

2011 Data Summary

Commerce Street Plume Superfund Site Williston, Vermont

Remedial Investigation / Feasibility Study
EPA Task Order No. 0036-RI-FS-019L

REMEDIAL ACTION CONTRACT No. EP-S1-06-03

FOR

**US Environmental Protection Agency
Region 1**

BY

Nobis Engineering, Inc.

Nobis Project No. 80036

November 2011

U.S. Environmental Protection Agency

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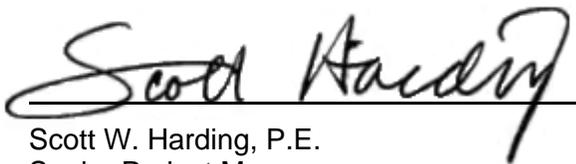
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1.0 INTRODUCTION

Nobis Engineering, Inc. (Nobis) has prepared this 2011 Data Summary Report for the Commerce Street Plume Superfund Site (Study Area) located in Williston, Vermont (Figure 1-1). This work was performed in accordance with the United States Environmental Protection Agency (EPA) Region I Remedial Action Contract 2, No. EP-S1-06-03, Task Order No. 0036-RI-FS-019L.

1.1 Objective

The objective of this report is to present and evaluate the analytical data for groundwater collected during 2011. The data collection and evaluation are used to assess the nature and extent of groundwater contamination at the Study Area. This Data Summary Report includes an evaluation of the analytical data collected during 2011 and compares the results to the Vermont Groundwater Protection Rule (GWPR) and EPA Maximum Contaminant Level (MCL) regulatory criteria.

1.2 Report Organization

This report is organized as follows:

- Section 1 of the report provides a description of the Study Area and summarizes previous investigations.
- Section 2 presents a description of the 2011 investigation activities.
- Section 3 presents the analytical results for samples collected during the 2011 investigations.
- Section 4 presents an update to the Conceptual Site Model (Nobis, 2009).
- Section 5 presents the summary, conclusions, and recommendations.

1.3 Study Area Location and Description

The Commerce Street Plume Superfund Site is located at an industrial park in Williston, Chittenden County, Vermont, approximately four miles east of Burlington, Vermont (Figure 1-1). The Study Area encompasses the Alling Industrial Park (AIP) and a portion of the adjacent residential area to the west. AIP has had light industrial and commercial tenants since 1946

(Nobis, 2008a). The Study Area is located within the Winooski River watershed at an elevation ranging between 330 and 350 feet above mean sea level (ft msl). The Study Area is bounded to the north by Vermont State Route 2 (Rt. 2), to the east by Harvest Lane, to the south by Marshall Avenue, and to the west by South Brownell Road (Figure 1-2).

The area is zoned for mixed residential, business, and industrial uses. Commerce Street and the areas to the east are predominantly commercially zoned lots that are currently developed or in the process of being developed. Kirby Lane and South Brownell Road are zoned residential, with limited commercial developments on South Brownell Road. The ground surface over the entire area exhibits little relief and slopes gently to the southwest. Surface water at the Study Area consists of a small unnamed stream and its three tributaries which flow in a southerly direction to Muddy Brook. Public pedestrian access is unrestricted within the Study Area (Geo Trans, 2000).

The unnamed stream, located in the eastern portion of the Study Area, is a habitat for two State-designated threatened species and is a State-designated area for protection and maintenance of aquatic life under the Clean Water Act. The Winooski River downstream of the property is a known fishery.

Previous studies identified three properties/lots within the Study Area as locations of former manufacturing and/or fabrication operations that could have contributed to groundwater contamination. Compounds found in groundwater beneath the Study Area include trichloroethene (TCE), tetrachloroethene (PCE), benzene, toluene, ethylbenzene and xylene compounds (commonly referred to as BTEX), cadmium, and chromium. The three lots and the potential sources are described below. Additional information about the historical uses of these properties is provided in Section 1.5.

1. Lot 19-11 (Mitec property/96 Commerce Street): The property formerly leased by Mitec Systems Corp. (Mitec) occupies one acre and currently includes one 6,000 square foot building. In 1983, the State of Vermont notified Mitec that their electroplating rinse water was hazardous and was being discharged. Two potential sources were identified at this property: a wastewater disposal lagoon behind (west) the building and a leach field next to (south) the building are suspected sources of TCE, PCE and/or metals. The

electroplating industry often used TCE for degreasing metal surfaces prior to plating operations.

Wastewater disposal lagoon – Unlined; thought to be created sometime between 1972 and 1974. In 1979, a pipe that led directly to the lagoon from the building was installed. In June 1984, Mitec laid a discharge line to the lagoon and installed a temporary treatment recovery system for chromium. Contaminated soil was reportedly removed from the lagoon in 1985 and 1989.

