**
Lead	25	U (5.0)	U (5.0)	**16.5**	U (5.0)	**57**	**36**	**35**	U (5.0)	U (5.0)	**2.0 J**	U (5.0)
Magnesium	35000	**110000**	**100000**	**9,580**	**8,740**	**6000**	**6500**	**6400**	**116,000**	**133,000**	**87000 J**	**78000**
Manganese	300	**40 J**	**17 J**	**135**	**116**	**150**	**210**	**200**	U (50)	U (50)	**10 J**	**0.97 J**
Mercury	0.70	U (0.20)	UJ (0.20)	U (0.2)	U (0.2)	U (0.20)	**0.034 J**	UJ (0.20)	U (0.2)	U (0.2)	**0.30 J**	**0.19 J**
Nickel	100	**70**	**71**	**49**	**41.2**	**10 J**	**4.5 J**	**4.5 J**	**59.5**	**79.5**	**10 J**	U (40)
Potassium	not listed	**45000 J**	**40000**	U (5000)	U (5000)	**3000 J**	**4400 J**	**4300 J**	**40,400**	**43,800**	**80000 J**	**60000**
Selenium	10	UJ (5.0)	U (5.0)	**14.2**	**13.2**	**3.0 J**	U (5.0)	U (5.0)	**12.9**	**7.07**	**3.0 J**	U (5.0)
Silver	50	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	UJ (10)	U (10)
Sodium	20000	**600000**	**590000**	**441,000**	**418,000**	**37000**	**27000**	**28000**	**611,000**	**770,000**	**5900000 J**	**5400000**
Thallium	0.5[b]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	UJ (50)	U (50)
Vanadium	not listed	**40 J**	**23 J**	**64.8**	U (50)	**4.0 J**	**2.9 J**	**2.4 J**	U (50)	U (50)	**100 J**	**76**
Zinc	5000	U (10)	**14**	**313**	**300**	**110**	**20**	**20**	**50.4**	U (0.010)	**10 J**	U (50)
pH	not listed	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turbidity	not listed	NA	NA	NA	NA	NA	NA	NA	**520**	NA	NA	NA
Chloride (mg/L)	250	**550**	**830**	NA	NA	**15**	**36**	**34**	NA	NA	**1400**	**3900**
Sulfate (mg/L)	250	**250**	**190**	NA	NA	**47**	U (9.6)	U (9.3)	NA	NA	**6400**	**4900**
Total Sulfides (mg/L)	not listed	**260**	NA	NA	NA	U (0.20)	NA	NA	NA	NA	**960**	NA

TABLE 18
Inorganics in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC	Building 4 Pit			Building 4 Pit				Upgradient		
		MW-02			MW-03				MW-05I	MW-05S	MW-06
Sample Date	Class	11/05/02	04/23/04	04/23/04	01/22/02	11/05/02	04/23/04	04/23/04	01/15/02	01/21/02	01/21/02
Sample Type	GA	FD	N	N	N	N	N	N	N	N	N
Sample Prep	Values	Total	Total	Dissolved	Total	Total	Total	Dissolved	Total	Total	Total
Inorganics (g/l)											
Aluminum	not listed	UJ (100)	1,570	165	UJ (100)	17 J	565	124	50 J	20 J	10 J
Antimony	3.0	4.0 J	U (60)	U (60)	2.0 J	U (60)	U (60)	U (60)	3.0 J	U (60)	UJ (60)
Arsenic	25	69 J	109	95.8	1000 J	900	618	662	U (5.0)	U (5.0)	UJ (5.0)
Barium	1000	40 J	U (100)	U (100)	1500 J	1600 J	1,540	1,380	100 J	200	200 J
Beryllium	3.0	UJ (5.0)	U (5.0)	U (5.0)	UJ (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	UJ (5.0)
Cadmium	5.0	UJ (5.0)	13.1	U (5.0)	UJ (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	UJ (5.0)
Calcium	not listed	300000 J	633,000	531,000	220000 J	200000	183,000	177,000	71000	140000	120000 J
Chromium	50	60 J	149	112	100 J	73	383	26	3.0 J	3.0 J	2.0 J
Cobalt	not listed	UJ (50)	U (50)	U (50)	10 J	7.2 J	U (50)	U (50)	U (50)	U (50)	UJ (50)
Copper	200	UJ (10)	U (10)	U (10)	UJ (10)	U (10)	U (10)	U (10)	1.0 J	2.0 J	UJ (10)
Cyanide	200	UJ (50)	NA	NA	20 J	NA	NA	NA	U (10)	U (10)	UJ (10)
Iron	300	50 J	2,780	U (50)	180 J	280	4,310	150	140	210	30 J
Lead	25	2.0 J	11	7.27	UJ (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	UJ (5.0)
Magnesium	35000	87000 J	144,000	134,000	210000 J	220000	189,000	180,000	17000	139000	31000 J
Manganese	300	10 J	74	U (50)	180 J	180	184	165	30 J	240	370 J
Mercury	0.70	0.30 J	U (0.2)	U (0.2)	UJ (0.20)	0.046 J	U (0.2)	U (0.2)	U (0.20)	U (0.20)	UJ (0.20)
Nickel	100	10 J	U (40)	U (40)	110 J	79	52.2	47.2	4.0 J	3.0 J	UJ (40)
Potassium	not listed	80000 J	69,400	70,600	47000 J	45000	41,100	38,100	4000 J	3000 J	2000 J
Selenium	10	3.0 J	22.9	17.3	UJ (5.0)	U (5.0)	U (5.0)	U (5.0)	UJ (5.0)	UJ (5.0)	UJ (5.0)
Silver	50	UJ (10)	U (10)	U (10)	UJ (10)	U (10)	U (10)	U (10)	U (10)	U (10)	UJ (10)
Sodium	20000	6000000 J	4,240,000	4,250,000	680000 J	620000	591,000	566,000	82000	65000	68000 J
Thallium	0.5[b]	UJ (50)	U (10)	U (10)	UJ (10)	U (10)	U (10)	U (10)	U (10)	U (10)	UJ (10)
Vanadium	not listed	100 J	67.3	59.8	30 J	29 J	U (50)	U (50)	U (50)	U (50)	UJ (50)
Zinc	5000	10 J	95.8	26	UJ (10)	180	228	U (0.010)	U (10)	20	UJ (10)
pH	not listed	NA	NA	NA	910	870	NA	NA	NA	NA	NA
Turbidity	not listed	NA	50.8	NA	19	28	168	NA	NA	NA	NA
Chloride (mg/L)	250	1500	NA	NA	34	NA	NA	NA	130	96	110
Sulfate (mg/L)	250	6300	NA	NA	NA	NA	NA	NA	74	170	20
Total Sulfides (mg/L)	not listed	960	NA	NA	NA	NA	NA	NA	U (0.20)	U (0.20)	UJ (0.20)

TABLE 18
Inorganics in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

		Gorham Street AOC			MW-10 Area							MW-11S Area		
Location ID	NYSDEC	MW-07	MW-08	MW-09	MW-10				GW-10A	GW-10C	GW-10D	MW-11I		
Sample Date	Class	01/18/02	01/18/02	01/21/02	01/21/02	11/06/02	04/22/04	04/22/04	04/22/04	04/22/04	04/22/04	01/23/02	04/22/04	04/22/04
Sample Type	GA	N	N	N	N	N	N	N	N	N	N	N	N	N
Sample Prep	Values	Total	Total	Total	Total	Total	Total	Dissolved	Total	Total	Total	Total	Total	Dissolved
Inorganics (µg/l)														
Aluminum	not listed	30 J	10 J	200	1200 J	640	8,170	101	1,930,000	70,700	833,000	100	1,650	U (100)
Antimony	3.0	U (60)	U (60)	U (60)	2.0 J	U (60)	U (60)	U (60)	U (60)	U (60)	U (60)	U (60)	U (60)	U (60)
Arsenic	25	U (5.0)	4.0 J	3.0 J	51 J	69	50.7	8.24	592	32.3	78.4	U (5.0)	U (5.0)	U (5.0)
Barium	1000	200	100	20 J	100 J	56 J	158	U (100)	10,100	514	2,630	30 J	U (100)	U (100)
Beryllium	3.0	U (5.0)	U (5.0)	U (5.0)	UJ (5.0)	U (5.0)	U (5.0)	U (5.0)	U (50)	U (5.0)	19.7	U (5.0)	U (5.0)	U (5.0)
Cadmium	5.0	U (5.0)	U (5.0)	U (5.0)	UJ (5.0)	U (5.0)	U (5.0)	U (5.0)	U (50)	U (5.0)	U (5.0)	U (5.0)	U (5.0)	U (5.0)
Calcium	not listed	220000	220000	260000	300000 J	240000	130,000	140,000	4,740,000	441,000	1,380,000	64000	62,500	45,200
Chromium	50	U (10)	2.0 J	2.0 J	30 J	17	U (10)	U (10)	2,130	97	549	2.0 J	U (10)	U (10)
Cobalt	not listed	U (50)	U (50)	U (50)	UJ (50)	U (50)	U (50)	U (50)	965	U (50)	167	U (50)	U (50)	U (50)
Copper	200	0.70 J	0.80 J	2.0 J	1.0 J	U (10)	U (10)	U (10)	2,160	144	632	U (10)	U (10)	U (10)
Cyanide	200	U (10)	U (10)	U (10)	29 J	NA	NA	NA	NA	NA	NA	U (10)	NA	NA
Iron	300	2000	17000	670	2700 J	2000	7,250	1,530	2,240,000	83,000	1,320,000	80	2,280	78
Lead	25	U (5.0)	4.0 J	U (5.0)	UJ (5.0)	U (5.0)	20.2	U (5.0)	788	67.1	222	U (5.0)	U (5.0)	U (5.0)
Magnesium	35000	21000	35000	130000	160000 J	200000	97,400	109,000	1,520,000	208,000	330,000	18000	17,400	11,400
Manganese	300	3000	980	250	560 J	240	197	194	40,400	3,220	21,900	20 J	U (50)	U (50)
Mercury	0.70	U (0.20)	U (0.20)	0.20	UJ (0.20)	UJ (0.20)	U (0.2)	U (0.2)	1.52	U (0.2)	2.44	U (0.20)	U (0.2)	U (0.2)
Nickel	100	3.0 J	2.0 J	10 J	40 J	24 J	U (40)	U (40)	2,120	184	433	3.0 J	U (40)	U (40)
Potassium	not listed	13000 J	7000 J	10000 J	11000 J	13000	8,470	8,600	565,000	19,500	75,100	8000 J	U (5000)	U (5000)
Selenium	10	12 J	UJ (5.0)	UJ (5.0)	UJ (5.0)	U (5.0)	U (5.0)	U (5.0)	U (10)	U (5.0)	11.7	UJ (5.0)	U (5.0)	U (5.0)
Silver	50	U (10)	U (10)	U (10)	UJ (10)	U (10)	U (10)	U (10)	U (100)	U (10)	U (10)	U (10)	U (10)	U (10)
Sodium	20000	600000	420000	1400000	1200000 J	950000	601,000	653,000	733,000	161,000	326,000	420000	101,000	99,900
Thallium	0.5[b]	U (10)	U (10)	U (10)	UJ (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)
Vanadium	not listed	5.0 J	U (50)	2.0 J	30 J	29 J	U (50)	U (50)	3,170	163	931	U (50)	U (50)	U (50)
Zinc	5000	U (10)	10	U (10)	UJ (10)	U (10)	655	U (0.010)	4,790	238	1,340	60	1,380	72.5
pH	not listed	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Turbidity	not listed	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	74.2	NA
Chloride (mg/L)	250	900	680	1100	1100	1500	NA	NA	NA	NA	NA	270	NA	NA
Sulfate (mg/L)	250	190	260	2000	1200	740	NA	NA	NA	NA	NA	540	NA	NA
Total Sulfides (mg/L)	not listed	U (0.20)	U (0.20)	U (0.20)	4.0	NA	NA	NA	NA	NA	NA	U (0.20)	NA	NA

TABLE 18
Inorganics in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Location ID	NYSDEC	MW-11S Area				SWMU 28	SWMU 25B	SWMU 1	
		MW-11S				MW-12	MW-13	MW-14	MW-15
Sample Date	Class	01/23/02	11/05/02	04/22/04	04/22/04	01/21/02	01/16/02	01/22/02	01/22/02
Sample Type	GA	N	N	N	N	N	N	N	N
Sample Prep	Values	Total	Total	Total	Dissolved	Total	Total	Total	Total
Inorganics (µg/l)									
Aluminum	not listed	500 J	280	3,300	372	200 J	1100	1600	1900
Antimony	3.0	10 J	28 J	U (60)	U (60)	UJ (60)	U (60)	U (60)	U (60)
Arsenic	25	7900 J	15000	8,580	8,270	3.0 J	U (5.0)	30	7.0
Barium	1000	100 J	72 J	U (100)	U (100)	100 J	200	200	100 J
Beryllium	3.0	UJ (5.0)	U (5.0)	U (5.0)	U (5.0)	UJ (5.0)	U (5.0)	U (5.0)	0.10 J
Cadmium	5.0	UJ (5.0)	U (5.0)	50.6	49.9	UJ (5.0)	U (5.0)	U (5.0)	U (5.0)
Calcium	not listed	2000 J	1200	9,510	5,110	390000 J	160000	130000	83000
Chromium	50	270 J	220	49.7	39.6	4.0 J	20	4.0 J	10 J
Cobalt	not listed	30 J	27 J	U (50)	U (50)	UJ (50)	1.0 J	10 J	U (50)
Copper	200	30 J	4.0 J	U (10)	U (10)	1.0 J	4.0 J	3.0 J	30
Cyanide	200	200 J	NA	NA	NA	18 J	U (10)	U (10)	U (10)
Iron	300	1300 J	560	3,690	1,060	640 J	5600	8700	6600
Lead	25	11 J	4.3 J	24.8	U (5.0)	2.0 J	5.0 J	3.0 J	49
Magnesium	35000	4000 J	520 J	4,370	3,880	64000 J	34000	22000	18000
Manganese	300	20 J	7.2 J	U (50)	U (50)	680 J	230	670	370
Mercury	0.70	0.60 J	UJ (0.68)	0.626	0.604	UJ (0.20)	U (0.20)	U (0.20)	0.80
Nickel	100	110 J	110	248	266	2.0 J	10 J	90	10 J
Potassium	not listed	8000 J	5900	16,300	15,100	41000 J	8000 J	5000 J	3000 J
Selenium	10	11 J	6.8	5.84	7.28	UJ (5.0)	UJ (5.0)	UJ (5.0)	UJ (5.0)
Silver	50	UJ (10)	U (10)	U (10)	U (10)	UJ (10)	U (10)	U (10)	U (10)
Sodium	20000	5400000 J	6800000	4,550,000	4,410,000	610000 J	130000	230000	77000
Thallium	0.5[b]	UJ (50)	UJ (20)	U (10)	U (10)	UJ (10)	U (10)	U (10)	U (10)
Vanadium	not listed	520 J	410	183	189	2.0 J	3.0 J	3.0 J	4.0 J
Zinc	5000	40 J	36 J	56.8	34.5	80 J	4.0 J	10	120
pH	not listed	NA	NA	NA	NA	NA	NA	NA	NA
Turbidity	not listed	NA	NA	NA	NA	NA	NA	NA	NA
Chloride (mg/L)	250	370	450	NA	NA	1200	150	330	120
Sulfate (mg/L)	250	1900	2300	NA	NA	3500	180	120	43
Total Sulfides (mg/L)	not listed	28	NA	NA	NA	33	U (0.20)	U (0.20)	U (0.20)

TABLE 18
Inorganics in Groundwater
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

		SWMU 1							MW-19
Location ID	NYSDEC	MW-16I	MW-16S		MW-17			MW-18	MW-19
Sample Date	Class	01/16/02	01/16/02	01/16/02	01/24/02	04/22/04	04/22/04	01/21/02	01/23/02
Sample Type	GA	N	N	FD	N	N	N	N	N
Sample Prep	Values	Total	Total	Total	Total	Total	Dissolved	Total	Total
Inorganics (g/l)									
Aluminum	not listed	**200**	**100 J**	**20 J**	**11000**	**3,910**	U (100)	**200**	**600**
Antimony	3.0	U (60)	U (60)	U (60)	U (60)	U (60)	U (60)	U (60)	U (60)
Arsenic	25	U (5.0)	**3.0 J**	**3.0 J**	**19**	**40.6**	U (5.0)	U (5.0)	U (5.0)
Barium	1000	**100 J**	**300**	**300**	**500**	**320**	**173**	**300**	**100 J**
Beryllium	3.0	U (5.0)	U (5.0)	U (5.0)	**0.50 J**	U (5.0)	U (5.0)	U (5.0)	U (5.0)
Cadmium	5.0	U (5.0)	U (5.0)	U (5.0)	**3.0 J**	U (5.0)	U (5.0)	U (5.0)	U (5.0)
Calcium	not listed	**95000**	**130000**	**130000**	**260000**	**288,000**	**215,000**	**190000**	**140000**
Chromium	50	**20**	**10 J**	**3.0 J**	**90**	U (10)	U (10)	**3.0 J**	**10 J**
Cobalt	not listed	**90**	U (50)	U (50)	**110**	U (50)	U (50)	U (50)	U (50)
Copper	200	**10 J**	**0.70 J**	U (10)	**90**	**10.6**	U (10)	U (10)	**1.0 J**
Cyanide	200	U (10)	U (10)	U (10)	U (10)	NA	NA	U (10)	U (10)
Iron	300	**720**	**32000**	**32000**	**30000**	**5,450**	**741**	**28000**	U (10)
Lead	25	**1.0 J**	**2.0 J**	**3.0 J**	**330**	**36.1**	U (5.0)	**3.0 J**	U (10)
Magnesium	35000	**18000**	**21000**	**22000**	**97000**	**66,600**	**37,100**	**38000**	U (10)
Manganese	300	**80**	**620**	**620**	**620**	**1,040**	**900**	**340**	U (10)
Mercury	0.70	U (0.20)	U (0.20)	U (0.20)	**1.30**	U (0.2)	U (0.2)	U (0.20)	U (10)
Nickel	100	**20 J**	**2.0 J**	U (40)	**70**	U (40)	U (40)	**1.0 J**	U (10)
Potassium	not listed	**3000 J**	**5000 J**	**5000 J**	**12000 J**	**10,900**	**9,610**	**8000 J**	U (10)
Selenium	10	UJ (5.0)	UJ (5.0)	UJ (5.0)	**5.0 J**	U (5.0)	U (5.0)	UJ (5.0)	U (10)
Silver	50	**1.0 J**	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)
Sodium	20000	**77000**	**85000**	**88000**	**95000**	**93,700**	**97,900**	**150000**	U (10)
Thallium	0.5[b]	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)	U (10)
Vanadium	not listed	U (50)	U (50)	U (50)	**30 J**	U (50)	U (50)	U (50)	U (10)
Zinc	5000	**90**	**10 J**	**10 J**	**530**	**16.3**	U (10)	**10 J**	U (10)
pH	not listed	NA	NA	NA	NA	NA	NA	NA	U (10)
Turbidity	not listed	NA	NA	NA	NA	**98.8**	NA	NA	U (10)
Chloride (mg/L)	250	**120**	**140**	**140**	**160**	NA	NA	**260**	U (10)
Sulfate (mg/L)	250	**72**	**44**	**49**	**73**	NA	NA	**100**	U (10)
Total Sulfides (mg/L)	not listed	U (0.20)	U (0.20)	U (0.20)	U (0.20)	NA	NA	U (0.20)	U (10)

Notes:

Sample Type:
N = Field sample.
FD = Field duplicate.
Class GA Values = Class GA groundwater standards or guidelines (NYSDEC, June 1998; as amended)
not listed = No screening level is provided by NYSDEC.
NA = not analyzed
U = The compound was not detected above the associated reporting limit. (reporting limits shown in parenthesis)
Bold indicates that the analyte was detected above reporting limit.
Shading indicates that the analyte was detected above Class GA standards or guidelines.