Leach field – Reportedly for sanitary use only; however, a significant TCE plume and Dense Non-Aqueous Phase Liquid (DNAPL) appeared to be emanating from it. Historical sampling in the vicinity of the leach field at a depth of 32.1 feet indicated at 19,000 µg/L in T1-2 and 22,000 µg/L in RB-1.

2. Lot 19-12 (Bove-Fagan property/87 Commerce Street): Two underground storage tanks were removed from this lot in 1994 revealing a previous release of BTEX compounds.
 - o Lot 19-2 (Former EMCO property/63 Commerce Street): Manufacturing operations began in 1947 and both a disposal pit and outfall pipe to the unnamed brook have been identified.

A Study Area map that depicts Study Area features and Lot numbers is included as Figure 1-2.

1.4 Study Area History

Various manufacturing and electroplating operations occurred on the 96 Commerce Street property since 1960. The two primary potential sources of contamination on the property were identified as an unlined lagoon and a leach field, which were both created to dispose of liquid waste. Plating rinse water and sludge wastes containing heavy metals and solvents were disposed of into the unlined lagoon intermittently through 1984.

From 1979 to 1986, Mitec leased the property for manufacturing of electronic and microwave components. Between 1979 and 1984, Mitec discharged an undetermined quantity of rinse waters and sludge wastes containing chromium, cadmium, cyanide, nickel, and industrial

solvents associated with electroplating operations into the unlined lagoon (Weston, 1998). After a Mitec employee expressed concern to the Vermont Department of Environmental Conservation (VTDEC) in March 1982, the State found the company in violation of hazardous waste regulations for the disposal of chromium contaminated wastes.

In 1984, monitoring wells detected chromium in groundwater downgradient of the lagoon. In July 1985, sampling by Vermont Department of Health (VTDOH) showed six residential private drinking water wells downgradient of the lagoon and leach field to be contaminated with TCE up to 190 micrograms per liter ($\mu\text{g/L}$) and PCE up to 12 $\mu\text{g/L}$; these concentrations are above Federal MCLs for drinking water. The drinking water wells were subsequently removed from service as drinking water sources, and residents were provided with an alternate drinking water supply.

Additionally, elevated concentrations of PCE and TCE have been detected in the indoor air of South Brownell Road residences, including the residence at Lot 3-30 (Figure 1-2). The presence of volatile organic compound (VOC) vapors inside the Lot 3-30 residence, located at 941 South Brownell Road, is believed to have resulted from volatilization of contaminants from the groundwater that underlies the house and Study Area. The residence had a continuously operating sump pump that removed groundwater that accumulates in a sump beneath the basement floor. According to the VTDEC, venting the sump to the exterior of the house mitigated the indoor air concentrations of these contaminants to an acceptable concentration. The mitigation was done as part of a state-sponsored action (Geo Trans, 2000).

Numerous groundwater, surface water, sediment, residential indoor air, and soil sampling events occurred between 1984 and 2002. In 1987 and 1988, concentrations of TCE and PCE were detected in groundwater up to 3,300 $\mu\text{g/L}$ and 660 $\mu\text{g/L}$, respectively, throughout AIP. In 1996, soil samples collected by Vermont Agency for Natural Resources (VTANR) identified TCE concentrations up to 1,790 $\mu\text{g/L}$ directly downgradient of the leach field located at the Mitec property. Additional studies detected dichloroethene (DCE) concentrations of up to 180 $\mu\text{g/L}$, chromium at 3.4 $\mu\text{g/L}$, TCE at 170 $\mu\text{g/L}$, and vinyl chloride at 11 $\mu\text{g/L}$ in the surface water in the wetlands and the nearby unnamed brook, which flows into Muddy Brook and ultimately the Winooski River. In 1999, groundwater samples taken by the VTANR found TCE in ground water at levels as high as 90,000 $\mu\text{g/L}$ downgradient of the former Mitec facility. In 2002, EPA detected elevated levels of 11 VOCs and 13 metals in monitoring wells located throughout AIP

and surrounding residential area. Groundwater contamination continues to be detected directly downgradient of the Mitec property and has the potential to migrate to private and public water supplies serving approximately 1,575 people within 4 miles of the property.

In summary, previous investigations identified TCE, PCE, BTEX, chromium, and cadmium in groundwater concentrations above their applicable State and Federal standards. Of these contaminants, TCE was found to be the most widespread and is present throughout the Study Area groundwater contaminant plume. Metal contamination was evaluated in the VTDEC SI (1996), and it was determined that metals contamination was confined to the areas near Lot 19-11 and the central portion of the Study Area. The report concluded that metals were not likely to migrate much farther and should not present a risk to surface water.