TABLE 19
Constituents of Potential Concern
RCRA Facility Investigation Report
Hampshire Chemical Corporation, Waterloo, NY

Media	VOCs	SVOCs	PCBs	Inorganics
Surface Soil	none	Benzo (a) anthracene	**Aroclor-1254**	Arsenic
		Benzo (a) pyrene		Barium
		Chrysene		Cadmium
				Chromium
				Copper
				Iron
				Mercury
				Selenium
				Zinc
Subsurface Soil	**Acetone**	Benzo (a) anthracene	none	Antimony
	4-Methyl-2-Pentanone	Benzo (a) pyrene		Arsenic
		Benzo (b) fluoranthene		Barium
		Benzo (k) fluoranthene		Cadmium
		Carbazole		Chromium
		Chrysene		Copper
		Indeno (1,23-cd) pyrene		**Iron**
		Phenol		Lead
				Mercury
				Nickel
				Selenium
				Zinc
Groundwater	**Acetone**	Benzo (b) fluoranthene	none	Antimony
	Benzene	**Bis (2-ethylhexyl) phthalate**		Arsenic
	2-Butanone	Naphthalene		Barium
	Carbon Disulfide	Phenol		Beryllium*
	Chlorobenzene			Cadmium
	Chloroform			Copper*
	cis-1,2-Dichloroethene			**Chloride**
	trans-1,2-Dichloroethene			Chromium
	1,2-Dichloropropane			**Iron**
	Methylene Chloride			Lead
	4-Methyl-2-Pentanone			Manganese
	Toluene			Mercury*
	Vinyl Chloride			Nickel
	Xylenes, Total			Selenium*
				Sodium
				Sulfate

Notes:

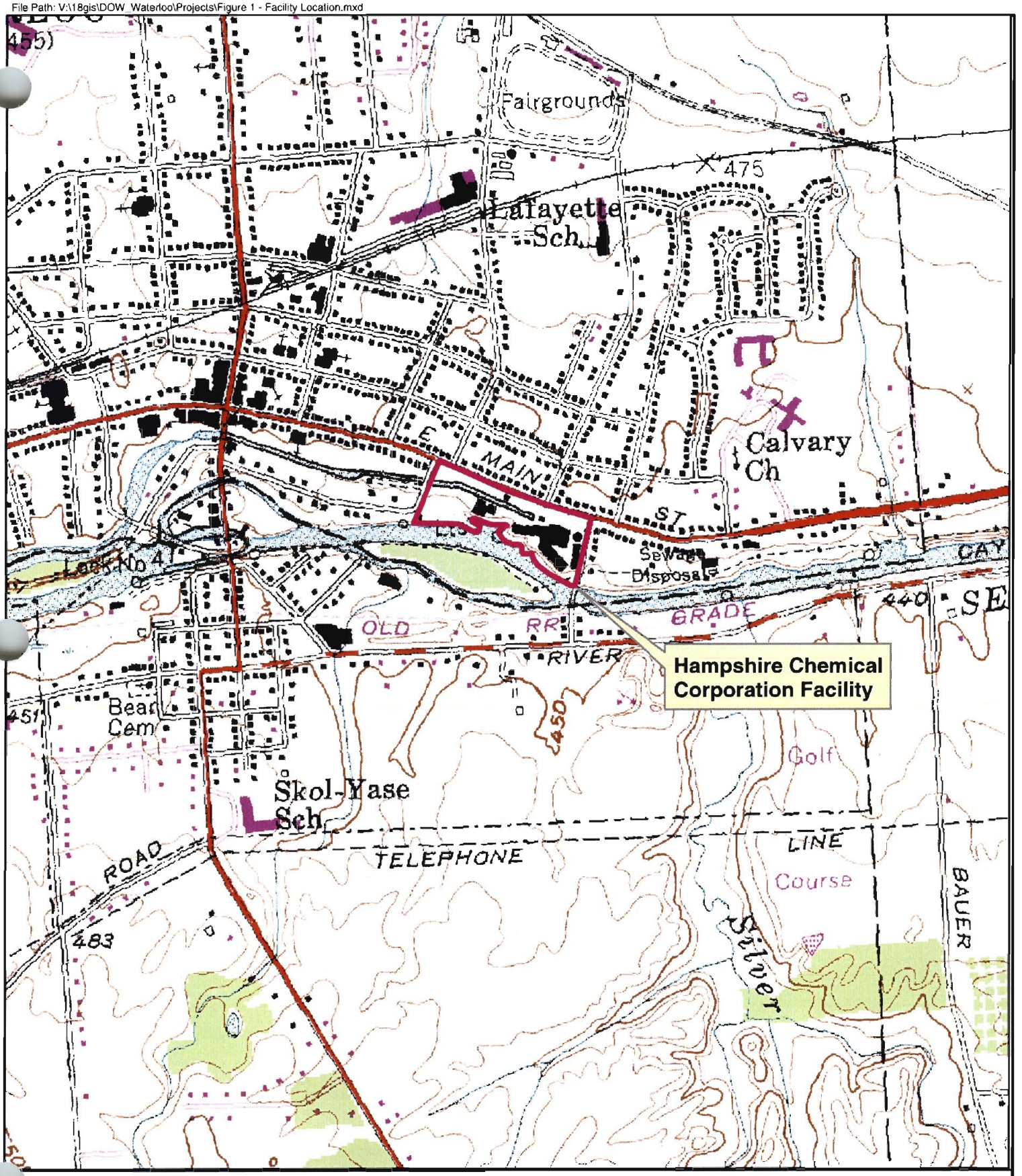
Compounds and analytes listed exceed the TAGM 4046 screening level (or Facility background) or the Class GA groundwater standard.

Bold indicates that the analyte is attributable to releases from one or more of the SWMUs or AOCs at the Facility.

* indicates that the analyte was only present above standards in highly turbid, unfiltered samples collected points from temporary geoprobe sampling

Figures

File Path: V:\18gis\DOW_Waterloo\Projects\Figure 1 - Facility Location.mxd



N

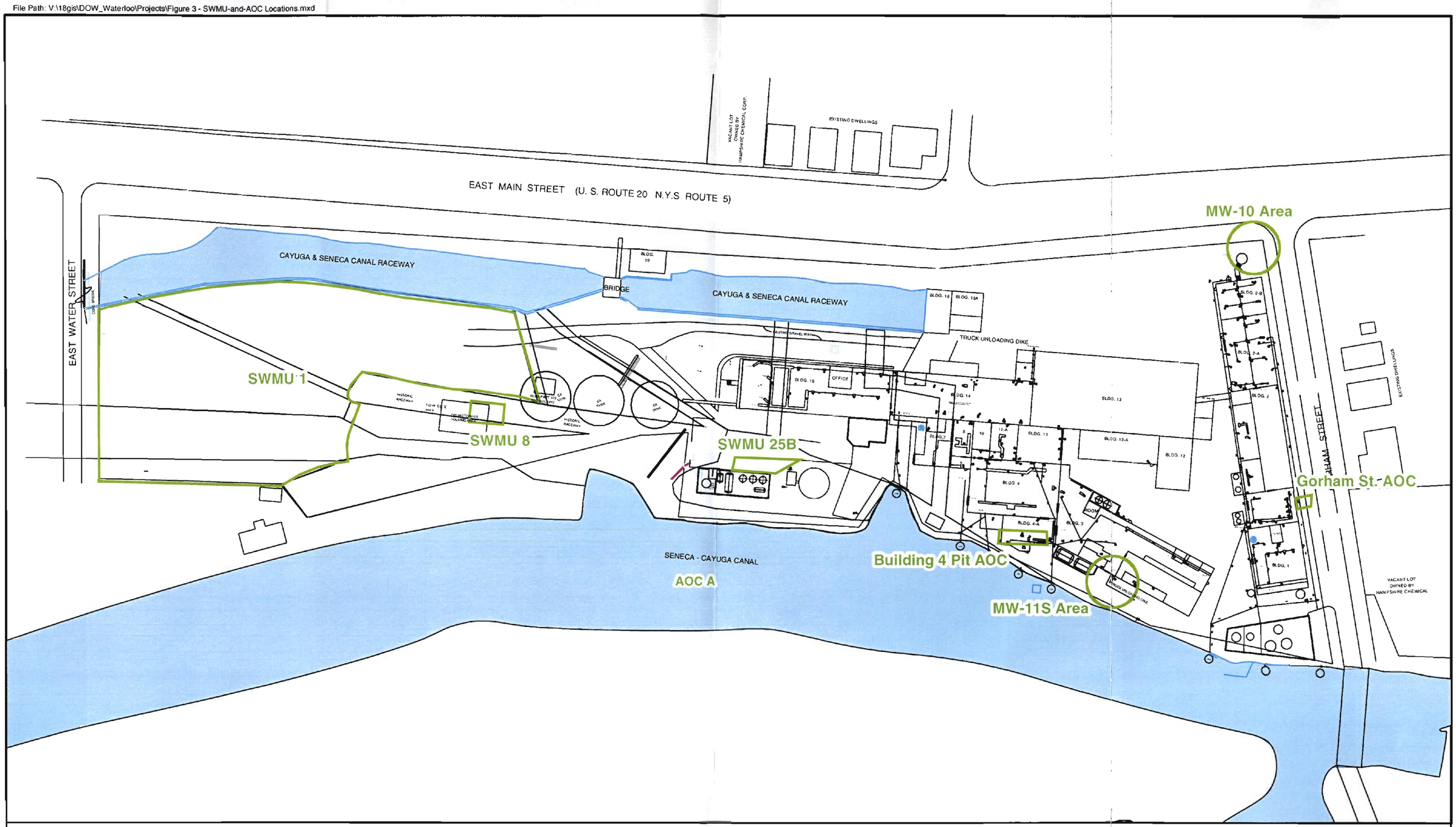
500 250 0 500 1,000 Feet

Modified from USGS 7.5 minute Quadrangle (Seneca Falls, NY)

Figure 1
Facility Location Map
Hampshire Chemical Corporation Facility
Waterloo, New York

HILL

File Path: V:\18gis\DOW_Waterloo\Projects\Figure 3 - SWMU-and-AOC Locations.mxd



LEGEND

- SWMU/AOC Locations
- Outfalls
- Buildings
- Waterbodies/Canals
- Edge of Pavement

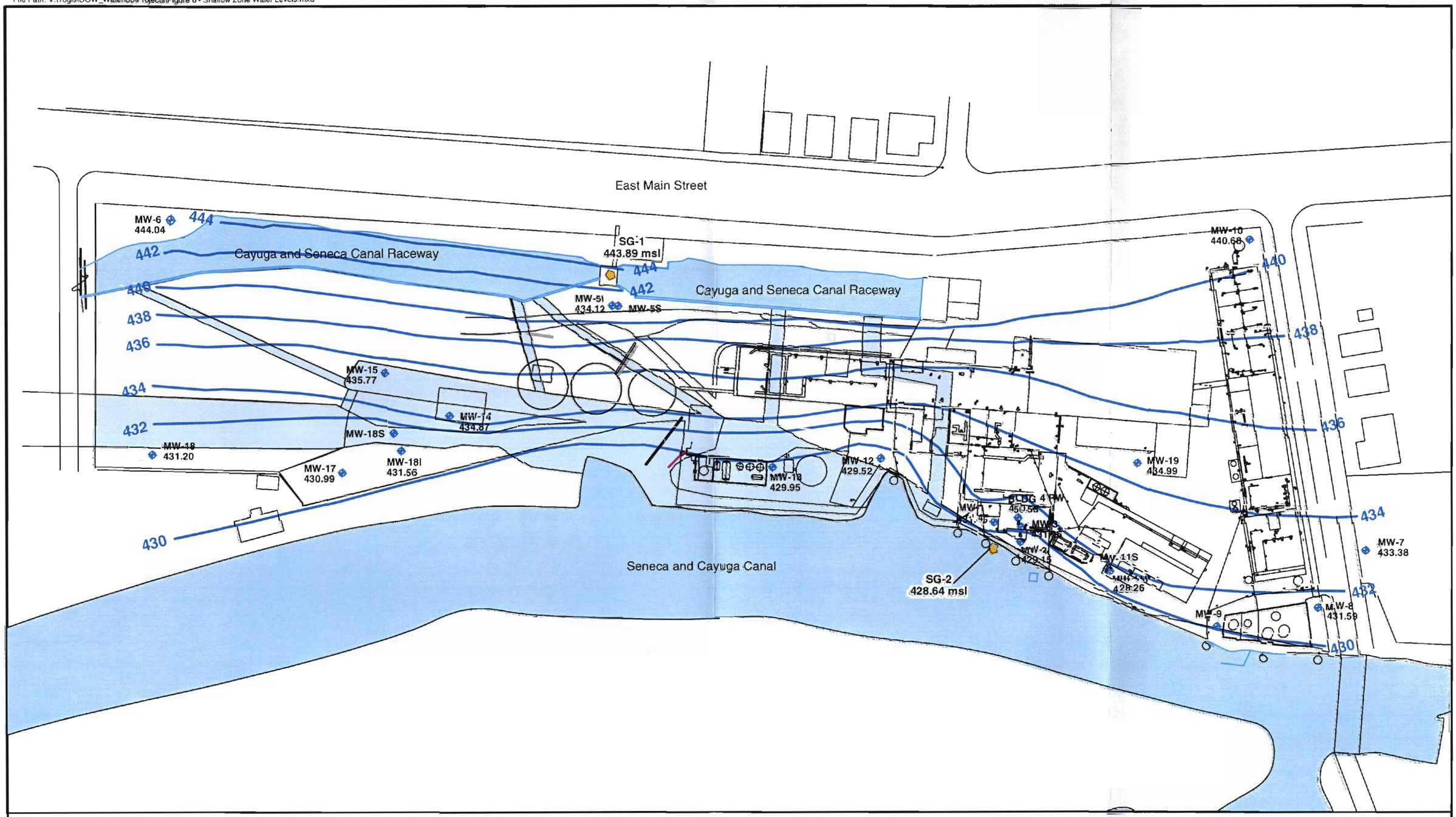
N

50 25 0 50 100 150 200 Feet

Figure 2
SWMU/AOC Locations
Hampshire Chemical Corporation Facility
Waterloo, New York

HILL

File Path: V:\18gis\DOW_Waterloo\Projects\Figure 6 - Shallow Zone Water Levels.mxd



LEGEND

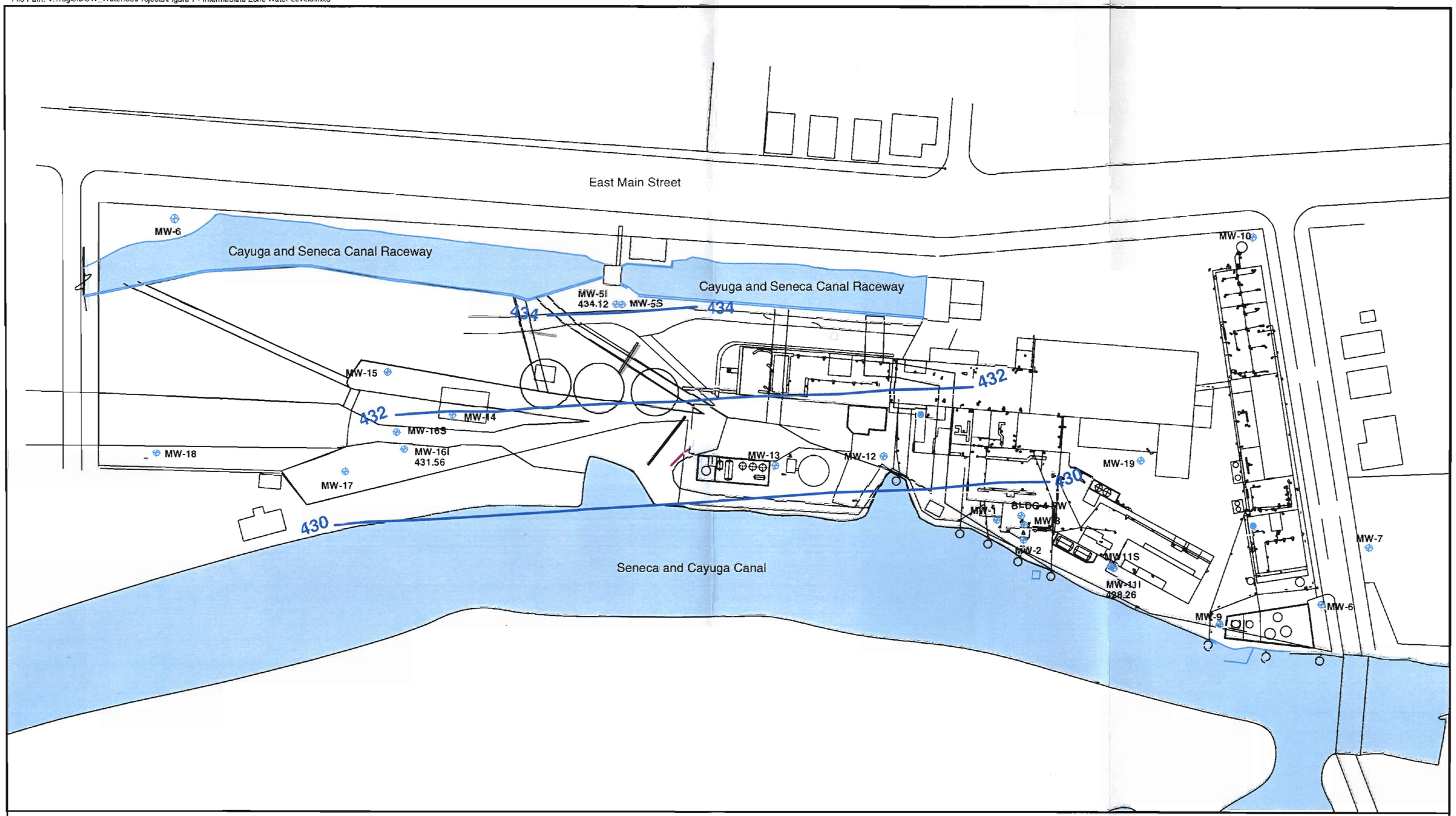
- Monitoring Well Location
- Outfalls
- Buildings
- Waterbodies/Canals
- Edge of Pavement
- Shallow Zone Water Levels (dashed where inferred)
- Historic Raceway

Note: Water Elevations were Measured on April 4, 2004
Groundwater flow appears to be towards the south.

Figure 3
Shallow Groundwater Potentiometric Surface Contour Map
Hampshire Chemical Corporation Facility
Waterloo, New York

HILL

File Path: V:\18gis\DOW_Waterloo\Projects\Figure 7 - Intermediate Zone Water Levels.mxd



LEGEND

- Monitoring Well Location
- Outfalls
- Buildings
- Waterbodies/Canals
- Edge of Pavement
- Intermediate Zone Water Levels (dashed where inferred)

Note: Water Elevation swere Measured on April 4, 2004
Groundwater flow appears to be towards the south.

N

50 25 0 50 100 150
Feet

Figure 4
Intermediate Zone Potentiometric Elevation Levels
Hampshire Chemical Corporation Facility
Waterloo, New York

HILL

File Path: V:\18gis\DOW_Waterloo\Projects\Figure 5 - All Investigation Sample Locations.mxd

East Main Street

Cayuga and Seneca Canal Raceway

Cayuga and Seneca Canal Raceway

Seneca and Cayuga Canal

MW-6
TP-5
HF-2
SG-1
HF-1
MW-5I
MW-5S
HF-4
GW-10D
GW-10C
MW-10
SB-10B
HF-3
SB-10A
Landfill 1
TP-4
TP-9
Landfill 2
SB-4
TP-6
TP-7
MW-15
SB-3B
Landfill 3
SB-3A
SB-3
MW-14
MW-16S
TP-8
TP-3
TP-2
MW-18
MW-16I
MW-17
TP-1
SB-8A
SB-8B
SB-8
SB-7
SB-6
MW-13
SB-10
MW-12
SB-9
SB-5
SB-11
BLDG 14-1
DEPT 68 PW
MW-19
SB-2B
SB-2A
SB-2
SB-1B
SB-1A
SB-12
SB-14
SB-1
SB-13
DEPT 69 PW
MW-7
MW-1
BLDG 4 PW
BLDG 4 SUMP
B01_41904
B02_41904
MW-3
MW-2
SG-2
B02_42004
MW-11S
MW-11I
BLDG 3-1
MW-8
MW-9

LEGEND

- RFI and Site Visit Monitoring Well Location
- Bedrock Production Well
- RFI Groundwater Sampling Location
- RFI Soil Boring Location
- RFI Soil Boring/Groundwater Sample Location
- RFI Test Pit Location
- RFI Background Location
- Previous Investigation Soil Boring Location
- Previous Investigation Test Pit Location
- Outfalls
- Buildings
- Waterbodies/Canals
- Edge of Pavement

N

50 25 0 50 100 150 200 Feet

Figure 5
All Investigation Sample Locations
Hampshire Chemical Corporation Facility
Waterloo, New York

HILL

File Path: V:\18gis\DOW_Waterloo\Projects\Figure 6 - Soil Sample Exceedances for Organic Constituents.mxd

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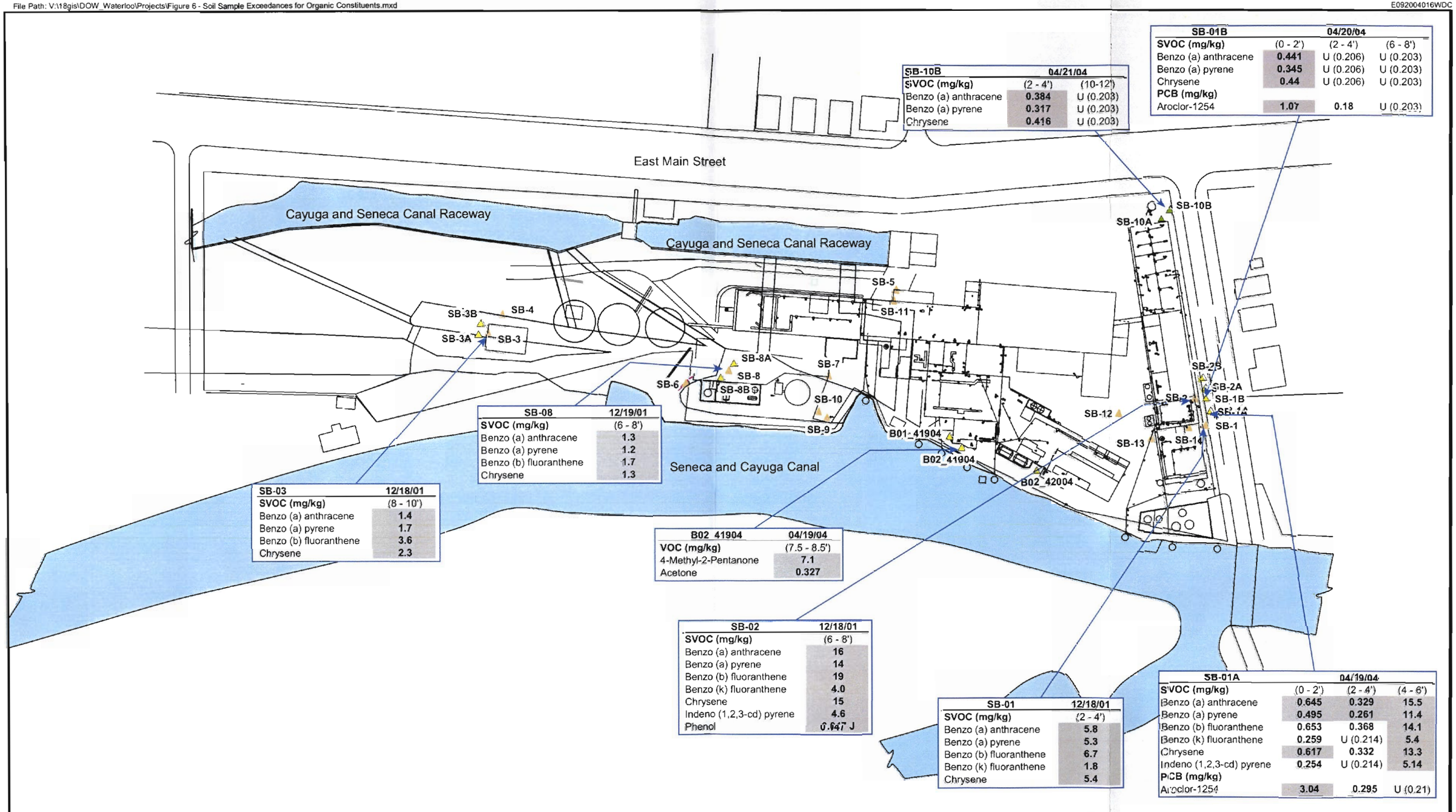

SB-10B	04/21/04	
SVOC (mg/kg)	(2 - 4')	(10-12')
Benzo (a) anthracene	0.384	U (0.203)
Benzo (a) pyrene	0.317	U (0.203)
Chrysene	0.416	U (0.203)

SB-01B	04/20/04		
SVOC (mg/kg)	(0 - 2')	(2 - 4')	(6 - 8')
Benzo (a) anthracene	0.441	U (0.206)	U (0.203)
Benzo (a) pyrene	0.345	U (0.206)	U (0.203)
Chrysene	0.44	U (0.206)	U (0.203)
PCB (mg/kg)			
Aroclor-1254	1.07	0.18	U (0.203)

SB-08	12/19/01
SVOC (mg/kg)	(6 - 8')
Benzo (a) anthracene	1.3
Benzo (a) pyrene	1.2
Benzo (b) fluoranthene	1.7
Chrysene	1.3

SB-03	12/18/01
SVOC (mg/kg)	(8 - 10')
Benzo (a) anthracene	1.4
Benzo (a) pyrene	1.7
Benzo (b) fluoranthene	3.6
Chrysene	2.3

B02_41904	04/19/04
VOC (mg/kg)	(7.5 - 8.5')
4-Methyl-2-Pentanone	7.1
Acetone	0.327

SB-02	12/18/01
SVOC (mg/kg)	(6 - 8')
Benzo (a) anthracene	16
Benzo (a) pyrene	14
Benzo (b) fluoranthene	19
Benzo (k) fluoranthene	4.0
Chrysene	15
Indeno (1,2,3-cd) pyrene	4.6
Phenol	0.647 J

SB-01	12/18/01
SVOC (mg/kg)	(2 - 4')
Benzo (a) anthracene	5.8
Benzo (a) pyrene	5.3
Benzo (b) fluoranthene	6.7
Benzo (k) fluoranthene	1.8
Chrysene	5.4

SB-01A	04/19/04		
SVOC (mg/kg)	(0 - 2')	(2 - 4')	(4 - 6')
Benzo (a) anthracene	0.645	0.329	15.5
Benzo (a) pyrene	0.495	0.261	11.4
Benzo (b) fluoranthene	0.653	0.368	14.1
Benzo (k) fluoranthene	0.259	U (0.214)	5.4
Chrysene	0.617	0.332	13.3
Indeno (1,2,3-cd) pyrene	0.254	U (0.214)	5.14
PCB (mg/kg)			
Aroclor-1254	3.04	0.295	U (0.21)

LEGEND

- RFI Soil Boring Location
- Previous Investigation Soil Boring Location
- RFI Soil Boring/Groundwater Sample Location
- Outfalls
- Buildings
- Waterbodies/Canals
- Edge of Pavement

Note: 1. Analytical Values Greater than TAGM 4046 screening levels are Shaded
2. Field duplicates are Not Shown

N

60 30 0 60 120 180 240 Feet

Figure 6
Soil Sample Exceedances for Organic Constituents
Hampshire Chemical Corporation Facility
Waterloo, New York

CH2MHILL

File Path: V:\18gis\DOW_Waterloo\Projects\Figure 7 - Soil Sample Exceedances for Inorganic Constituents.mxd

E092004016WDC

SB-10A	04/20/04	
Inorganics (mg/kg)	(4 - 6')	(10 - 12')
Arsenic	27.6	1.96
Calcium	74,300	33,500
Zinc	127	55.6

SB-10B	04/21/04		
Inorganics (mg/kg)	(2 - 4')	(2 - 4')	(10 - 12')
Magnesium	1,670	1,830	19,700

SB-02	12/18/01
Inorganics (mg/kg)	(6 - 8')
Arsenic	50
Cadmium	6.2
Chromium	60 J
Copper	92
Iron	250,000
Nickel	52
Selenium	16 J
Zinc	2,000

East Main Street

Cayuga and Seneca Canal Raceway

Cayuga and Seneca Canal Raceway

SB-02B	04/20/04		
Inorganics (mg/kg)	(0 - 2')	(2 - 4')	(6 - 8')
Arsenic	34.4	6.92	2.07
Chromium	25.7	64.8	19.6
Copper	31.1	22	8.71
Zinc	147	73.5	314

SB-02A	04/20/04		
Inorganics (mg/kg)	(0 - 2')	(2 - 4')	(6 - 8')
Chromium	21.4	220	27.7
Zinc	80.6	66.5	74.4

SB-04	12/18/01
Inorganics (mg/kg)	(4 - 6')
Cadmium	1.6
Copper	90
Lead	450 J
Mercury	1.4
Zinc	570

SB-03B	04/21/04		
Inorganics (mg/kg)	(1 - 2')	(3 - 4')	(8 - 9')
Arsenic	10.3	6.3	5.51
Calcium	184,000	42,300	59,700
Copper	32	48.3	42.5
Magnesium	11,100	14,400	17,700
Zinc	67.7	218	108

SB-03A	04/21/04		
Inorganics (mg/kg)	(0 - 2')	(2 - 4')	(6 - 8')
Calcium	120,000	54,500	55,800
Copper	20.2	28	17.6
Iron	9,050	20,600	15,300
Magnesium	29,100	17,400	14,200
Nickel	11.6	40	14.4
Zinc	239	80.4	161

SB-03	12/18/01
Inorganics (mg/kg)	(8 - 10')
Arsenic	21
Barium	1,400
Cadmium	3.3
Chromium	46 J
Copper	530
Iron	41,000
Lead	970 J
Mercury	29.3
Selenium	3.2 J
Zinc	1,100

SB-06	12/19/01
Inorganics (mg/kg)	(4 - 6')
Cadmium	1
Copper	73
Zinc	190

SB-08B	04/20/04	
Inorganics (mg/kg)	(2 - 4')	(5 - 6')
Cadmium	U (0.541)	2.41
Copper	10.4	322
Lead	4.61	347
Magnesium	21,100	7,170
Mercury	U (0.271)	3.78
Zinc	30.5	857

SB-08	12/19/01
Inorganics (mg/kg)	(6 - 8')
Arsenic	56
Cadmium	5.3
Chromium	65 J
Copper	1,100
Iron	220,000
Lead	860 J
Mercury	28.8
Nickel	52
Selenium	12 J
Zinc	480

SB-08A	04/20/04	
Inorganics (mg/kg)	(2 - 4')	(4 - 6')
Calcium	63,300	94,400
Magnesium	25,600	25,000

B01_41904	04/19/04
Inorganics (mg/kg)	(9.5 - 10.5')
Sodium	4,520
Zinc	2,000

B02_41904	04/19/04
Inorganics (mg/kg)	(7.5 - 8.5')
Cadmium	5.63
Copper	43.8
Mercury	7.04
Sodium	4,050
Zinc	194

B02_42004	04/20/04	
Inorganics (mg/kg)	(6 - 8')	(7 - 9')
Calcium	103,000	71,500
Magnesium	14,800	23,400

SB-01	12/19/01
Inorganics (mg/kg)	(2 - 4')
Copper	32
Zinc	86

SB-01A	04/19/04		
Inorganics (mg/kg)	(0 - 2')	(2 - 4')	(4 - 6')
Arsenic	21.8	5.29	5.23
Cadmium	1.13	0.628	0.738
Calcium	88,300	23,400	17,900
Chromium	36.5	17.8	18.9
Copper	63	33.2	31.8
Lead	252	68.3	75.1
Zinc	905	195	212

SB-01B	04/20/04		
Inorganics (mg/kg)	(0 - 2')	(2 - 4')	(6 - 8')
Arsenic	13.8	7.09	3.16
Copper	32.5	23.9	22.4
Zinc	112	117	111

SB-10A, SB-10B, SB-2B, SB-2A, SB-2, SB-1B, SB-1A, SB-1, SB-25, SB-14, SB-13, SB-12, SB-11, SB-5, SB-7, SB-10, SB-9, SB-8A, SB-8, SB-8B, SB-6, SB-4, SB-3B, SB-3A, SB-3, B01_41904, B02_41904, B02_42004

LEGEND

- RFI Soil Boring Location
- Previous Investigation Soil Boring Location
- RFI Soil Boring/Groundwater Sample Location
- Outfalls
- Buildings
- Waterbodies/Canals
- Edge of Pavement

Note: 1. Analytical Values Greater than Screening Criteria are Shaded
2. Field duplicates are Not Shown

N

60 30 0 60 120 180 240 Feet

Figure 7
Soil Sample Exceedances for Inorganic Constituents
Hampshire Chemical Corporation Facility
Waterloo, New York

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File Path: V:\18gis\DOW Waterloo\Projects\Figure 9 - Groundwater Sample Exceedances For Organic Constituents.mxd

E092004016WDC

East Main Street

Cayuga and Seneca Canal Raceway

Cayuga and Seneca Canal Raceway

Seneca and Cayuga Canal

MW-6

MW-5I

MW-5S

Landfill 1

MW-15

MW-14

MW-16S

MW-16I

MW-18

MW-17

MW-13

DEPT 68 PW

MW-12

MW-19

BLDG 4 PW

BLDG 4 SUMP

MW-1

MW-3

MW-2

MW-11S

MW-11I

DEPT 69 PW

MW-7

MW-9

MW-8

GW-10D

GW-10C

MW-10

SB-10B

SB-10A

GW-10C	04/22/04
VOC (ug/l)	
Toluene	57.6

GW-10D	04/22/04
VOC (ug/l)	
Toluene	6.23

MW-10	01/21/02	11/06/02	04/22/04
VOC (ug/l)			
Toluene	10	0.46 J	U (1.0)

Landfill	04/20/04
VOC (ug/l)	
Acetone	194

MW-17	01/22/02	04/22/04
VOC (ug/l)		
Acetone	75 J	U (10)

MW-01	01/22/02	11/06/02	04/23/04
VOC (ug/l)			
Chloroform	U (0.50)	U (0.50)	146
Toluene	0.13 J	0.14 J	19.3
SVOC (ug/l)			
Bis (2-ethylhexyl) phthalate	UJ (10)	NA	12.1

MW-02	01/22/02	11/06/02	04/23/04
VOC (ug/l)			
Acetone	190 J	U (2,500)	216
Carbon Disulfide	160	200	216
Chloroform	51	83 J	88.1
Toluene	21 J	29 J	19
SVOC (ug/l)			
Bis (2-ethylhexyl) phthalate	UJ (10)	NA	19.2

MW-03	01/23/02	11/05/02	04/23/04
VOC (ug/l)			
1,2-Dichloropropane	U (50)	2.5 J	1.77
Benzene	U (50)	U (10)	1.75
Chlorobenzene	U (50)	6.0 J	5.66
cis-1,2-Dichloroethylene	12 J	11	9.31
Toluene	130	83	35.7
Vinyl chloride	U (50)	U (20)	2.46
Xylenes, Total	U (50)	5.2 J	5.05
SVOC (ug/l)			
Bis (2-ethylhexyl) phthalate	U (82)	NA	14.9

MW-11S	1/23/02	04/22/04
SVOC (ug/l)		
Bis (2-ethylhexyl) phthalate	U (10)	7.92
Phenol	29	U (5.1)

Bldg 4 Sump	01/24/02	11/04/02	04/22/04
VOC (ug/l)			
2-Butanone	220 J	U (250)	U (100)
Acetone	69 J	U (250)	U (100)
Chloroform	29	83	120
Methylene chloride	U (12)	12 J	U (20)
Toluene	4.5 J	9.9 J	U (10)
SVOC (ug/l)			
Bis (2-ethylhexyl) phthalate	U (10)	NA	129

LEGEND

- RFI and Site Visit Monitoring Well Location
- RFI Groundwater Sampling Location
- RFI Soil Boring/Groundwater Sample Location
- RFI Test Pit Location
- Outfalls
- Buildings
- Waterbodies/Canals
- Edge of Pavement

Note: 1. Analytical Values Greater than the Class GA standards or guidelines are Shaded
2. Field duplicates are Not Shown
3. NA = not analyzed
4. Only Dates Where Exceedances were Observed are Shown.