1.5 Summary of Previous Investigations

Presented below is a comprehensive, chronological list (compiled from Geo Trans' SI and Nobis reports) of previous environmental investigations conducted at the Study Area:

- December 1984: Mitec (Lot 19-11) contracted an environmental consultant to install the MI series monitoring wells (MI-1 through MI-9) which were located adjacent to the wastewater disposal lagoon and to the west of Lot 19-11. The wells were installed to a maximum depth of 17 feet below ground surface (ft bgs).
- March – May 1985: Mitec hired a contractor to remove 30 cubic yards of material from the wastewater lagoon. All materials were transported off-site and disposed of by licensed hazardous waste haulers.
- June – July 1985: Six private potable water supply wells, on South Brownell Road were found to be contaminated with TCE and PCE above the State Health Advisory Levels. All residences were subsequently connected to the Williston public water supply system.
- 1985 – 1986: VTDEC installed and sampled groundwater monitoring wells AL-1 through AL-21. Data from the wells identified VOC and metal contaminated groundwater downgradient of the Lot 19-11 wastewater disposal lagoon. TCE was detected in

shallow groundwater east of Commerce Street. Study Area investigators assumed additional sources were present at the Industrial Park.

- March 1987: A CERCLIS Preliminary Assessment (PA) completed for Lot 19-11 by an EPA consultant recommended further investigation.
- February 1989: VTDEC completed a PA of the AIP. The PA recommended further investigation of the Study Area, including suspected contamination on Lot 19-2.
- 1989: A Site Assessment Report was prepared on behalf of the property owner for Lot 19-28, related to a potential real estate transaction. No soil or groundwater samples were collected for this site assessment.
- 1990: Site investigation was conducted for Lot 19-20 on behalf of the property owner. Groundwater monitoring wells BM-1D, BM-2S, BM-2D, BM-3S, and BM-3D were installed and sampled. Maximum concentrations of TCE and PCE in groundwater were reported as 2,110 µg/L and 7.27 µg/L, respectively.
- 1993: An SI of the AIP was conducted for the EPA. The primary focus was Lot 19-2. Limited sampling and analysis did not reveal the suspected source for the TCE contamination east of Commerce Street. However, historical monitoring of well AL-14 indicates TCE contamination.
- July 1993: An SI was conducted for Lot 19-5 on behalf of the property owner. Monitoring wells PO-North and PO-South were installed and sampled. No VOC contamination was observed. Low concentrations of metals were detected and assumed to be associated with the downgradient Lot 19-11.
- September 1994: An SI was performed on Lot 19-23. Soil samples were collected from a depth of 2 to 3 feet-bgs and shallow monitoring wells ARC-1, ARC-2, and ARC-3 were installed. Metals contamination was detected in soil and groundwater; VOC contamination was not detected in groundwater from shallow monitoring wells.

- June 1994: An SI was performed on Lot 19-12 in response to a petroleum release. Shallow monitoring wells were installed and analysis revealed the presence of BTEX contamination in groundwater.
- July 1995: An SI was performed on Lot 19-30. Monitoring wells NO-1 through NO-4 were installed and sampled. TCE was detected at concentrations ranging up to 19,000 µg/L.
- January 1996: A summary report of the various investigations of properties in the AIP was performed on behalf of the VTDEC. The report identified data gaps that existed in the previous work performed in the area.
- October 1996: An SI was performed on behalf of VTDEC to further investigate the AIP. Several monitoring wells were installed, and TCE-contaminated groundwater under the leach field on Lot 19-11 was identified.
- March 1999: January 2000 – HSI Geo Trans performed an SI within the AIP and adjacent residential areas on behalf of Mitec. Results of the SI confirmed the presence of PCE, TCE, and BTEX-contaminated groundwater, surface water, and sediments throughout the area. The SI also identified Mitec's leased property (Lot 19-11) and Lot 19-23 (clay depression or sink hole) as likely sources of groundwater contamination (Geo Trans, 2000).
- July 1999: A limited groundwater investigation was completed by the Johnson Company for the VTDEC. TCE was the primary contaminant noted with concentrations up to 91,000 µg/L measured in groundwater. Johnson reported that based on the observed concentrations, the presence of non-aqueous phase liquids (NAPL) at or upgradient of profile samples T1-2, T1-3, and T2-2 was possible.
- April 2005: The Study Area was placed on EPA's National Priorities List (NPL).
- December 2007: Consulting Environmental Sciences, Inc. (CES) drafted a letter summarizing their review of VTDEC documents regarding the AIP properties. The letter suggests the Mitec property could not be the source of TCE groundwater contamination

based on a lack of evidence documenting any historic use of TCE at the property and that TCE is present in locations hydraulically upgradient (e.g., Lot 19-2) of the property. The letter further states that there was an insufficient amount data (i.e. lack of monitoring points) upgradient of the Mitec property (to the north and northeast) to make an informed evaluation of potential contaminant sources.