N

60 30 0 60 120 180 240 Feet

Figure 8
Groundwater Sample Exceedances For Organic Constituents
Hampshire Chemical Corporation Facility
Waterloo, New York

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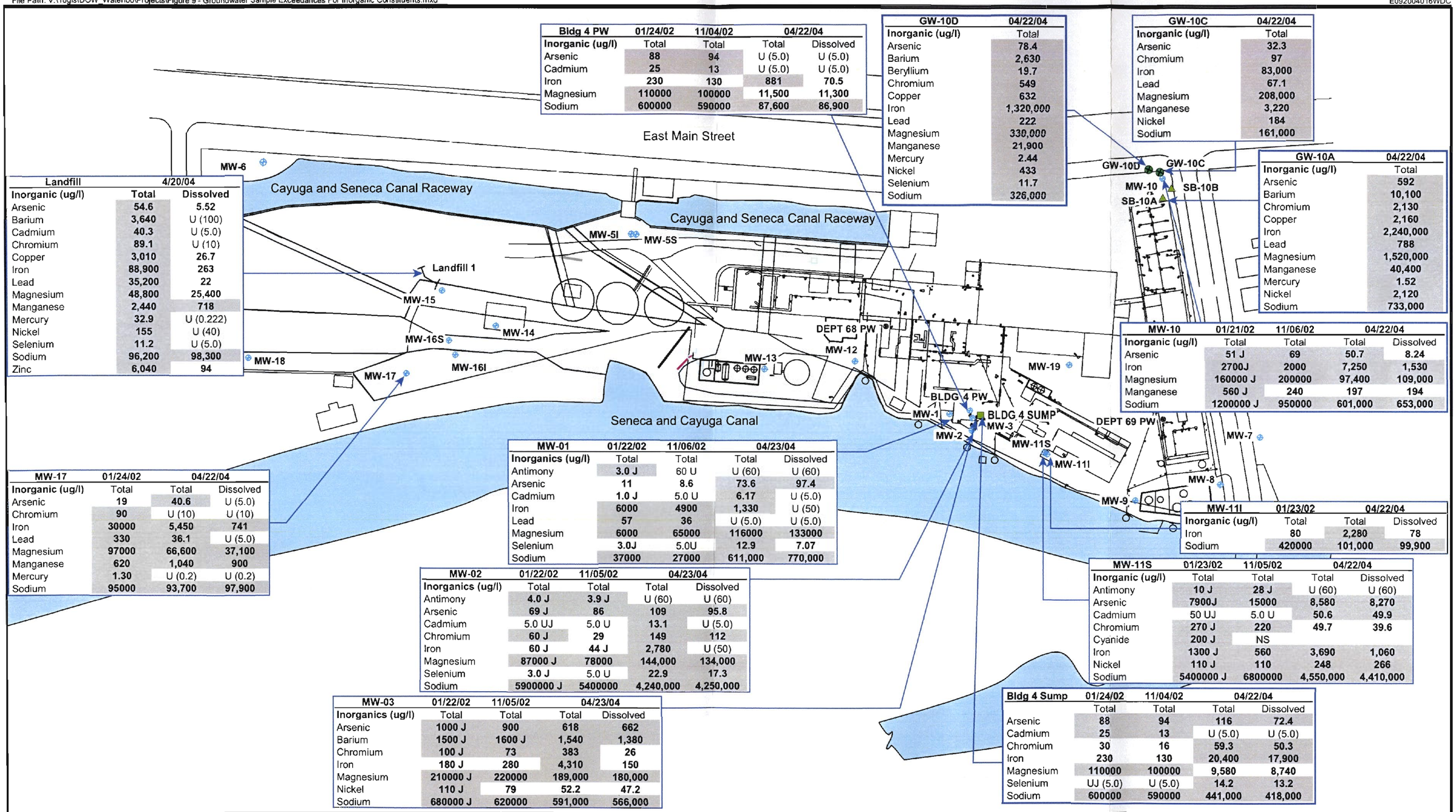
File Path: V:\18gis\DOW_Waterloo\Projects\Figure 9 - Groundwater Sample Exceedances For Inorganic Constituents.mxd

E092004016WDC



Landfill	4/20/04	
Inorganic (ug/l)	Total	Dissolved
Arsenic	54.6	5.52
Barium	3,640	U (100)
Cadmium	40.3	U (5.0)
Chromium	89.1	U (10)
Copper	3,010	26.7
Iron	88,900	263
Lead	35,200	22
Magnesium	48,800	25,400
Manganese	2,440	718
Mercury	32.9	U (0.222)
Nickel	155	U (40)
Selenium	11.2	U (5.0)
Sodium	96,200	98,300
Zinc	6,040	94

Bldg 4 PW	01/24/02	11/04/02	04/22/04	
Inorganic (ug/l)	Total	Total	Total	Dissolved
Arsenic	88	94	U (5.0)	U (5.0)
Cadmium	25	13	U (5.0)	U (5.0)
Iron	230	130	881	70.5
Magnesium	110000	100000	11,500	11,300
Sodium	600000	590000	87,600	86,900

GW-10D	04/22/04
Inorganic (ug/l)	Total
Arsenic	78.4
Barium	2,630
Beryllium	19.7
Chromium	549
Copper	632
Iron	1,320,000
Lead	222
Magnesium	330,000
Manganese	21,900
Mercury	2.44
Nickel	433
Selenium	11.7
Sodium	326,000

GW-10C	04/22/04
Inorganic (ug/l)	Total
Arsenic	32.3
Chromium	97
Iron	83,000
Lead	67.1
Magnesium	208,000
Manganese	3,220
Nickel	184
Sodium	161,000

GW-10A	04/22/04
Inorganic (ug/l)	Total
Arsenic	592
Barium	10,100
Chromium	2,130
Copper	2,160
Iron	2,240,000
Lead	788
Magnesium	1,520,000
Manganese	40,400
Mercury	1.52
Nickel	2,120
Sodium	733,000

MW-10	01/21/02	11/06/02	04/22/04	
Inorganic (ug/l)	Total	Total	Total	Dissolved
Arsenic	51 J	69	50.7	8.24
Iron	2700J	2000	7,250	1,530
Magnesium	160000 J	200000	97,400	109,000
Manganese	560 J	240	197	194
Sodium	1200000 J	950000	601,000	653,000

MW-17	01/24/02	04/22/04	
Inorganic (ug/l)	Total	Total	Dissolved
Arsenic	19	40.6	U (5.0)
Chromium	90	U (10)	U (10)
Iron	30000	5,450	741
Lead	330	36.1	U (5.0)
Magnesium	97000	66,600	37,100
Manganese	620	1,040	900
Mercury	1.30	U (0.2)	U (0.2)
Sodium	95000	93,700	97,900

MW-01	01/22/02	11/06/02	04/23/04	
Inorganics (ug/l)	Total	Total	Total	Dissolved
Antimony	3.0 J	60 U	U (60)	U (60)
Arsenic	11	8.6	73.6	97.4
Cadmium	1.0 J	5.0 U	6.17	U (5.0)
Iron	6000	4900	1,330	U (50)
Lead	57	36	U (5.0)	U (5.0)
Magnesium	6000	65000	116000	133000
Selenium	3.0J	5.0U	12.9	7.07
Sodium	37000	27000	611,000	770,000

MW-11I	01/23/02	04/22/04	
Inorganic (ug/l)	Total	Total	Dissolved
Iron	80	2,280	78
Sodium	420000	101,000	99,900

MW-02	01/22/02	11/05/02	04/23/04	
Inorganics (ug/l)	Total	Total	Total	Dissolved
Antimony	4.0 J	3.9 J	U (60)	U (60)
Arsenic	69 J	86	109	95.8
Cadmium	5.0 UJ	5.0 U	13.1	U (5.0)
Chromium	60 J	29	149	112
Iron	60 J	44 J	2,780	U (50)
Magnesium	87000 J	78000	144,000	134,000
Selenium	3.0 J	5.0 U	22.9	17.3
Sodium	5900000 J	5400000	4,240,000	4,250,000

MW-11S	01/23/02	11/05/02	04/22/04	
Inorganic (ug/l)	Total	Total	Total	Dissolved
Antimony	10 J	28 J	U (60)	U (60)
Arsenic	7900J	15000	8,580	8,270
Cadmium	50 UJ	5.0 U	50.6	49.9
Chromium	270 J	220	49.7	39.6
Cyanide	200 J	NS		
Iron	1300 J	560	3,690	1,060
Nickel	110 J	110	248	266
Sodium	5400000 J	6800000	4,550,000	4,410,000

MW-03	01/22/02	11/05/02	04/23/04	
Inorganics (ug/l)	Total	Total	Total	Dissolved
Arsenic	1000 J	900	618	662
Barium	1500 J	1600 J	1,540	1,380
Chromium	100 J	73	383	26
Iron	180 J	280	4,310	150
Magnesium	210000 J	220000	189,000	180,000
Nickel	110 J	79	52.2	47.2
Sodium	680000 J	620000	591,000	566,000

Bldg 4 Sump	01/24/02	11/04/02	04/22/04	
	Total	Total	Total	Dissolved
Arsenic	88	94	116	72.4
Cadmium	25	13	U (5.0)	U (5.0)
Chromium	30	16	59.3	50.3
Iron	230	130	20,400	17,900
Magnesium	110000	100000	9,580	8,740
Selenium	UJ (5.0)	U (5.0)	14.2	13.2
Sodium	600000	590000	441,000	418,000

LEGEND

- RFI and Site Visit Monitoring Well Location
- RFI Groundwater Sampling Location
- RFI Soil Boring/Groundwater Sample Location
- RFI Test Pit Location
- Outfalls
- Buildings
- Waterbodies/Canals
- Edge of Pavement

Note: 1. Analytical Values Greater than the Class GA standards or guidelines are Shaded
2. Field Duplicates are Not Shown
3. Only Dates Where Exceedances were Observed are Shown

N

60 30 0 60 120 180 240 Feet

Figure 9
Groundwater Sample Exceedances For Inorganic Constituents
Hampshire Chemical Corporation Facility
Waterloo, New York

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Appendix A

Field Logs (on compact disc)

WELL PURGE AND SAMPLING FIELD SHEET

CH2MHILL

PROJECT# **316024.01.FW**

WELL NUMBER:	MW-11S	**SITE:**	**DOW-Waterloo**			
FIELD CREW:	R.Rech/P.Weber				(leave blank if on previous page)	
DEPTH TO WATER (FT):	1.61	CASING DIAMETER		GAL/FT OF CASING		
WELL DEPTH (FT):	- 13.7	**2 IN.**	X	**0.1632**		
WATER COLUMN (FT):	= 12.09	**4 IN.**		**0.6528**		
GAL/FT OF CASING	x 0.1632	**6 IN.**		**1.4688**		
CASING VOLUME (GAL)	= 1.97	**8 IN.**		**2.611**		
NO. OF VOLUMES min.(3)	x 3	**10 IN.**		**4.0797**		
PURGE VOLUME (GAL)	= 5.92	**12 IN.**		**5.8748**		

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. PERIST.	**OTHER:**	**BAILER** : TEFLON	
TIME ON:		BAILER VOL.. (gal)	0.33
FLOW RATE (gpm):		REQUIRED PULLS:	18
PUMP TIME (min):		VOL. PURGED (gals):	5.92
VOL. PURGED (gals):		OTHER:	

FIELD PARAMETERS	**FIELD MEASUREMENTS**					WITHIN10% Y / N
	1st	2nd	3rd	4th	5th	6th
TIME	1450	1500	1513	1521		
VOL. (gal)	0.0	2.5	5.0	7.5		
pH (s.units)	10.69	10.81	10.78	10.71		
TEMP.(C)	12.55	12.17	12.17	12.16		
COND.(umhos/cm)	21.1	19.3	19.0	19.5		

SAMPLE PARAMETERS (**GRAB** OR **COMPOSITE**) :

FILTERED METALS COLLECTED: Y / N 1.0um,0.45um, OTHER:

OBSERVATIONS

COLOR: BROWN

ODOR: LOW

TURBIDITY: HIGH

COMMENTS:

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. **SEE BACK OF SHT Y / N.**

Q.C. SAMPLE TYPE: DUPLICATE , EQUIPMENT BLANK , OTHER :

Q.C. PARAMETERS: VOCs, SVOCs, Tot. Metals, Diss. Metals, Turbidity

SAMPLE DATE/ TIME: 4/22/2004 / @ 1540

SIGNED/SAMPLER:

B

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WELL PURGE AND SAMPLING FIELD SHEET

PROJECT# 316024.01.FW

WELL NUMBER: Building 4 Pit Sump **SITE:** **DOW-Waterloo**

FIELD CREW: R.Rech/P.Weber (leave blank if on previous page)

		CASING DIAMETER		GAL/FT OF CASING	
DEPTH TO WATER (FT):	NA				
WELL DEPTH (FT): -	NA	**2 IN.**		**0.1632**	
WATER COLUMN (FT): =	NA	**4 IN.**		**0.6528**	
GAL/FT OF CASING x	NA	**6 IN.**		**1.4688**	
CASING VOLUME (GAL) =	NA	**8 IN.**		**2.611**	
NO. OF VOLUMES min.(3) x	NA	**10 IN.**		**4.0797**	
PURGE VOLUME (GAL) =	NA	**12 IN.**		**5.8748**	

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. PERIST.	**OTHER:**	**BAILER** : TEFLON
TIME ON:		BAILER VOL.. (gal) 0.33
FLOW RATE (gpm):		REQUIRED PULLS:
PUMP TIME (min):		VOL. PURGED (gals):
VOL. PURGED (gals):		OTHER:

FIELD PARAMETERS	**FIELD MEASUREMENTS**					WITHIN10% Y / N
	1st	2nd	3rd	4th	5th	6th
TIME	1720					
VOL. (gal)	0.0					
pH (s.units)	2.52					
TEMP.(C)	14.18					
COND.(umhos/cm)	3.68					

SAMPLE PARAMETERS (**GRAB** OR **COMPOSITE**) :

FILTERED METALS COLLECTED: Y / N 1.0um,0.45um, OTHER:

OBSERVATIONS

COLOR: CLEAR , AMBER , TAN , BROWN , GREY , MILKY WHITE , OTHER:

ODOR: NONE , LOW , MEDIUM , HIGH , VERY STRONG , H2S , FUEL LIKE , CHEMICAL ?, UNKNOWN

TURBIDITY: NONE , LOW , MEDIUM , HIGH , VERY TURBID. HEAVY SILTS

COMMENTS:

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. **SEE BACK OF SHT Y / N.**

Q.C. SAMPLE TYPE: DUPLICATE , EQUIPMENT BLANK , OTHER :

Q.C. PARAMETERS: VOCs, SVOCs, Tot. Metals, Diss. Metals, Turbidity

SAMPLE DATE/ TIME: 4/22/2004 / @ 1730

SIGNED/SAMPLER:

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WELL PURGE AND SAMPLING FIELD SHEET

PROJECT# 316024.01.FW

WELL NUMBER: MW-10 **SITE:** DOW-Waterloo

FIELD CREW: R.Rech/P.Weber (leave blank if on previous page)

			CASING DIAMETER		GAL/FT OF CASING	
DEPTH TO WATER (FT):		4.98				
WELL DEPTH (FT):	-	13.99	**2 IN.**	X	**0.1632**	
WATER COLUMN (FT):	=	9.01	**4 IN.**		**0.6528**	
GAL/FT OF CASING	x	0.163	**6 IN.**		**1.4688**	
CASING VOLUME (GAL)	=	1.3	**8 IN.**		**2.611**	
NO. OF VOLUMES min.(3)	x	3	**10 IN.**		**4.0797**	
PURGE VOLUME (GAL)	=	3.9	**12 IN.**		**5.8748**	

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. PERIST.	**OTHER:**	**BAILER** : TEFLON
TIME ON:		BAILER VOL.. (gal) 0.33
FLOW RATE (gpm):		REQUIRED PULLS: 12
PUMP TIME (min):		VOL. PURGED (gals): 3.90
VOL. PURGED (gals):		OTHER:

FIELD PARAMETERS	**FIELD MEASUREMENTS**					WITHIN10% Y / N
	1st	2nd	3rd	4th	5th	6th
TIME	1650	1655	1700	1705	1710	1715
VOL. (gal)	0.00	1.25	2.50	3.75	5.00	6.25
pH (s.units)	7.77	7.73	7.66	7.25	7.15	7.15
TEMP.(C)	8.85	8.16	8.58	9.21	9.42	9.45
COND.(umhos/cm)	0.893	0.629	0.688	2.54	3.28	3.26

SAMPLE PARAMETERS (**GRAB** OR **COMPOSITE**) :

FILTERED METALS COLLECTED: Y / N 1.0um,0.45um, OTHER:

OBSERVATIONS

COLOR: CLEAR , AMBER , TAN , BROWN , GREY , MILKY WHITE , OTHER:

ODOR: NONE , LOW , MEDIUM , HIGH , VERY STRONG , H2S , FUEL LIKE , CHEMICAL ?, UNKNOWN

TURBIDITY: NONE , LOW , MEDIUM , HIGH , VERY TURBID. HEAVY SILTS

COMMENTS:

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. **SEE BACK OF SHT Y / N.**

Q.C. SAMPLE TYPE: DUPLICATE , EQUIPMENT BLANK , OTHER :

Q.C. PARAMETERS: VOCs, SVOCs, Tot. Metals, Diss. Metals, Turbidity

SAMPLE DATE/ TIME: 4/22/2004 / @ 1710

SIGNED/SAMPLER:

WELL PURGE AND SAMPLING FIELD SHEET

CH2MHILL

PROJECT# 316024.01.FW

WELL NUMBER: MW-17 **SITE:** DOW-Waterloo

FIELD CREW: R.Rech/P.Weber (leave blank if on previous page)

			CASING DIAMETER		GAL/FT OF CASING	
DEPTH TO WATER (FT):		10.66				
WELL DEPTH (FT):	-	14.74	**2 IN.**		**0.1632**	
WATER COLUMN (FT):	=	4.08	**4 IN.**		**0.6528**	
GAL/FT OF CASING	x	0.163	**6 IN.**		**1.4688**	
CASING VOLUME (GAL)	=	0.66	**8 IN.**		**2.611**	
NO. OF VOLUMES min.(3)	x	3	**10 IN.**		**4.0797**	
PURGE VOLUME (GAL)	=	1.98	**12 IN.**		**5.8748**	

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. PERIST.	**OTHER:**	**BAILER** : TEFLON	
TIME ON:		BAILER VOL.. (gal)	0.33
FLOW RATE (gpm):		REQUIRED PULLS:	6
PUMP TIME (min):		VOL. PURGED (gals):	1.98
VOL. PURGED (gals):		OTHER:	

FIELD PARAMETERS	**FIELD MEASUREMENTS**					WITHIN10% Y / N
	1st	2nd	3rd	4th	5th	6th
TIME	1620	1622	1625	1628		
VOL. (gal)	0.0	0.7	1.4	2.1		
pH (s.units)	7.07	6.94	6.97	6.99		
TEMP.(C)	10.96	10.59	10.47	10.47		
COND.(umhos/cm)	1.59	1.59	1.59	1.59		

SAMPLE PARAMETERS (**GRAB** OR **COMPOSITE**) :

FILTERED METALS COLLECTED: Y / N 1.0um,0.45um, OTHER:

OBSERVATIONS

COLOR: CLEAR , AMBER , TAN , BROWN , GREY , MILKY WHITE , OTHER:

ODOR: NONE , LOW , MEDIUM , HIGH , VERY STRONG , H2S , FUEL LIKE , CHEMICAL ?, UNKNOWN

TURBIDITY: NONE , LOW , MEDIUM , HIGH , VERY TURBID. HEAVY SILTS

COMMENTS:

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. **SEE BACK OF SHT Y / N.**

Q.C. SAMPLE TYPE: DUPLICATE , EQUIPMENT BLANK , OTHER :

Q.C. PARAMETERS: VOCs, SVOCs, Tot. Metals, Diss. Metals, Turbidity

SAMPLE DATE/ TIME: 4/22/2004 / @ 1645

SIGNED/SAMPLER:

WELL PURGE AND SAMPLING FIELD SHEET

CH2MHILL

PROJECT# 316024.01.FW

WELL NUMBER: MW-11I **SITE:** DOW-Waterloo

FIELD CREW: R.Rech/P.Weber (leave blank if on previous page)

			CASING DIAMETER		GAL/FT OF CASING	
DEPTH TO WATER (FT):		5.46				
WELL DEPTH (FT):	-	27.08	**2 IN.**	X	**0.1632**	
WATER COLUMN (FT):	=	21.62	**4 IN.**		**0.6528**	
GAL/FT OF CASING	x	0.1632	**6 IN.**		**1.4688**	
CASING VOLUME (GAL)	=	3.53	**8 IN.**		**2.611**	
NO. OF VOLUMES min.(3)	x	3	**10 IN.**		**4.0797**	
PURGE VOLUME (GAL)	=	10.59	**12 IN.**		**5.8748**	

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. PERIST.	**OTHER:**	**BAILER** : TEFLON
TIME ON:		BAILER VOL.. (gal) 0.33
FLOW RATE (gpm):		REQUIRED PULLS: 32
PUMP TIME (min):		VOL. PURGED (gals): 10.59
VOL. PURGED (gals):		OTHER:

FIELD PARAMETERS	**FIELD MEASUREMENTS**					WITHIN10% Y / N
	1st	2nd	3rd	4th	5th	6th
TIME	1445	1455	1509	1516	1526	1530
VOL. (gal)	0.3	3.5	7.0	10.5	14.0	17.5
pH (s.units)	6.69	10.43	10.28	10.43	10.43	9.29
TEMP.(C)	15.45	11.93	12.10	11.18	11.20	10.74
COND.(umhos/cm)	0.00	1.02	1.28	1.37	1.27	0.63

SAMPLE PARAMETERS (**GRAB** OR **COMPOSITE**) :

FILTERED METALS COLLECTED: Y / N 1.0um,0.45um, OTHER:

OBSERVATIONS

COLOR: MILKY WHITE

ODOR: NONE

TURBIDITY: LOW

COMMENTS:

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. **SEE BACK OF SHT Y / N.**

Q.C. SAMPLE TYPE: DUPLICATE , EQUIPMENT BLANK , OTHER :

Q.C. PARAMETERS: VOCs, SVOCs, Tot. Metals, Diss. Metals, Turbidity

SAMPLE DATE/ TIME: 4/22/2004 / @ 1600

SIGNED/SAMPLER:

CH2MHILL

WELL PURGE AND SAMPLING FIELD SHEET

PROJECT# **316024.01.FW**

WELL NUMBER:	MW-11I	**SITE:**	**DOW-Waterloo**			
FIELD CREW:	R.Rech/P.Weber				(leave blank if on previous page)	
DEPTH TO WATER (FT):	5.46	CASING DIAMETER		GAL/FT OF CASING		
WELL DEPTH (FT):	- 27.08	**2 IN.**		**0.1632**		
WATER COLUMN (FT):	= 21.62	**4 IN.**		**0.6528**		
GAL/FT OF CASING	x 0.1632	**6 IN.**		**1.4688**		
CASING VOLUME (GAL)	= 3.53	**8 IN.**		**2.611**		
NO. OF VOLUMES min.(3)	x 3	**10 IN.**		**4.0797**		
PURGE VOLUME (GAL)	= 10.59	**12 IN.**		**5.8748**		

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. PERIST.	**OTHER:**	**BAILER** : TEFLON	
TIME ON:		BAILER VOL.. (gal)	0.33
FLOW RATE (gpm):		REQUIRED PULLS:	32
PUMP TIME (min):		VOL. PURGED (gals):	10.59
VOL. PURGED (gals):		OTHER:	

FIELD PARAMETERS	**FIELD MEASUREMENTS**					WITHIN10% Y / N
	7th	8th				
TIME	1542	1547				
VOL. (gal)	20	22				
pH (s.units)	8.44	8.23				
TEMP.(C)	10.74	10.49				
COND.(umhos/cm)	0.622	0.612				

SAMPLE PARAMETERS (**GRAB** OR **COMPOSITE**) :

FILTERED METALS COLLECTED: Y / N 1.0um,0.45um, OTHER:

OBSERVATIONS

COLOR: CLEAR , AMBER , TAN , BROWN , GREY , MILKY WHITE , OTHER:

ODOR: NONE , LOW , MEDIUM , HIGH , VERY STRONG , H2S , FUEL LIKE , CHEMICAL ?, UNKNOWN

TURBIDITY: NONE , LOW , MEDIUM , HIGH , VERY TURBID. HEAVY SILTS

COMMENTS:

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. **SEE BACK OF SHT Y / N.**

Q.C. SAMPLE TYPE: DUPLICATE , EQUIPMENT BLANK , OTHER :

Q.C. PARAMETERS: VOCs, SVOCs, Tot. Metals, Diss. Metals, Turbidity

SAMPLE DATE/ TIME: 4/22/2004 / @ 1600

SIGNED/SAMPLER:

WELL PURGE AND SAMPLING FIELD SHEET

CH2MHILL

PROJECT# 316024.01.FW

WELL NUMBER:	MW-1	**SITE:**	**DOW-Waterloo**			
FIELD CREW:	R.Rech/P.Weber				(leave blank if on previous page)	
DEPTH TO WATER (FT):	2.42	CASING DIAMETER		GAL/FT OF CASING		
WELL DEPTH (FT): -	16.5	**2 IN.**		**0.1632**		
WATER COLUMN (FT): =	14.08	**4 IN.**	X	**0.6528**		
GAL/FT OF CASING x	0.65	**6 IN.**		**1.4688**		
CASING VOLUME (GAL) =	9.19	**8 IN.**		**2.611**		
NO. OF VOLUMES min.(3) x	3	**10 IN.**		**4.0797**		
PURGE VOLUME (GAL) =	27.57	**12 IN.**		**5.8748**		

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. PERIST.	**OTHER:**	**BAILER** : TEFLON	
TIME ON:		BAILER VOL.. (gal)	0.33
FLOW RATE (gpm):		REQUIRED PULLS:	84
PUMP TIME (min):		VOL. PURGED (gals):	27.57
VOL. PURGED (gals):		OTHER:	

FIELD PARAMETERS	**FIELD MEASUREMENTS**					WITHIN10% Y / N
	1st	2nd	3rd	4th	5th	6th
TIME	0910	0920	0930	0935		
VOL. (gal)	0.0	9.0	18.0	21.0		
pH (s.units)	7.12	7.16	6.68	7.11		
TEMP.(C)	17.02	15.95	15.58	15.60		
COND.(umhos/cm)	2.78	0.027	6.85	6.79		

SAMPLE PARAMETERS (**GRAB** OR **COMPOSITE**) : Grab

FILTERED METALS COLLECTED: Y / **N** 1.0um,0.45um, OTHER:

OBSERVATIONS

COLOR: CLEAR , AMBER , TAN , BROWN , GREY , MILKY WHITE , OTHER:

ODOR: NONE , LOW , MEDIUM , HIGH , VERY STRONG , H2S , FUEL LIKE , CHEMICAL ?, UNKNOWN

TURBIDITY: NONE , LOW , MEDIUM , HIGH , VERY TURBID. HEAVY SILTS

COMMENTS:

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. **SEE BACK OF SHT Y / N.**

Q.C. SAMPLE TYPE: DUPLICATE , EQUIPMENT BLANK , OTHER :

Q.C. PARAMETERS: VOCs, SVOCs, Tot. Metals, Diss. Metals, Turbidity

SAMPLE DATE/ TIME: 4/23/2004 / @ 0920

SIGNED/SAMPLER:

WELL PURGE AND SAMPLING FIELD SHEET

CH2MHILL

PROJECT# 316024.01.FW

WELL NUMBER:	MW-2	**SITE:**	**DOW-Waterloo**			
FIELD CREW:	R.Rech/P.Weber				(leave blank if on previous page)	
DEPTH TO WATER (FT):	3.88	CASING DIAMETER		GAL/FT OF CASING		
WELL DEPTH (FT):	- 16.5	**2 IN.**	X	**0.1632**		
WATER COLUMN (FT):	= 12.62	**4 IN.**		**0.6528**		
GAL/FT OF CASING	x 0.1632	**6 IN.**		**1.4688**		
CASING VOLUME (GAL)	= 2.06	**8 IN.**		**2.611**		
NO. OF VOLUMES min.(3)	x 3	**10 IN.**		**4.0797**		
PURGE VOLUME (GAL)	= 6.18	**12 IN.**		**5.8748**		

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. PERIST.	**OTHER:**	**BAILER** : TEFLON	
TIME ON:		BAILER VOL.. (gal)	0.33
FLOW RATE (gpm):		REQUIRED PULLS:	19
PUMP TIME (min):		VOL. PURGED (gals):	6.18
VOL. PURGED (gals):		OTHER:	

FIELD PARAMETERS	**FIELD MEASUREMENTS**					WITHIN10% Y / N
	1st	2nd	3rd	4th	5th	6th
TIME	0800	0805	0809	0812		
VOL. (gal)	0.0	2.0	3.5	4.5		
pH (s.units)	6.92	6.77	6.86	6.84		
TEMP.(C)	9.93	11.37	11.10	11.11		
COND.(umhos/cm)	21.0	16.2	17.0	18.2		

SAMPLE PARAMETERS (**GRAB** OR **COMPOSITE**) :

FILTERED METALS COLLECTED: Y / N 1.0um,0.45um, OTHER:

OBSERVATIONS

COLOR: GREY

ODOR: MEDIUM

TURBIDITY: MEDIUM

COMMENTS:

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. **SEE BACK OF SHT Y / N.**

Q.C. SAMPLE TYPE: DUPLICATE , EQUIPMENT BLANK , OTHER :

Q.C. PARAMETERS: VOCs, SVOCs, Tot. Metals, Diss. Metals, Turbidity

SAMPLE DATE/ TIME: 4/23/2004 / @ 0820

SIGNED/SAMPLER:

CH2MHILL

WELL PURGE AND SAMPLING FIELD SHEET

PROJECT# **316024.01.FW**

WELL NUMBER: MW-3 **SITE:** **DOW-Waterloo**

FIELD CREW: R.Rech/P.Weber (leave blank if on previous page)

			CASING DIAMETER		GAL/FT OF CASING	
DEPTH TO WATER (FT):		3.42				
WELL DEPTH (FT):	-	16.5	**2 IN.**	X	**0.1632**	
WATER COLUMN (FT):	=	13.08	**4 IN.**		**0.6528**	
GAL/FT OF CASING	x	0.1632	**6 IN.**		**1.4688**	
CASING VOLUME (GAL)	=	2.13	**8 IN.**		**2.611**	
NO. OF VOLUMES min.(3)	x	3	**10 IN.**		**4.0797**	
PURGE VOLUME (GAL)	=	6.40	**12 IN.**		**5.8748**	

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. PERIST.	**OTHER:**	**BAILER** : TEFLON	
TIME ON:		BAILER VOL.. (gal)	0.33
FLOW RATE (gpm):		REQUIRED PULLS:	19
PUMP TIME (min):		VOL. PURGED (gals):	6.40
VOL. PURGED (gals):		OTHER:	

FIELD PARAMETERS	**FIELD MEASUREMENTS**					WITHIN10% Y / N
	1st	2nd	3rd	4th	5th	6th
TIME	0835	0840	0845	0850		
VOL. (gal)	0.0	3.0	4.5	5.5		
pH (s.units)	6.84	6.76	6.83	6.88		
TEMP.(C)	15.24	17.26	17.49	17.3		
COND.(umhos/cm)	4.73	4.37	4.54	4.62		

SAMPLE PARAMETERS (**GRAB** OR **COMPOSITE**) :

FILTERED METALS COLLECTED: Y / N 1.0um,0.45um, OTHER:

OBSERVATIONS

COLOR: CLEAR

ODOR: NONE , LOW , MEDIUM , HIGH , VERY STRONG , H2S , FUEL LIKE , CHEMICAL ?, UNKNOWN

TURBIDITY: NONE , LOW , MEDIUM , HIGH , VERY TURBID. HEAVY SILTS

COMMENTS:

OTHER: PLEASE USE BACK OF SHT.FOR SKETCHING MAPS ,WELL LOCATION NOTES ECT. **SEE BACK OF SHT Y / N.**

Q.C. SAMPLE TYPE: DUPLICATE , EQUIPMENT BLANK , OTHER : MS/MSD

Q.C. PARAMETERS: VOCs, SVOCs, Tot. Metals, Diss. Metals, Turbidity

SAMPLE DATE/ TIME: 4/23/2004 / @ 0900

SIGNED/SAMPLER:

CH2MHILL

PROJECT NUMBER: 316024.01.FW

WELL NUMBER Production Well

SHEET 1 OF 1

LOW FLOW SAMPLING LOG

Well Number: Production Well

Site: DOW-Waterloo

Field Crew: P.Weber

Date: 4/22/04

Well Depth (ft): 115 ft

DTW (ft): 5.38 ft

Water Column (ft): 109.52 ft.