- December 2008: Nobis Engineering, Inc. conducted a well survey to locate historic wells and re-develop those deemed viable for groundwater sampling use. Nobis also conducted a round of groundwater elevation measurements and sampling, and later produced a Data Summary Report and updated Conceptual Site Model (CSM (Nobis, 2009a)). Findings presented in the report include water quality conditions indicating that the majority of TCE resides in the deep overburden groundwater. Groundwater flow directions and subsurface geological conditions are also presented.
- 2010: Nobis Engineering, Inc. conducted an extensive field investigation consisting of a geophysical survey, porewater sampling of the unnamed stream, groundwater vertical profiling, soil boring and DNAPL testing, monitoring well installations, and a full round of groundwater monitoring well sampling. Nobis later produced a 2010 Data Summary Report and updated the conceptual site model within the Data Summary Report (Nobis, 2011). Findings presented in the report include more detailed groundwater quality information with respect to plume delineation in addition to the discovery of a potential second TCE source area to the west of the Study Area. Additional findings include contaminated porewater discharging into the unnamed stream, depths to various stratigraphic units as determined by the geophysical survey, and data gaps to be addressed in future investigations.

1.6 Study Area Contaminants of Concern

Groundwater contaminants of concern (COCs) for the Study Area include contaminants that were found to have concentrations exceeding the MCLs in place during previous investigations. The groundwater COCs are listed in Table 1-1 along with applicable GWPR and MCL concentrations. TCE and PCE are the primary groundwater COCs for the Study Area although other VOCs and metals have been historically detected at the Study Area. BTEX compounds have been removed from the list as concentrations have not been observed exceeding

criteria during the past three groundwater sampling rounds. Additionally, cis-1,2-dichloroethene (cis-1,2-DCE) has been added to the list based on its presence in the groundwater, particularly in proximity to the unnamed stream.

2.0 2011 FIELD INVESTIGATION SAMPLING

The following sections describe sampling tasks performed at the Study Area in 2011. The basis and rationale for the 2011 field investigation was presented in the Final CSM Technical Memorandum (Nobis, 2009a). All field tasks were performed in accordance with the procedures described in the Final Quality Assurance Project Plan (QAPP) for Subsurface Investigations dated December 1, 2010 (Nobis, 2010). Refer to Sections 8 and 9 of the QAPP for task-specific sampling design rationale and procedure requirements. Sample results are summarized in Sections 3.0 and 4.0 of this report.

2.1 Groundwater Vertical Profile Sampling

In conjunction with the 2010 data, the primary objectives of collecting the 2011 vertical profiling data were to more clearly understand the nature and extent of the dissolved phase TCE contaminant plume and to delineate the clean boundaries of the plume. From August 15, 2011 through September 2, 2011 samples were collected from 22 vertical profiling locations (designated as VP-32 through VP-45, and VP-47 through VP-54) throughout AIP and adjacent private properties. On October 4 and 5, 2011, groundwater samples were collected from an additional 4 locations (designated as VP-55 through VP-58). All 2011 vertical profiling locations are shown on Figure 2-1.

During the week of August 15, 2011, upon collection, one 40 milliliter (mL) volatile organic analyte (VOA) vial from each profiling interval was transferred to the on-site EPA Office of Environmental Measurement and Evaluation (OEME) mobile laboratory for screening analysis of select VOCs including the COCs TCE and PCE. As results became available from the EPA mobile laboratory, representatives from Nobis and EPA held discussions to determine the most appropriate location for subsequent profiling borings in order to maximize coverage and to effectively delineate the extent of contamination. Vertical profiling points were adjusted from proposed locations provided to EPA prior to mobilization. Additionally, approximately one sample (at a pre-determined depth) per profile location was collected (four additional preserved 40 mL vials) and sent off-site to OEME's Regional New England Laboratory (NERL) in North

Chelmsford, Massachusetts for confirmation analysis of the full suite of VOC compounds. Results of the OEME screening are included in Appendix B and presented in Section 3.1.1. A discussion of the results is included in Section 4.

During the week of August 22, 2011, all vertical profile samples required the collection of four preserved 40 mL VOA vials and were sent to NERL for screening analysis. Results of the NERL screening are included in Appendix B and presented in Section 3.1.1. A discussion of the results is included in Section 4.

During the week of August 29, 2011, upon collection, three non-preserved 40 mL VOA vials were transferred to the on-site Stone Environmental, Inc., Montpelier, Vermont (Stone) mobile laboratory for screening analysis of the same previously described VOCs. Results of Stone's screening are included in Appendix C in their "Data Package for Waterloo Profiling and MobiLab Services" and presented in Section 3.1.1. Similarly with OEME's mobile laboratory, one additional sample (at a pre determined depth) per profile location was collected (four preserved 40 mL vials) and sent off-site to NERL for confirmation analysis of the full suite of VOC compounds. A discussion of the results is included in Section 4.