Well Diameter (in): 6"

Gal. Per ft: 1.46

Well volume (gal): 160

Depth of Screen (ft):

Purge Methodology: 2" Submersible Grundfos Redi-Flow 2

Diameter	Gal. Per Foot	Diameter	Gal. Per Foot
2"	0.163	5"	1.02
3"	0.367	**6"**	**1.469**
4"	0.653	8"	2.611

Field Parameters

Time	DTW (toc)	Flow Rate (gal/min)	Total Volume (gal)	pH (Std. Units)	Temp (C)	Cond. (mS/cm)	ORP (mV)	D.O. [Surface] (mg/L)	Turbidity (NTU)	Color/Odor
Stabilization	<0.3'			0.1	1 C	3%	10 mV	10%	10%	
1155	5.38	3.0	0.0	7.16	8.09	0.546	-	-	32.3	Clear
1200	5.35	3.0	15.0	7.48	8.09	0.544	-	-	33.8	Clear
1215	5.35	3.0	30.0	7.91	7.98	0.544	-	-	39.5	Clear
1220	5.35	3.0	45.0	7.96	7.94	0.546	-	-	37.2	Clear
1225	5.35	3.0	60.0	8.00	7.93	0.546	-	-	35.5	Clear
1230	5.38	3.0	75.0	8.04	7.92	0.547	-	-	36.4	Clear
1235	5.38	2.5	87.5	8.08	7.91	0.547	-	-	36.1	Clear
1240	5.38	2.5	100.0	8.10	7.90	0.548	8.0	12.5	39.2	Clear
1250	5.38	2.5	112.5	8.11	7.93	0.546	9.0	12.5	45.9	Clear
1255	5.39	2.5	125.0	8.11	7.96	0.546	9.0	12.5	44.1	Clear
1300	5.38	2.5	137.5	8.11	7.95	0.547	9.0	12.5	45.9	Clear
1305	5.25	2.0	147.5	8.13	7.93	0.58	14.0	12.5	43.1	Clear
1310	5.28	2.0	157.5	8.12	8.01	0.595	11.0	12.4	38.9	Clear
1315	5.28	2.0	167.5	8.12	8.00	0.599	9.0	12.4	34.2	Clear
1320	5.28	2.0	177.5	8.12	7.99	0.589	9.0	12.4	34.6	Clear
1325	5.28	2.0	187.5	8.12	8.00	0.599	8.0	12.4	34.4	Clear

Remarks: Inability to lower turbidity below 30 NTUs may have been the result of sampling indoors in a porrly lit production area.

Sampling

Depth to Water Before Sampling: Depth sample was acquired:

Sample Methodology: USEPA Low Flow Sampling Methodology

Sample Date/Time: 4/22/04 /@ 1330

Signed Sampler:

Filtered Metals Collected: **Y** / N Filter Size: 0.45 micron in-line filter

Sample Observations:

Parameters: VOCs, SVOCs, Tot. Metals, Diss. Metals

		Background	SWMU/AOC	Combined	Background	SWMU/AOC
ALUMINUM	Min	3,520	1,080	1,080	3,520	1,080
3	Max	30,100	24,100	30,100	30,100	24,100
11	Avg	13,393	10,903	11,303	13,393	10,903
12	St Dev	8,635	5,253	5,897	8,635	5,253
58	Detects	9	47	56	9	47
		Background > SWMU				
ANTIMONY	Min	4.20	0.200	0.200	2.10	0.200
62	Max	8.76	30.0	30.0	4.38	30.0
70	Avg	6.09	6.42	6.37	3.04	3.83
71	St Dev	1.31	4.37	4.02	0.66	4.24
116	Detects	0	12	12	0	12
		NEED HISTOGRAM				
ARSENIC	Min	0.844	0.555	0.555	0.844	0.278
120	Max	5.47	56.0	56.0	5.47	56.0
128	Avg	2.77	9.01	8.01	2.77	9.01
129	St Dev	1.21	11.8	11.1	1.21	11.8
175	Detects	9	46	55	9	46
		NEED HISTOGRAM				
BARIUM	Min	35.8	11.3	11.3	35.8	11.3
179	Max	214	1,400	1,400	214	1,400
187	Avg	93.3	123	118	93.3	123
188	St Dev	56.9	199	184	56.9	199
234	Detects	9	47	56	9	47
		NEED HISTOGRAM				
BERYLLIUM	Min	0.350	0.200	0.200	0.175	0.200
238	Max	1.43	1.10	1.43	1.43	1.10
246	Avg	0.675	0.667	0.669	0.601	0.585
247	St Dev	0.340	0.197	0.222	0.406	0.272
293	Detects	6	33	39	6	33
		Background > SWMU				
CADMIUM	Min	0.350	0.060	0.060	0.175	0.060
297	Max	0.730	8.60	8.60	0.365	8.60
305	Avg	0.507	1.23	1.12	0.254	1.10
306	St Dev	0.109	1.75	1.62	0.055	1.81
352	Detects	0	25	25	0	25
CALCIUM	Min	2,990	1,690	1,690	2,990	1,690
356	Max	70,700	190,000	190,000	70,700	190,000
364	Avg	23,071	46,688	42,892	23,071	46,688

	365	St Dev	27,028	26,808	40,126	27,028	26,808
	411	Detects	9	10	56	9	10
CHROMIUM		Min	7.04	4.92	4.92	7.04	4.92
	415	Max	36.9	220	220	36.9	220
	423	Avg	16.8	25.6	24.2	16.8	25.6
	424	St Dev	9.91	32.2	29.9	9.91	32.2
	470	Detects	9	47	56	9	47
COBALT		Min	4.53	4.00	4.00	2.72	2.43
	474	Max	16.6	15.0	16.6	16.6	15.0
	482	Avg	9.43	8.25	8.44	9.12	7.86
	483	St Dev	4.44	2.58	2.94	4.82	3.15
	529	Detects	8	40	48	8	40
			Background > SWMU				
COPPER		Min	3.39	2.81	2.81	3.39	2.81
	533	Max	26.5	1,100	1,100	26.5	1,100
	541	Avg	14.9	75.4	65.7	14.9	75.4
	542	St Dev	7.51	180	167	7.51	180
	588	Detects	9	47	56	9	47
IRON		Min	4,380	5,000	4,380	4,380	5,000
	610	Max	37,500	250,000	250,000	37,500	250,000
	618	Avg	18,762	27,738	26,295	18,762	27,738
	619	St Dev	10,764	44,849	41,355	10,764	44,849
	665	Detects	9	47	56	9	47
LEAD		Min	4.10	2.97	2.97	4.10	2.97
	669	Max	190	970	970	190	970
	677	Avg	34.0	103	92.2	34.0	103
	678	St Dev	60.2	195	182	60.2	195
	724	Detects	9	47	56	9	47
MAGNESIUM		Min	605	1,570	605	605	1,570
	728	Max	16,200	29,100	29,100	16,200	29,100
	736	Avg	7,169	11,132	10,495	7,169	11,132
	737	St Dev	5,838	6,932	6,878	5,838	6,932
	783	Detects	9	47	56	9	47

MANGANESE	Min	35.5	51.6	35.5	35.5	51.6
787	Max	1,140	990	1,140	1,140	990
795	Avg	454	359	374	454	359
796	St Dev	356	193	226	356	193
842	Detects	9	47	56	9	47
		Background > SWMU				
MERCURY	Min	0.261	0.020	0.020	0.131	0.020
846	Max	0.380	29.3	29.3	0.190	29.3
854	Avg	0.313	1.77	1.54	0.156	1.67
855	St Dev	0.033	5.92	5.44	0.016	5.94
901	Detects	0	20	20	0	20
NICKEL	Min	8.35	5.51	5.51	8.35	5.51
905	Max	35.7	52.0	52.0	35.7	52.0
913	Avg	16.8	20.2	19.6	16.8	20.2
914	St Dev	9.16	10.1	9.91	9.16	10.1
960	Detects	9	47	56	9	47
POTASSIUM	Min	490	500	490	245	273
964	Max	5,160	6,800	6,800	5,160	6,800
972	Avg	2,261	2,366	2,349	2,234	2,353
973	St Dev	1,589	1,475	1,479	1,624	1,492
1019	Detects	8	45	53	8	45
SELENIUM	Min	0.492	0.500	0.492	0.246	0.250
1023	Max	0.775	16.0	16.0	0.388	16.0
1031	Avg	0.629	1.45	1.32	0.314	1.26
1032	St Dev	0.093	2.81	2.59	0.047	2.87
1078	Detects	0	18	18	0	18
SILVER	Min	0.701	0.300	0.300	0.351	0.300
1082	Max	1.46	1.60	1.60	0.73	1.00
1090	Avg	1.01	1.08	1.07	0.51	0.61
1091	St Dev	0.219	0.226	0.224	0	8
1136	Detects	0	8	8	0	8
		Stastically Insignificant Difference				
SODIUM	Min	121	70.0	70.0	73	52.0
1140	Max	449	4,520	4,520	449	4,520
1148	Avg	186	572	510	178	569

	1149	St Dev	102	893	830	109	894
	1195	Detects	8	44	52	8	44
THALLIUM		Min	0.985	0.600	0.600	0.493	0.500
	1199	Max	1.55	2.00	2.00	0.78	2.00
	1207	Avg	1.26	1.18	1.19	0.63	0.70
	1208	StDev	0.186	0.209	0.206	0.093	0.254
	1253	Detects	0	10	10	0	10
VANADIUM		Min	14.9	7.85	7.85	14.9	7.85
	1257	Max	51.6	85.7	85.7	51.6	85.7
	1265	Avg	28.1	28.4	28.4	28.1	28.4
	1266	St Dev	11.9	14.0	13.6	11.9	14.0
	1312	Detects	9	47	56	9	47
			Statistically Insignificant Difference				
ZINC		Min	15.6	20.7	15.6	15.6	20.7
	1316	Max	78.9	10,000	10,000	78.9	10,000
	1324	Avg	44.1	567	483	44.1	567
	1325	St Dev	18.7	1,541	1,423	18.7	1,541
	1371	Detects	9	47	56	9	47

Combined		BINS					
1,080							
30,100							
11,303							
5,897							
56							
0.200		**1**	**2**	**3**	**4**	**5**	**6**
30.0	Background	0	0	0	0	2	2
3.70	SWMU/AOC	6	0	1	1	1	3
3.89	Sitewide	6	0	1	1	3	5
12							
0.278		**5**	**10**	**15**	**20**	**25**	**30**
56.0	Background	8	1	0	0	0	0
8.00	SWMU/AOC	24	13	2	1	3	1
11.1	Sitewide	32	14	2	1	3	1
55							
11.3		**25**	**50**	**75**	**100**	**125**	**150**
1,400	Background	0	3	1	2	1	1
118	SWMU/AOC	3	6	8	10	11	4
184	Sitewide	3	9	9	12	12	5
56							
0.175							
1.43							
0.588							
0.293							
39							
0.060		**0.75**	**1.50**	**2.25**	**3.00**	**3.75**	**4.50**
8.60	Background	9	0	0	0	0	0
0.96	SWMU/AOC	35	3	2	2	1	0
1.68	Sitewide	44	3	2	2	1	0
25							
1,690		**20,000**	**40,000**	**60,000**	**80,000**	**100,000**	**120,000**
190,000	Background	6	0	2	1	0	0
42,892	SWMU/AOC	12	13	8	8	2	1

40,126	Sitewide	18	13	10	9	2	1
56							

4.92		**10**	**20**	**30**	**40**	**50**	**60**
220	Background	2	5	1	1	0	0
24.2	SWMU/AOC	9	16	14	3	1	0
29.9	Sitewide	11	21	15	4	1	0
56							

2.43
16.6
8.06
3.45
48

2.81		**10**	**20**	**30**	**40**	**50**	**60**
1,100	Background	2	5	2	0	0	0
65.7	SWMU/AOC	5	12	10	6	4	2
167	Sitewide	7	17	12	6	4	2
56							

4,380		**10,000**	**20,000**	**30,000**	**40,000**	**50,000**	**60,000**
250,000	Background	2	3	3	1	0	0
26,295	SWMU/AOC	8	18	17	1	1	0
41,355	Sitewide	10	21	20	2	1	0
56							

2.97		**50**	**100**	**150**	**200**	**250**	**300**
970	Background	8	0	0	1	0	0
92.2	SWMU/AOC	26	10	3	3	0	1
182	Sitewide	34	10	3	4	0	1
56							

605		**3,000**	**6,000**	**9,000**	**12,000**	**15,000**	**18,000**
29,100	Background	3	1	2	1	0	2
10,495	SWMU/AOC	6	7	8	5	9	5
6,878	Sitewide	9	8	10	6	9	7
56							

35.5							
1,140							
374							
226							
56							
0.020		**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**1.2**
29.3	Background	0	9	0	0	0	0
1.43	SWMU/AOC	8	30	2	0	0	0
5.47	Sitewide	8	39	2	0	0	0
20							
5.51		**5**	**10**	**15**	**20**	**25**	**30**
52.0	Background	0	2	4	0	1	1
19.6	SWMU/AOC	0	6	11	6	14	5
9.91	Sitewide	0	8	15	6	15	6
56							
245		**500**	**1,000**	**1,500**	**2,000**	**2,500**	**3,000**
6,800	Background	1	2	0	2	1	0
2,334	SWMU/AOC	0	11	6	2	8	7
1,499	Sitewide	1	13	6	4	9	7
53							
0.246		**0.30**	**0.60**	**0.90**	**1.20**	**1.50**	**1.80**
16.0	Background	0	4	5	0	0	0
1.11	SWMU/AOC	0	11	23	5	3	1
2.65	Sitewide	0	15	28	5	3	1
18							
0.300		**0.2**	**0.4**	**0.6**	**0.8**	**1.0**	**1.2**
1.00	Background	0	0	0	2	2	4
0.59	SWMU/AOC	0	1	2	0	3	24
8	Sitewide	0	1	2	2	5	28
8							
52.0		**100**	**200**	**300**	**400**	**500**	**600**
4,520	Background	0	7	1	0	1	0
506	SWMU/AOC	1	12	13	4	3	5

831	Sitewide	1	19	14	4	4	5
52							

0.493		**0.25**	**0.5**	**0.8**	**1.0**	**1.3**	**1.5**
2.00	Background	0	0	0	1	3	4
0.69	SWMU/AOC	0	0	1	0	26	17
0.236	Sitewide	0	0	1	1	29	21
10							

7.85		**10**	**20**	**30**	**40**	**50**	**60**
85.7	Background	0	3	3	1	1	1
28.4	SWMU/AOC	2	9	19	11	3	1
13.6	Sitewide	2	12	22	12	4	2
56							

15.6		**100**	**200**	**300**	**400**	**500**	**600**
10,000	Background	9	0	0	0	0	0
483	SWMU/AOC	21	10	3	2	2	1
1,423	Sitewide	30	10	3	2	2	1
56							

					Background	SWMU/AOC
					3.55	3.03
					4.48	4.38
					4.04	3.97
					0.295	0.276
					9	47
7	**8**	**9**	**10**	**>**	0.62	-0.699
4	0	1	0	0	0.94	1.5
13	16	2	2	1	0.78	0.67
17	16	3	2	1	0.09	0.46
					0	12
35	**40**	**45**	**50**	**>**	-0.074	-0.256
0	0	0	0	0	0.74	1.7
1	0	0	0	2	0.40	0.73
1	0	0	0	2	0.21	0.4
					9	46
175	**200**	**225**	**250**	**>**	1.55	1.05
0	0	1	0	0	2.33	3.15
0	2	1	0	2	1.90	1.93
0	2	2	0	2	0.253	0.336
					9	47
					-0.456	-0.699
					0.16	0.04
					-0.211	-0.197
					0.190	0.146
					6	33
5.25	**6.00**	**6.75**	**7.50**	**>**	-0.456	-1.222
0	0	0	0	0	-0.137	0.93
0	2	1	0	1	-0.304	-0.14
0	2	1	0	1	0.092	0.41
					0	25
140,000	**160,000**	**180,000**	**200,000**	**>**	3.48	3.23
0	0	0	0	0	4.85	5.28
1	0	0	2	0	4.05	4.47

1	0	0	2	0	0.556 9	0.562 10
70	**80**	**90**	**100**	**>**	0.85	0.69
0	0	0	0	0	1.6	2
3	0	0	0	1	1.2	1.3
3	0	0	0	1	0.24 9	0.3 47
					0.66	0.60
					1.2	1.2
					0.93	0.90
					0.21 8	0.14 40
70	**80**	**90**	**100**	**>**	0.53	0.45
0	0	0	0	0	1.4	3
1	1	0	2	4	1.1	1.5
1	1	0	2	4	0.29 9	0 47
70,000	**80,000**	**90,000**	**100,000**	**>**	3.64	3.70
0	0	0	0	0	4.57	5.40
0	0	0	0	2	4.20	4.28
0	0	0	0	2	0.293 9	0.300 47
350	**400**	**450**	**500**	**>**	0.613	0.473
0	0	0	0	0	2.28	2.99
1	0	0	1	2	1.16	1.54
1	0	0	1	2	0.527 9	0.648 47
21,000	**24,000**	**27,000**	**30,000**	**>**	2.78	3.20
0	0	0	0	0	4.21	4.46
2	2	2	1	0	3.68	3.94
2	2	2	1	0	0.472 9	0.333 47

					1.55	1.71
					3.06	3.00
					2.50	2.49
					0.450	0.245
					9	47

1.4	**1.6**	**1.8**	**2.0**	**>**	-0.583	-1.699
0	0	0	0	0	-0.420	1.5
1	2	0	0	4	-0.507	-0.46
1	2	0	0	4	0.044	0.61
					0	20

35	**40**	**45**	**50**	**>**	0.922	0.741
0	1	0	0	0	1.55	1.72
2	0	1	0	2	1.18	1.25
2	1	1	0	2	0.213	0.218
					9	47

3,500	**4,000**	**4,500**	**5,000**	**>**	2.69	2.70
0	2	0	0	1	3.71	3.83
3	3	3	1	3	3.24	3.28
3	5	3	1	4	0.343	0.312
					8	45

2.10	**2.40**	**2.70**	**3.00**	**>**	-0.308	-0.301
0	0	0	0	0	-0.111	1.2
0	0	0	0	4	-0.206	-0.06
0	0	0	0	4	0.065	0.32
					0	18

1.4	**1.6**	**1.8**	**2.0**	**>**	-0.154	-0.523
0	1	0	0	0	0.16	0.20
14	1	1	0	0	0.00	0.02
14	2	1	0	0	0	8
					0	8

700	**800**	**900**	**1,000**	**>**	2.08	1.85
0	0	0	0	0	2.65	3.66
0	0	0	3	12	2.23	2.51

0	0	0	3	12	0.174 8	0.409 44

1.8	**2.0**	**2.3**	**2.5**	**>**	-0.007	-0.222
1	0	0	0	0	0.19	0.30
1	0	1	0	0	0.09	0.06
2	0	1	0	0	0.065 0	0.077 10

70	**80**	**90**	**100**	**>**	1.17	0.895
0	0	0	0	0	1.71	1.93
1	0	1	0	0	1.42	1.41
1	0	1	0	0	0.173 9	0.204 47