In addition to VOCs, during the weeks of August 15 and 22, 2011, 16 samples (including 1 duplicate) for total and dissolved metals and 16 samples (including 1 duplicate) for 1,4-dioxane were collected at pre-determined depths. All samples were shipped to and analyzed by NERL. Results of the metals and 1,4-dioxane analyses are presented in Table 3-2 and Table 3-3, respectively and included in Appendix B. A discussion of the results is included in Section 4.

The vertical profiling points were advanced to the top of the clay layer encountered at approximately 40 ft-bgs. Due to the conditions at and into the clay layer, groundwater samples could not be effectively retrieved; therefore, the Geoprobe[®] direct push equipment was pulled back into the silty sand material just above the clay layer, such that a water sample could be collected.

2.2 Groundwater Waterloo Profile Sampling

On August 31 and September 1, 2011, 8 Waterloo Advanced Profiling System[™] (Waterloo) locations were sampled along Commerce Street and on adjacent residential properties.

Similar to the vertical profiling protocol, a sample for VOC screening was collected every five feet until the top of the clay layer was encountered. The groundwater samples were collected in three 40 mL VOA vials and submitted to Stone's on-site mobile laboratory for screening. All 2011 Waterloo profiling locations are shown on Figure 2-1. Results of Stone's screening are included in Appendix C in their "Data Package for Waterloo Profiling and MobiLab Services" and presented in Section 3.1.1. A discussion of the results is included in Section 4.

In addition to groundwater samples, physiochemical parameters [e.g. pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP)] and index of hydraulic conductivity (I_k) were continuously recorded with depth during profiler advancement between sample locations within a borehole. The results of the physiochemical and I_k data are included in Appendix C in Stone's "Data Package for Waterloo Profiling and MobiLab Services" and discussed in Section 4.

2.3 October 2011 Groundwater Elevation Measurements

On October 6, 2011, a potentiometric surface survey was completed throughout AIP and adjacent residential areas. Groundwater level measurements were collected from 26 shallow overburden wells and 28 intermediate/deep overburden wells using a Geotech® electronic water level meter in general accordance with SOP-HYD-003 (QAPP). Table 2-1 presents the groundwater potentiometric surface survey data in feet above mean sea level (ft-msl). The gauging data set was coupled with the monitoring well elevation survey data to determine groundwater elevations. The interpreted potentiometric surfaces for the shallow and intermediate/deep overburden aquifer units are presented on Figure 2-2 and Figure 2-3, respectively. An assessment of groundwater elevation data is presented in Section 4.

2.4 Residential Well Research

In addition to vertical profile sampling and groundwater elevation measurements, Nobis also conducted a limited background investigation regarding residential drinking water wells in the area to address a recommendation from the 2010 Data Summary Report. The purpose of the investigation was to determine if active wells remain in the area that may be at risk for becoming a potential receptor of groundwater contamination, and to identify whether a potential hydraulic connection between the wells and groundwater beneath the Study Area exists. The investigation included the review of background documents from Vermont state agencies and

private consultants, and conversations with residential home owners. A discussion of the results is included in Section 4.

3.0 LABORATORY ANALYTICAL RESULTS

The following sections present a summary of the analytical results for samples collected during the 2011 field investigations. A discussion of the results is included in Section 4. Groundwater concentrations are compared to the GWPRs and MCLs.

3.1 Vertical and Waterloo Profiling Groundwater

3.1.1 VOCs

The results of the vertical/Waterloo profiling groundwater VOC analyses indicate the following:

- No VOCs were detected above laboratory detection limits in the vertical/Waterloo profile locations VP-32, VP-33, VP-34, VP-35, VP-37, VP-41, VP-51, VP-52, VP-53, VP-55, VP-58, or WP-07.
- One or more VOCs were detected in vertical/Waterloo profile locations VP-36, VP-38, VP-39, VP-40, VP-42 through VP-45, VP-47 through VP-50, VP-54, VP-56, VP-57, WP-01 through WP-06, and WP-08.
- Groundwater COC VOCs in exceedance of groundwater criteria include:
 - o TCE: VP-36 (6 intervals), VP-38 (2 intervals), VP-39 (5 intervals), VP-40 (2 intervals), VP-42 (2 intervals), VP-43 (3 intervals), VP-45 (3 intervals), VP-47 (4 intervals), VP-48 (4 intervals), VP-49 (5 intervals), VP-50 (5 intervals), VP-54 (3 intervals), VP-56 (2 intervals), VP-57 (3 intervals), WP-01 (5 intervals), WP-02 (2 intervals), WP-03 (3 intervals), WP-04 (2 intervals), WP-05 (2 intervals), WP-06 (4 intervals), and WP-08 (2 intervals). A maximum concentration of 58,000 µg/L observed in WP-01 at 35 ft-bgs.
 - o PCE: VP-47 (3 intervals), VP-48 (3 intervals), WP-01 (one interval), and WP-06 (2 intervals) with a maximum concentration of 83 µg/L observed in VP-48 at 30 ft-bgs.

- o cis-1,2-DCE: VP-38 (one interval), WP-01 (one interval), and WP-02 (4 intervals) with a maximum concentration of 31,000 µg/L observed in WP-02 at 30 ft-bgs.

Groundwater non-COC VOCs in exceedance of groundwater criteria include:

- 1,1-DCE detected in WP-02 (4 intervals) with a maximum concentration of 120 µg/L at 30 ft-bgs.

Figure 3-1 displays all the TCE analytical results from the 2011 vertical and Waterloo profiling event. Raw copies of all the mobile lab (EPA and Stone) and NERL results are included in Appendix B. Results of the profiling show detectable TCE concentrations ranging from 0.10 µg/L (VP-39 at 15 ft-bgs) to 58,000 µg/L (WP-01 at 35 ft-bgs). Table 3-1a provides a statistical summary of TCE at each profile location including maximum, minimum, and average concentrations as reported by the mobile and NERL labs.

Additionally, Table 3-1b and Table 3-1c provide statistical summaries for PCE and cis-1,2-DCE, respectively, at each profile location including maximum, minimum, and average concentrations as reported by the mobile and NERL labs. PCE was observed in the vertical and Waterloo profiling results at detectable concentrations ranging from 0.1 µg/L (VP-47 at 15 ft-bgs) to 83 µg/L (VP-48 at 30 ft-bgs), while cis-1,2-DCE was more prevalent at detectable concentrations ranging from 0.43 µg/L (WP-03 at 15 ft-bgs) to 31,000 µg/L (WP-02 at 30 ft-bgs). Similar to the maximum concentration of cis-1,2-DCE detected at VP-22 in 2010, WP-02 is located adjacent to the unnamed stream. The results indicate some level of reductive dechlorination during which the anaerobic conditions presented by the stream cause TCE to sequentially lose carbon atoms and form lesser chlorinated compounds such as cis-1,2-DCE.

A full analysis and discussion regarding the VOC results and trends is presented in Section 4.

3.1.2 Metals

Table 3-2 provides all total and dissolved metals results for samples collected during the 2011 vertical profile investigation.

Groundwater concentrations for *total* metals in exceedance of groundwater criteria include:

- Arsenic detected in VP-33 (20 ft-bgs), VP-35 (25 ft-bgs), VP-36 (25 ft-bgs), VP-37 (25 ft-bgs), VP-38 (30 ft-bgs), VP-40 (25 ft-bgs), VP-45 (30 ft-bgs), and VP-54 (30 ft-bgs) with a maximum concentration of 240 µg/L observed in VP-45.
- Cadmium was detected in VP-45 (30 ft-bgs), at a concentration of 27 µg/L.
- Total chromium detected in VP-33 (20 ft-bgs), VP-36 (25 ft-bgs), VP-37 (25 ft-bgs), VP-38 (30 ft-bgs), VP-40 (25 ft-bgs), VP-45 (30 ft-bgs), and VP-54 (30 ft-bgs) with a maximum concentration of 740 µg/L observed in VP-45.
- Lead detected in VP-33 (20 ft-bgs), VP-35 (25 ft-bgs), VP-36 (25 ft-bgs), VP-37 (25 ft-bgs), VP-38 (30 ft-bgs), VP-40 (25 ft-bgs), VP-45 (30 ft-bgs), and VP-54 (30 ft-bgs) with a maximum concentration of 250 µg/L observed in VP-45.
- Manganese detected in VP-33 (20 ft-bgs), VP-34 (25 ft-bgs), VP-35 (25 ft-bgs), VP-36 (25 ft-bgs), VP-37 (25 ft-bgs), VP-38 (30 ft-bgs), VP-39 (30 ft-bgs), VP-40 (25 ft-bgs), VP-42 (35 ft-bgs), VP-45 (5 and 30 ft-bgs), VP-49 (25 ft-bgs), and VP-54 (30 ft-bgs) with a maximum concentration of 24,000 µg/L observed in VP-45.
- Nickel detected in VP-33 (20 ft-bgs), VP-36 (25 ft-bgs), VP-37 (25 ft-bgs), VP-38 (30 ft-bgs), VP-40 (25 ft-bgs), VP-45 (30 ft-bgs), and VP-54 (30 ft-bgs) with a maximum concentration of 1,100 µg/L observed in VP-45.