700	**800**	**900**	**1,000**	**>**	1.19	1.32
0	0	0	0	0	1.90	4.00
1	0	1	1	10	1.60	2.21
1	0	1	1	10	0.207 9	0.596 47

Combined	Background	SWMU/AOC	Combined			
3.03	3.55	3.03	3.03			
4.48	4.48	4.38	4.48			
3.98	4.04	3.97	3.98			
0.277	0.295	0.276	0.277			
56	9	47	56			
-0.699	0.32	-0.699	-0.699			
1.5	0.64	1.5	1.5			
0.68	0.47	0.44	0.45			
0.43	0.09	0.39	0.36			
12	0	12	12			
-0.256	-0.074	-0.557	-0.557		**-0.25**	**0**
1.7	0.74	1.7	1.7	Background	0	1
0.68	0.40	0.72	0.67	SWMU/AOC	1	0
0.4	0.21	0.4	0.4	Sitewide	1	1
55	9	46	55			
1.05	1.55	1.05	1.05		**1**	**1.25**
3.15	2.33	3.15	3.15	*Background*	0	0
1.92	1.90	1.93	1.92	*SWMU/AOC*	0	2
0.322	0.253	0.336	0.322	*Sitewide*	0	2
56	9	47	56			
-0.699	-0.757	-0.699	-0.757			
0.16	0.16	0.04	0.16			
-0.199	-0.311	-0.287	-0.291			
0.152	0.302	0.228	0.238			
39	6	33	39			
-1.222	-0.757	-1.222	-1.222		**-1.25**	**-1**
0.93	-0.438	0.93	0.93	Background	0	0
-0.17	-0.605	-0.28	-0.33	SWMU/AOC	0	1
0.39	0.092	0.47	0.45	Sitewide	0	1
25	0	25	25			
3.23	3.48	3.23	3.23		**3.25**	**3.5**
5.28	4.85	5.28	5.28	Background	0	2
4.40	4.05	4.47	4.40	SWMU/AOC	1	3

0.530	0.556	0.562	0.530	Sitewide	1	5
56	9	10	56			
0.69	0.85	0.69	0.69		**0.6**	**0.8**
2	1.6	2	2	Background	0	0
1.3	1.2	1.3	1.3	SWMU/AOC	0	3
0.3	0.24	0.3	0.3	Sitewide	0	3
56	9	47	56			
0.60	0.43	0.38	0.38			
1.2	1.2	1.2	1.2			
0.90	0.90	0.85	0.86			
0.15	0.26	0.22	0.22			
48	8	40	48			
0.45	0.53	0.45	0.45		**0.5**	**0.75**
3	1.4	3	3	Background	0	1
1.4	1.1	1.5	1.4	SWMU/AOC	1	1
0	0.29	0	0	Sitewide	1	2
56	9	47	56			
3.64	3.64	3.70	3.64		**3.8**	**4**
5.40	4.57	5.40	5.40	Background	0	0
4.27	4.20	4.28	4.27	SWMU/AOC	0	0
0.297	0.293	0.300	0.297	Sitewide	0	0
56	9	47	56			
0.473	0.613	0.473	0.473		**0.5**	**0.75**
2.99	2.28	2.99	2.99	Background	0	1
1.48	1.16	1.54	1.48	SWMU/AOC	1	4
0.642	0.527	0.648	0.642	Sitewide	1	5
56	9	47	56			
2.78	2.78	3.20	2.78		**2.8**	**3**
4.46	4.21	4.46	4.46	Background	0	0
3.90	3.68	3.94	3.90	SWMU/AOC	0	0
0.368	0.472	0.333	0.368	Sitewide	0	0
56	9	47	56			

1.55	1.55	1.71	1.55			
3.06	3.06	3.00	3.06			
2.49	2.50	2.49	2.49			
0.282	0.450	0.245	0.282			
56	9	47	56			
-1.699	-0.884	-1.699	-1.699		**-1.6**	**-1.2**
1.5	-0.721	1.5	1.5	Background	0	0
-0.47	-0.808	-0.64	-0.66	SWMU/AOC	2	2
0.56	0.044	0.64	0.59	Sitewide	2	2
20	0	20	20			
0.741	0.92	0.74	0.74		**0.8**	**0.9**
1.72	1.6	1.7	1.7	Background	0	0
1.24	1.2	1.3	1.2	SWMU/AOC	1	3
0.217	0.21	0.2	0.22	Sitewide	1	3
56	9	47	56			
2.69	2.39	2.44	2.39		**2.6**	**2.8**
3.83	3.71	3.83	3.83	Background	0	1
3.27	3.21	3.26	3.26	SWMU/AOC	0	6
0.314	0.412	0.337	0.347	Sitewide	0	7
53	8	45	53			
-0.308	-0.609	-0.602	-0.609		**-0.7**	**-0.6**
1.2	-0.412	1.2	1.2	Background	0	0
-0.09	-0.507	-0.25	-0.29	SWMU/AOC	0	0
0.30	0.065	0.43	0.41	Sitewide	0	0
18	0	18	18			
-0.523	-0.455	-0.523	-0.523		**-0.5**	**-0.4**
0.20	-0.14	0.00	0.00	Background	0	0
0.02	-0.30	-0.23	-0.24	SWMU/AOC	0	0
8	0	8	8	Sitewide	0	0
8	0	8	8			
1.85	1.86	1.72	1.72		**2**	**2.2**
3.66	2.65	3.66	3.66	Background	0	6
2.47	2.20	2.50	2.45	SWMU/AOC	1	9

0.394	0.213	0.429	0.416	Sitewide	1	15
52	8	44	52			
-0.222	-0.308	-0.301	-0.308		**-0.2**	**-0.15**
0.30	-0.11	0.30	0.30	Background	0	0
0.07	-0.21	-0.17	-0.18	SWMU/AOC	0	0
0.075	0.065	0.118	0.112	Sitewide	0	0
10	0	10	10			
0.895	1.17	0.895	0.895		**0.9**	**1**
1.93	1.71	1.93	1.93	Background	0	0
1.41	1.42	1.41	1.41	SWMU/AOC	1	1
0.198	0.173	0.204	0.198	Sitewide	1	1
56	9	47	56			
1.19	1.19	1.32	1.19		**1.25**	**1.5**
4.00	1.90	4.00	4.00	Background	1	1
2.11	1.60	2.21	2.11	SWMU/AOC	0	3
0.594	0.207	0.596	0.594	Sitewide	1	4
56	9	47	56			

0.25	0.5	0.75	1	1.25	1.5	1.75	2	>
0	6	2	0	0	0	0	0	0
3	12	12	9	2	5	3	0	0
3	18	14	9	2	5	3	0	0

1.5	1.75	2	2.25	2.5	2.75	3	3.25	>
0	3	3	2	1	0	0	0	0
2	6	17	15	3	1	0	1	0
2	9	20	17	4	1	0	1	0

-0.75	-0.5	-0.25	0	0.25	0.5	0.75	1	>
0	0	7	2	0	0	0	0	0
1	3	14	17	4	2	2	3	0
1	3	21	19	4	2	2	3	1

3.75	4	4.25	4.5	4.75	5	5.25	5.5	>
1	3	0	0	2	1	0	0	0
2	1	3	11	11	11	2	2	0

3	4	3	11	13	12	2	2	1

1	**1.2**	**1.4**	**1.6**	**1.8**	**2**	**2.2**	**2.4**	**>**
2	3	2	2	0	0	0	0	0
6	9	17	7	2	2	0	1	0
8	12	19	9	2	2	0	1	1

1	**1.25**	**1.5**	**1.75**	**2**	**2.25**	**2.5**	**2.75**	**>**
1	5	2	0	0	0	0	0	0
3	8	15	10	5	0	0	3	1
4	13	17	10	5	0	0	3	1

4.2	**4.4**	**4.6**	**4.8**	**5**	**5.2**	**5.4**	**5.6**	**>**
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

1	**1.25**	**1.5**	**1.75**	**2**	**2.25**	**2.5**	**2.75**	**>**
4	1	1	1	0	0	1	0	0
10	3	1	10	7	5	2	2	2
14	4	2	11	7	5	3	2	2

3.2	**3.4**	**3.6**	**3.8**	**4**	**4.2**	**4.4**	**4.6**	**>**
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

-0.8	-0.4	0	0.4	0.8	1.2	1.6	2	>
0	9	0	0	0	0	0	0	0
2	32	2	3	1	1	2	0	0
2	41	2	3	1	1	2	0	0

1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
2	1	3	0	1	1	1	0	0
2	5	6	6	15	5	1	1	2
4	6	9	6	16	6	2	1	2

3	3.2	3.4	3.6	3.8	4	4.2	4.4	>
2	1	2	2	1	0	0	0	0
5	6	11	12	6	1	0	0	0
7	7	13	14	7	1	0	0	0

-0.5	-0.4	-0.3	-0.2	-0.1	0	0.1	0.2	>
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

-0.3	-0.2	-0.1	0	0.1	0.2	0.3	0.4	>
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

2.4	2.6	2.8	3	3.2	3.4	3.6	3.8	>
2	0	1	0	0	0	0	0	0
13	7	8	3	3	1	0	2	0

15	7	9	3	3	1	0	2	0

-0.1	-0.05	0	0.05	0.1	0.15	0.2	0.25	>
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	>
0	1	2	2	2	0	1	1	0
1	3	5	9	12	9	3	1	2
1	4	7	11	14	9	4	2	2

1.75	2	2.25	2.5	2.75	3	3.25	3.75	>
5	2	0	0	0	0	0	0	0
8	10	7	7	3	4	1	3	1
13	12	7	7	3	4	1	3	1

CH2MHILL

PROJECT NUMBER	BORING NUMBER	HF-1
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/21/04 1330 END : 1400 LOGGER : R.Rech

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		20"		0-1' N4, not mottled, poorly sorted, angular, med. Dense, med. Gravel w/some med. Sand and silt (GP), moist	Gravel and stone from surface PID: 0.0 ppm
2						**Sample HF-1-0-2 @ 1345**
					1-2' 10YR 6/6, not mottled, slight plasticity, soft/firm, silt and clay(ML), dry	PID: 0.0 ppm
4	4-8		20"		4-6' 10YR 6/6, not mottled, slight plasticity, soft/firm, silt and clay(ML), moist, increasing to wet w/depth	PID: 0.0 ppm
6						
8						PID: 0.0 ppm
	8-12		34"		8-9' 10YR 6/6, not mottled, slight plasticity, soft/firm, silt and clay(ML), wet	PID: 0.0 ppm
10					9-10' N2, not mottled, slight plasticity, clay w/little silt (ML), wet	**Sample HF-1-8-9 @ 1355**
12					10-11' 5YR 6/4, not mottled, med. Plasticity, clay (CL), dry	PID: 0.0 ppm
14	12-16					
16						
18	16-20					
20						
22	20-24					
24						
26	24-28					
28						
30						

PROJECT NUMBER	BORING NUMBER	HF-2
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/21/04 1400 END : 1430 LOGGER : R.Rech

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		36"		0-2' 10YR 5/4, not mottled, well sorted, subangular, dense, fine sand and clay, slight plasticity (SC), dry	PID: 0.0 ppm Med. Gravel sporadically throughout
2						
4						PID: 0.0 ppm
	4-8		20"		4-6' 10YR 5/4, not mottled, well sorted, subangular, dense, fine sand and clay, slight plasticity (SC), moist	PID: 0.0 ppm
6						**Sample HF-2-4-5 @ 1415**
8						PID: 0.0 ppm
	8-12		30"		8-11' 10YR 5/4, not mottled, well sorted, subangular, dense, fine sand and clay, slight plasticity (SC), moist	PID: 0.0 ppm
10						
12						PID: 0.0 ppm
	12-16		24"		12-14' 10YR 5/4, not mottled, well sorted, subangular, dense, fine sand and clay, slight plasticity (SC), moist	PID: 0.0 ppm
14						**Sample HF-2-12-13 @ 1420**
16						
	16-20					
18						
20						
	20-24					
22						
24						
	24-28					
26						
28						
30						

CH2MHILL

PROJECT NUMBER	BORING NUMBER	HF-3
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/21/04 1430 END : 1450 LOGGER : R.Rech

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		36"		0-1' 10YR 2/2, not mottled, well sorted, subangular, med. Dense, fine sand and silt (SM), moist 1-2' 10YR 4/2, not mottled, well sorted, subangular, dense, silt and fine sand (SM), moist 2-3' 10YR 6/6, not mottled, well sorted, subangular, dense, fine sand w/some silt (SM), dry	PID: 0.0 ppm Grass and wood in top 6" **Sample HF-3-2-4 @ 1440** PID: 0.0 ppm
4	4-8		48"		4-5.5' 10YR 6/6, not mottled, well sorted, subangular, dense, fine sand w/some silt (SM), wet 5.5-8' 5YR 6/4, not mottled, med. Plasticity, stiff clay (CH), dry	PID: 0.0 ppm **Sample HF-3-5-6 @ 1445** PID: 0.0 ppm
8	8-12		0"		Core was very wet. No Recovery.	PID: 0.0 ppm PID: 0.0 ppm
12	12-16					
16	16-20					
20	20-24					
24	24-28					
28						
30						

PROJECT NUMBER	BORING NUMBER	HF-4
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/21/04 1450 END : 1515 LOGGER : R.Rech

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		32"		0-1' 10YR 2/2, not mottled, well sorted, subangular, med. Dense, fine sand w/some silt (SM), moist 1-2' N4, not mottled, poorly sorted, angular, med. Dense, coasre sand w/some fine/med. Gravel (SP), moist 2-3' 5YR 5/6, not mottled, well sorted, subangular, dense, fine sand and silt (SM), dry	PID: 0.0 ppm **Sample HF-4-2-3 @ 1455** Possibly some Fly ash in soil **Sample HF-4-3-4 @ 1500** PID: 0.0 ppm
4	4-8		36"		4-7' 5YR 5/6, not mottled, low plasticity, stiff, clay w/little fine sand (CL), dry	PID: 0.0 ppm **Sample HF-4-7-8 @ 1505** PID: 0.0 ppm
8	8-12		48"		8-12' 5YR 6/4, not mottled, med. Plasticity, stiff, clay (CH), dry	PID: 0.0 ppm PID: 0.0 ppm
12	12-16					
16	16-20					
20	20-24					
24	24-28					
28						
30						

PROJECT NUMBER	BORING NUMBER	SB-1A
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/19/04 1615 END : 1655 LOGGER : R.Rech

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		30"		0-1' N4, not mottled, poorly sorted, angular, med. Dense, med sand w/trace silt (SP), moist 1-3' N2, not mottled, slight plasticity, clay w/little silt (ML), moist	PID: 0.3 ppm **Sample SB-1A-0-2 @ 1630** **Sample SB-1A-2-4 @ 1640** PID: 0.2 ppm
4	4-8		30"		6-8' 5YR 6/4, not mottled, med. Plasticity, stiff clay (CH), dry	PID: 0.2 ppm **Sample SB-1A-4-6 @ 1650** PID: 0.3 ppm
8	8-12					
12	12-16					
16	16-20					
20	20-24					
24	24-28					
28						
30						

PROJECT NUMBER	BORING NUMBER	SB-1B
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/20/04 840 END : 0930 LOGGER : P.Weber

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		42"		0-1' 10YR 2/2, not mottled, med. Plasticity fine sand and silt (SM), moist 1-3.5' 10YR 7/4, not mottled, mod. Sorted, angular, med. Dense, course sand and gravel (SP), mosit	**Sample SB-1B-0-2 @ 0910** **Sample SB-1B-2-4 @ 0920**
4	4-8		42"		4-6' 10YR 7/4, not mottled, mod. Sorted, angular, med. Dense, course sand and gravel (SP), mosit 6-7.5' 10R 6/6, not mottled, med. Plasticity, hard, clay (CL), dry	**Sample SB-1B-6-8 @ 0930**
8	8-12					
12	12-16					
16	16-20					
20	20-24					
24	24-28					
28						
30						

CH2MHILL

PROJECT NUMBER	BORING NUMBER	SB-2A
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/20/04 940 END : 1010 LOGGER : P.Weber

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		46"		0-2' 10YR 2/2, not mottled, well sorted, subangular, med. Dense, low plasticity fine sand and silt (SM), dry 2-4' N4, not mottled, low plasticity, firm, silt and clay(ML), moist	**Sample SB-2A-0-2 @ 0945** **Sample SB-2A-2-4 @ 0950**
4	4-8		36"		4-6' 10R 6/6, not mottled, low plasticity, soft, silt and clay (ML), moist 6-8' 10R 6/6, not mottled, high plasticity, dense, clay (CL), dry	**Sample SB-2A-6-8 @ 1000**
8	8-12					
12	12-16					
16	16-20					
20	20-24					
24	24-28					
28						
30						

PROJECT NUMBER	BORING NUMBER	SB-2B
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/20/04 1015 END: 1030 LOGGER : P.Weber

DEPTH BELOW SURFACE (FT)	SAMPLE: INTERVAL	SAMPLE: NUMBER AND TYPE	SAMPLE: RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		24		0-1' 10YR 2/2, not mottled, poorly sorted, loose, med. Sand w/trace fine gravel and silt (SM), moist	**Sample SB-2B-0-2 @ 1015**
2					1-2' 10YR 6/6, not mottled, mod. Sorted, firm, low plasticity, clay w/some coarse sand and fine gravel (CL), moist	**Sample SB-2B-2-4 @ 1020**
4	4-8		48			
6					4-6' 10YR 6/6, not mottled, mod. Sorted, firm, low plasticity, clay w/some coarse sand and fine gravel (CL), moist	**Sample SB-2B-6-8 @ 1030**
8					6-8' 10YR 6/6, not mottled, mod. Sorted, firm, low plasticity, clay w/some coarse sand and fine gravel (CL), dry	
10	8-12					
12						
14	12-16					
16						
18	16-20					
20						
22	20-24					
24						
26	24-28					
28						
30						

PROJECT NUMBER	BORING NUMBER	SB-3A
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/21/04 940 END : 1005 LOGGER : P.Weber