Groundwater concentrations for *dissolved* metals in exceedance of groundwater criteria include:

- Manganese detected in VP-34 (25 ft-bgs), VP-37 (25 ft-bgs), VP-39 (30 ft-bgs), and VP-49 (25 ft-bgs) with a maximum concentration of 2,100 µg/L observed in VP-49.

Figure 3-2 displays all the total metal analytical results exceeding standard from the 2011 vertical profiling event. A full analysis and discussion regarding metals results and trends is presented in Section 4.

3.1.3 1,4-Dioxane

Table 3-3 provides all 1,4-dioxane results for samples collected during the 2011 vertical profile investigation. No results were reported above the laboratory detection limit for 1,4-dioxane.

3.2 Data Quality Assessment and Limitations

In accordance with the QAPP, a data quality assessment was performed to evaluate whether the vertical profiling data from October 2011 sampling event were suitable for use in assessing the current nature and extent of groundwater contamination. The assessment consisted of the following:

- Review of the PQOs and the sampling design.
- Review of sample collection logs.
- Review of the data validation criteria (all data was subjected to Tier I modified level data validation).
- Correlation of data results to expected values and comparison with historical data results.
- Compare results against applicable State and Federal criteria, including Vermont's Groundwater Protection Rule (GWPR), primary groundwater quality standards, and EPA Maximum Contaminant Levels (MCLs).

3.2.1 Project Quality Objectives and Sample Design

The purpose of this groundwater monitoring data collection was to characterize the current nature and extent of groundwater contamination in support of developing a revised CSM and identifying potential data gaps.

VERTICAL PROFILING

August Data:

Forty-five groundwater samples were screened at the EPA Region I's Office of Environmental Measurement and Evaluation (OEME) Laboratory for volatile organic compounds (VOCs) using a gas chromatograph (GC) equipped with a photo-ionization detector (PID) and electron capture

detector (ECD). Thirty-six groundwater samples were tested by GC/mass spectroscopy (MS) at OEME for VOCs.

Eleven groundwater samples were analyzed at the EPA OEME laboratory for 1,4-dioxane using EPA's standard operating procedure (SOP).

Eighteen groundwater samples were analyzed at the EPA OEME laboratory for total and dissolved metals. The metals scheduled for analysis included all the of the Target Analyte List (TAL) metals, minus mercury.

Sample results were compared with the VTGWPR and MCLs and are presented in Table 1-1. The Study Area COCs are listed in Table 1-1 and were discussed in Section 1.6 of this report. Action Limits used to evaluate environmental data for COCs are the numerical GWPRs and MCLs. Currently, no response action for COCs exceeding the GWPRs and MCLs has been established.

October Data:

Twenty-five samples were screened at the EPA OEME Laboratory for VOCs using a GC equipped with a PID and ECD. Four of the samples were tested by GC/MS at OEME for VOCs.

Sample results were compared with the VTGWPR and MCLs and are presented in Table 1-1. The Study Area COCs are listed in Table 1-1 and were discussed in Section 1.6 of this report. Action Limits used to evaluate environmental data for COCs are the numerical GWPRs and MCLs. Currently, no response action for COCs exceeding the GWPRs and MCLs has been established.

3.2.2 Data Validation

Data validation of the vertical profiling analytical results was conducted following the Region 1 EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses (Dec. 1996).

Full data packages were not provided by EPA OEME for review. The GC VOC screening method does not require the full calibration and method quality control (QC) sample analysis

that a full analysis would require. A sample-by-sample completeness and review of provided QC data received and impacts on results were performed.

August Data:

Screening GC VOC QC data consisted of field QC: trip blanks and field duplicates; and laboratory QC: laboratory duplicates and performance evaluation (PE) samples.

The following table summarizes the VOC screening data QC results.

QC Sample Type	QC Results
Trip Blanks	All results were non-detect for targeted analytes.
Field Duplicates	One field duplicate pair has detections for TCE only (2.2 µg/L and 1.4 µg/L) %D = 44%, meeting the QAPP QC limit of 50%. The second field duplicate sample pair was non-detected.
Lab Duplicates	One lab duplicate sample pair was analyzed with detections and all the precision data met established criteria. The remaining lab duplicates' results were non-detected.
Performance Evaluation Samples	Three PE samples were collected. In all three samples 1,1-DCE failed to be properly detected. TCE passed in each of the samples containing it, but was warning-low in one sample. The PCE result in one sample failed-low, and was warning-low in a second sample. Neither PCE nor TCE were present in the third PE sample. Other substances that were poorly detected in PE sample(s) included trans-1,2-DCE, 1,1,1-TCA, benzene, and toluene.

No problems were noted for sample preservation and analyses were performed within the established holding times. Although the QAPP addendum did not cite a revised target compound list (TCL), the EPA SOP documenting the VOC screening method identified the compounds that were subject to the SOP. This list matched the listing of compounds reported by the EPA laboratory.