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		48		0-1' 10YR4/2, not mottled, mod. Sorted, subangular, loose, med/fine sand w/some fine/med gravel (SP), moist 1-4' 10YR 5/4, not mottled, med plasticity, firm, clay w/trace fine sand (CL), dry	**Sample SB-3A-0-2 @ 0950** PID: 0.0 ppm **Sample SB-3A-2-4 @ 0955**
4	4-8		24		4-6' 10YR 5/4, not mottled, med plasticity, firm, clay (CL), moist	PID: 0.0 ppm **Sample SB-3A-6-8 @ 1000** **Sample SB-3A-6-8-FD @ 1000** PID: 0.0 ppm
8	8-12		24		8-9' 5Y 4/4, not mottled, poorly sorted, subrounded, loose, coarse sand w/some fine/med gravel (SP), wet 9-10' N3, not mottled, poorly sorted, subrounded, loose, coarse sand w/some fine/med. Gravel (SP), wet	PID: 0.0 ppm
12	12-16					
16	16-20					
20	20-24					
24	24-28					
28						
30						

PROJECT NUMBER	BORING NUMBER	SB-3B
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/21/04 1010 END : 1035 LOGGER : P.Weber

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		48"		0-1' 5YR 2/2, not mottled, poorly sorted, subangular, loose, coarse sand and fine/med gravel (SP), dry 1-2' 5YR 4/4, not mottled, mod sorted, soft, low plasticity, silt and clay w/trace fine sand (SM), dry 2-4' 5YR 5/6, not mottled, firm, med plasticity, clay (CL), dry	PID: 0.0 ppm **Sample SB-3B-1-2 @ 1017** **Sample SB-3B-3-4 @ 1020** PID: 0.0 ppm
4	4-8		36"		4-7' 5YR 5/6, not mottled, firm, med plasticity, clay (CL), moist	PID: 0.0 ppm Glass at ~ 7' bgs PID: 0.0 ppm
8	8-12		18"		8-8.5' 5YR 5/6, not mottled, firm, med plasticity, clay (CL), moist 8.5-9.5' 10R 3/4, not mottled, poorly sorted, subrounded, loose, coarse sand w/some fine/med gravel (SP), wet	PID: 0.0 ppm **Sample SB-3B-8-9 @ 1030** **Sample SB-3B-8-9-MS @ 1030** **Sample SB-3B-8-9-SD @ 1030** PID: 0.0 ppm
12	12-16					
16	16-20					
20	20-24					
24	24-28					
28						
30						

PROJECT NUMBER	BORING NUMBER	SB-8A
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/20/04 1545 END : 1620 LOGGER : P.Weber

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		30"		0-8" Reinforced concrete slab 8"-2' 10YR 6/6, not mottled, poorly sorted, angular, loose, coarse sand and fine/med gravel (SP), dry 2-2.5' 10YR 5/4, not mottled, poorly sorted, angular, med dense, coarse sand and fine/med gravel (SP), dry	**Sample SB-8A-2-4 @ 1605**
4	4-8		18"		4-4.5' 10YR 5/4, not mottled, poorly sorted, angular, med dense, coarse sand and fine/med gravel (SP), dry 4.5-5.5' N4, not mottled, poorly sorted, subangular, med dense, coarse sand and fine/med gravel (SP), moist	**Sample SB-8A-4-6 @ 1615** Appears to be stained dark grey/black
8	8-12		24"		8-10' 5YR 2/1, N4, not mottled, poorly sorted, subrounded, loose, coarse sand and fine/med gravel (SP), wet	
12	12-16					
16	16-20					
20	20-24					
24	24-28					
28						
30						

PROJECT NUMBER	BORING NUMBER	SB-8B
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/20/04 1620 END : 1655 LOGGER : P.Weber

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		24"		0-8" Reinforced concrete slab 8"-2' 10YR 5/4, not mottled, poorly sorted, angular, med dense, coarse sand and fine/med gravel (SP), dry	**Sample SB-8B-2-4 @ 1640**
4	4-8		30"		4-5' 10YR 5/4, not mottled, mod sorted, subangular, med dense, fine sand w/trace clay (SC), moist 5-7.5' N4, not mottled, low plasticity, soft clay w/trace fine sand (CL), moist	**Sample SB-8B-5-6 @ 1650**
8	8-12		30"		8-10.5' N4, not mottled, poorly sorted, subrounded, med dense, coarse sand and fine/med gravel (SP), wet	
12	12-16					
16	16-20					
20	20-24					
24	24-28					
28						
30						

PROJECT NUMBER	BORING NUMBER	SB-10A
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/20/04 1150 END : 1220 LOGGER : P.Weber

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		12"		0-1' 10YR 4/2, not mottled, poorly sorted, subangular, loose, fine/med gravel and med sand w/trace silt (SP), dry	
4	4-8		48"		4-5' 10YR 4/2, not mottled, mod sorted, subangular, med dense fine/med sand and silt (SM), wet 5-8' 10YR 6/6, not mottled, med plasticity, firm, clay (CL), dry	**Sample SB-10A-4-6 @ 1200**
8	8-12		48"		8-9' 10YR 4/2, not mottled, firm, low plasticity, clay and silt (CL), moist 9'-10' 10YR 5/4, not mottled, well sorted, subrounded, fine sand w/trace clay (SC), dry 10-11' 10YR 4/2, not mottled, firm, low plasticity, clay and silt (CL), dry 11-12' N4, not mottled, firm, low plasticity, clay and silt (CL), dry	**Sample SB-10A-10-12 @ 1210**
12	12-16		48"		12-16' N4, not mottled, loose, low plasticity, clay and silt (CL), wet	
16	16-20					
20	20-24					
24	24-28					
28						
30						

PROJECT NUMBER	BORING NUMBER	SB-10B
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/21/04 1100 END : 1150 LOGGER : P.Weber

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		36"		0-2' 10YR 4/2, not mottled, poorly sorted, subangular, loose, coarse sand w/some silt (SM), moist	PID: 0.0 ppm
2					2-3' 10YR 6/6, not mottled, well sorted, subangular, loose, fine sand w/some silt (SM), moist	**Sample SB-10B-2-4 @ 1115** **Sample SB-10B-2-4-FD @ 1115**
4	4-8		48"		4-5' 10YR 6/6, not mottled, well sorted, subangular, loose, fine sand w/some silt (SM), dry	PID: 0.0 ppm PID: 0.0 ppm
6					5-8' 10YR 7/4, not mottled, firm, med plasticity, clay (CL), moist	
8	8-12		48"		8-11' 10YR 7/4, not mottled, firm, med plasticity, clay (CL), moist	PID: 0.0 ppm
10					11-12' N4, not mottled, mod sorted, subrounded, loose, clay w/some fine sand (CL), wet	Soil appears stained PID: 0.0 ppm **Sample SB-10B-10-12 @ 1140** **Sample SB-10B-10-12-MS @ 1140** **Sample SB-10B-10-12-MSD @ 1140**
12	12-16		36"		12-15' N4, not mottled, mod sorted, subrounded, loose, clay w/some fine sand (CL), wet	PID: 0.0 ppm
14						
16	16-20					
18						
20	20-24					
22						
24	24-28					
26						
28						
30						

PROJECT NUMBER	BORING NUMBER	B01_041904
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/19/04 1515 END : 1550 LOGGER : P.Weber

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		18"		0-6" Asphalt and cocnrete debris from parking lot 6"-1.5' 10YR 6/2, not mottled, poorly sorted, angular, med dense, med sand w/some fine/med gravel (SP), dry	PID: 2.1 ppm PID: 0.0 ppm PID: 1.5 ppm
4	4-8		24"		4-5' 10YR 6/2, not mottled, poorly sorted, angular, med dense, med sand w/some fine/med gravel (SP), dry 5-6' 5YR 5/2, not mottled, firm, med plasticity, clay (CL), dry	PID: 0.0 ppm PID: 4.9 ppm
8	8-12		28"		8-10' 5YR 5/2, not mottled, firm, med plasticity, clay (CL), dry Refusal @ 10.5' bgs	Streaks of black. Potentially carried down from above **Sample B01_041904_9.5-10.5 @ 1535**
12	12-16					
16	16-20					
20	20-24					
24	24-28					
28						
30						

CH2MHILL

PROJECT NUMBER	BORING NUMBER	B02_041904
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/19/04 1555 END : 1615 LOGGER : P.Weber

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		30"		0-6" Asphalt/concrete debris 6"-1' 10YR 6/2, not mottled, poorly sorted, angular, med dense, med sand w/little fine gravel (SP), dry 1-2.25' 5Y 6/1, not mottled, poorly sorted, angular, loose, coarse sand and fine/med gravel (SP), moist 2.25-3.25' 5YR 5/2, not mottled, firm, med plasticity, clay (CL), dry	PID: 0.2 ppm PID: 0.3 ppm Appears to be Fly ash
4	4-8		24"		4-5' 5YR 5/2, not mottled, firm, med plasticity, clay (CL), dry 5-6' Fibrous woody material, moist	PID: 0.0 ppm PID: 0.0 ppm
8	8-12		36"		8-9' Fibrous woody material, wet 9-10.5' 5YR 5/2, not mottled, firm, med plasticity, clay (CL), moist	PID: 504 ppm Strong sulfur odor **Sample B02_041904_7.5-8.5 @ 1605** PID: 213 ppm
12	12-16					
16	16-20					
20	20-24					
24	24-28					
28						
30						

PROJECT NUMBER	BORING NUMBER	B02_042040
316024.01.FW		SHEET 1 OF 1

SOIL BORING LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York

ELEVATION : DRILLING CONTRACTOR: Parratt Wolff, Inc.

DRILLING METHOD AND EQUIPMENT USED :

WATER LEVELS : START : 4/20/04 1500 END : 1535 LOGGER : P.Weber

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Breathing Zone Headspace
0	0-4		24"		0-6" Asphalt/concrete debris 6"-1' 10YR 5/4, not mottled, poorly sorted, subangular, med dense, coarse sand w/some fine/med gravel (SP), dry 1-2' 10R 4/6, not mottled, mod sorted, subangular, coarse sand w/some clay (SP), dry	
4	4-8		24"		4-6 5Y 6/1, not mottled, soft, med plasticity, clay (CL), moist	**Sample B02_042004_4-6 @ 1510**
8	8-12		24"		8-10' 5Y 6/1, not mottled, well sorted, dense, fine sand w/trace clay (SM), moist	**Sample B02_042004_7-9 @ 1520**
12	12-16		24"		12-14' 5Y 6/1, not mottled, soft, med plasticity, clay (CL), wet	
16	16-20					
20	20-24					
24	24-28					
28						
30						

CH2MHILL

PROJECT NUMBER	TEST PIT NUMBER
	Landfill 1 SHEET 1 OF 1

TEST PIT LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York LOGGER : R.Rech

ELEVATION : CONTRACTOR : Parratt Wolff, Inc.

EXCAVATION EQUIPMENT USED: New Holland Tracked Excavator DATE EXCAVATED:

WATER LEVEL : APPROX. DIMENS: Length: Width: Max. Depth:

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS DIFFICULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS, INSTRUMENTS.	
				PID (ppm):	Notes
1			0-1' Gravel and topsoil, brick and wood debris, several small bottles with white substance (possibly from previous TP-9 activities)	0.0	Test pit excavated in 6" lifts to try and minimize breakage of glass and other fragile material in landfill area
2			1-2' Brown silty sand w/brick and wood debris, no glass bottles		Bottles filled with white substance found in upper 2' were likely excavated from a deeper depth previously and backfilled near the surface
3			2-3' Brown silty sand w/brick and wood debris, no glass bottles		
4			4' Gray/Black clay material, strong organic odor	0.0	
5			4.5' Several empty amber glass bottles found and placed in roll-off container		
6			4.5 -6' Brown silty sand, wood and brick debris, tree stump, moist	0.0	
7			6-7' Brown/orange sandy clay, brick, wood, glass debris		
8			8' Brown/orange sandy clay, brick, wood, glass debris, groundwater seeping into excavation	0.2	
9			Unable to log soils below 8' due to groundwater intrusion. Continue excavation.	0.0	Excavation was continued below the water table to try and determine the vertical extent of the bottles
10			Bottles start floating on groundwater. Types of bottles include beer, soda, cosmetic and laboratory	0.0	
11			10-13' Bottles filled with white material starting to be undcoverd below groundwater level.	0.0	PID reading of white substance in the bottles was 10.4 ppm
12					
13					Unable to continue excavation due to cave ins resulting from groundwater intrusion. Bottles with white material were recovered and containerized. All other material was backfilled in the landfill.
14					

CH2MHILL

PROJECT NUMBER	TEST PIT NUMBER
	Landfill 2 SHEET 1 OF 1

TEST PIT LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York LOGGER : R.Rech

ELEVATION : CONTRACTOR : Parratt Wolff, Inc.

EXCAVATION EQUIPMENT USED: New Holland Tracked Excavator DATE EXCAVATED:

WATER LEVEL : APPROX. DIMENS: Length: Width: Max. Depth:

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SOIL DESCRIPTION SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS DIFFICULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS, INSTRUMENTS.	
				PID (ppm):	Notes
1			0-1' Gray/black gravel and silty sand, moist 1-2' Brown silty sand w/some gravel, brick, wood and other misc. debris	0.0	Landfill 2 test pit excavated perpnedicular to Landfill1 test pit to try and determine horizontal extent of glass
2					
3			2-4' Brown silty sand w/some gravel, brick, wood and other misc. debris	0.0	More general household debris identified in Landfill 2 as compared to Landfill 1
4					
5			4-6' Brown silty sand w/some gravel, brick, wood and other misc. debris including glass (mostly beer bottles)		
6					
7			7-8' Gray clay layer with misc. debris	0.0	
8					
9			8-9' Gray clay layer with misc. debris 9' Groundwater starts to seep into excavation		
10			10' Increased glass debris similar to Landfill 1 test pit		
11			Discontinue excavation to avoid disturbing and damaging intact bottles		
12					

CH2MHILL

PROJECT NUMBER	TEST PIT NUMBER
	Landfill 3 SHEET 1 OF 1

TEST PIT LOG

PROJECT : DOW-Waterloo LOCATION : Waterloo, New York LOGGER : R.Rech

ELEVATION : CONTRACTOR : Parratt Wolff, Inc.

EXCAVATION EQUIPMENT USED : DATE EXCAVATED:

WATER LEVEL : APPROX. DIMENS: Length: Width: Max. Depth:

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DIFFICULTY IN EXCAVATION, RUNNING GRAVEL CONDITION, COLLAPSE OF WALLS, SAND HEAVE, DEBRIS ENCOUNTERED, WATER SEEPAGE, GRADATIONAL CONTACTS, TESTS, INSTRUMENTS. PID (ppm):	Notes
1			0-2' Brown/orange silty sand, no debirs	0.0	Landfill 3 test pit excavated farther up hill than landfill 2 to further delineate the extent of bottles
2					
3			2-4' Brown/orange silty sand, no debirs		
4					
5			4-6' Brown/orange silty sand, no debirs	0.0	
6					
7			6-7' Increased clay, some brick and wood debris	0.0	
8			8' Rubber tire and other misc. automobile debris		
9			9' Few glass bottles	0.0	
10			10' Groundwater starts to seep in		
11			10-12' Glass bottles similar to previous test pits		Fewer bottles identified then in previous test pits
12					

Appendix B

Landfill Test Pit Photographs


BAKER
TANKS
RO2112
RT
DANGER

Appendix C

Laboratory Data Packages (on compact disc)

Appendix D
QA/QC Review

APPENDIX D

QA/QC Review

Introduction

On April 19-23, 2004, soil, groundwater, production well, investigation-derived waste (IDW), and unknown chemical samples were collected at the Dow, Waterloo Facility. These samples were analyzed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), Total Metals, Polychlorinated Biphenyls (PCBs), Sulfide, and/or Percent Solids. Kemron Environmental Services of Marietta, Ohio analyzed the samples. The quality of the analytical data was assessed by a review of the case narratives submitted by the laboratory, a review of all the field QC, and a review of the QC forms for surrogates, laboratory control samples, and blanks. This is a low-level review, the purpose of which was to assess if any of the data was of such poor data that it should not be used by the project team.

Case Narrative and Low Level Data Review

Semi-Volatile Organic Compounds

Most of the comments for SVOCs pertained to high percent recoveries for Matrix Spike/ Matrix Spike Duplicates (MS/MSD) and Laboratory Control Samples (LCS). Some of the detected results would be flagged "J" as estimated, but still usable as reported.

Sample #1 in SDG L0404422 contained one or more surrogates in the acid fraction below the specified recovery limit. None of these recoveries were below 10 percent, so the data would be qualified and flagged "J" or "UJ."

Volatile Organic Compounds

The comments for VOCs were varied throughout the Sample Delivery Groups (SDGs). A few SDGs contained high surrogate recoveries in samples. Other comments consisted of MS/MSD and LCS-duplicate percent recoveries greater that the specified QC limits. The detected results for these samples may be qualified and flagged "J" as estimated, but still usable as reported.

It is worth noting that a number of samples were diluted to stay within the calibration range and other results had raised reporting limits due to sample matrices.

Metals

The majority of comments about the Metals results concerned the reanalysis of samples at dilutions due to initial concentrations above the linear range. There were many instances of MS/MSD percent recoveries outside the specified limits. However, most of the recoveries outside of the MS/MSD limits fell within the limits of other QC criteria. Some of this data

would be flagged "J" as estimated or "UJ" as non-detected and estimated, but still usable as reported.

Two of the method blank samples contained detected concentrations of zinc and copper. In these cases, zinc and copper in the field samples were either not detected or the concentrations were high enough to suggest the results were representative of field conditions and not due to laboratory conditions.

Polychlorinated Biphenyls

The case narrative for PCBs noted that some sample surrogates demonstrated percent recoveries greater than the QC limit. Some of the data associated with those samples would be qualified "J" as estimated and the undetected results would not require any action to be taken. All of the results would still be used as reported.

General Chemistry

The 48-hour holding time for turbidity analyses was exceeded in SDG L0404439 due to delivery problems. This data would have been flagged "J" as estimated or "UJ" as non-detected and estimated, but still usable as reported.

Conclusion

The results appear to be usable as reported. The common QC deficiencies in many of the analyses were high surrogate and MS/MSD recoveries. These recoveries along with many sample dilutions suggest there may be a high bias in some samples due to matrix interference. Most of the data is acceptable as reported and may be used to make project decisions.

Appendix E

Background Solid Data Histograms (on compact disc)