If a higher-level data validation was performed, it is likely that due to the relatively poor PE performance via the screening VOC method the results for the following substances would be qualified as estimated (J/UJ): trans-1,2-dichloroethene (trans-1,2-DCE), 1,1,-dichloroethene (1,1-DCE), 1,1,1-trichloroethane (1,1,1-TCA), benzene, tetrachloroethene (PCE), and toluene. Professional judgment would be used to determine whether the main target compound

trichloroethene (TCE) would require estimation given the passable, but potentially biased-low PE results.

Laboratory GC/MS QC data consisted of field QC: trip blank samples and field duplicates; and laboratory QC: laboratory reagent blank samples, laboratory fortified blank samples (LFB), laboratory duplicate samples, matrix spike/matrix spike duplicate samples (MS/MSDs), surrogate compounds, and PE samples.

The following table summarizes the VOC GC/MS QC results.

QC Sample Type	QC Results
Trip Blanks	No detections of target analytes; common detections of acetone and methyl ethyl ketone; and one detection of tetrahydrofuran were noted.
Field Duplicates	Field duplicate pair QC results met established criteria.
Lab Reagent Blanks	No substances were detected in laboratory blank samples.
Lab Fortified Blanks	Recovery and reproducibility of lab fortified blank substances met established criteria.
Lab Duplicates	Lab duplicate results met established criteria.
Matrix Spike/Matrix Spike Duplicates	Vinyl acetate (non-target compound) was detected outside of established recovery/reproducibility criteria.
Surrogate compounds	All surrogate compounds were recovered within established criteria.
Performance Evaluation Samples	PE samples results for target compounds were all acceptable without warning. A PE sample result for 1,3-dichloropropene received a pass warning-low designation.

No problems with sample preservation or holding times were noted in any of the GC/MS sample packages. Continuing calibration verification non-conformances associated with acetone and methyl ethyl ketone were noted in sample EP0403 (trip blank sample). The analyte list in the laboratory reports does not match the target list provided in the QAPP, cyclohexane, methyl acetate, and methyl cyclohexane were not analyzed by the EPA laboratory. None of these substances is a primary target compound for this project. Additionally, numerous substances were analyzed for, but were not included on the target list provided in the QAPP.

The majority of samples were analyzed with a dilution factor (DF) of 1; however, high concentrations of TCE necessitated DFs of up to 250 times for some samples. The elevated

quantitation limits (QLs) associated with these diluted samples caused many of the results of these samples to exceed the desired QLs for the remaining substances.

Correlations between the screening VOC method and the fixed laboratory GC/MS method were performed. The following table provides a summary of the correlation.

Sample ID	GC VOC TCE µg/L	GC/MS VOC TCE µg/L	%RPD
EP0412	1700	2300	30
EP0422	ND	ND	--
EP0434	ND	ND	--
EP0438	70	100	35
EP0443	ND	ND	--
EP0451	ND	ND	--
EP0463	2.7	2.1	25
EP0467	400	410	2.5

The correlation described above suggests that the GC screening data for TCE may be slightly biased low, which is also suggested by the warning low values reported in the PE sample. However, plotting the data shows a R^2 in excess of 0.99, which suggests very good correlation between the two methods.

Laboratory GC 1,4-dioxane QC data consisted of field QC: field duplicates; and laboratory QC: laboratory reagent blank samples, LFBs, laboratory duplicates, MS/MSDs, surrogate compounds, and a PE sample.

No QC non-conformities were noted in the 1,4-dioxane data. The 1,4-dioxane PE result passed, but had a warning high score.

Laboratory total metals data QC data consisted of field QC: field duplicates; and laboratory QC: laboratory reagent blank samples, LFBs, laboratory duplicates, MS, and a PE sample.

The following table summarizes the total and dissolved metals QC results.

QC Sample Type	QC Results
Field Duplicates	Field duplicate pair QC results met established QC criteria.
Lab Reagent Blanks	Calcium and zinc were detected in one of the two reagent blank samples.
Lab Fortified Blanks	Lab fortified blank sample results met established QC criteria.
Lab Duplicates	In one laboratory duplicate sample aluminum was reported outside acceptable QC criteria. The second laboratory duplicate sample reported the following substances as being outside established QC criteria: aluminum, arsenic, chromium, cobalt, copper, iron, lead, magnesium, nickel, vanadium, and zinc.
Matrix Spikes	In each of the matrix spike samples, aluminum, iron, and manganese were each detected in excess of four times the spike amount; therefore, a percent recovery could not be established. The remaining substances were within established QC criteria.
Performance Evaluation Sample	Only lead was reported as a failed, missed contaminant.

No problems with sample preservation or holding times were noted in any of the metals samples. The analyte list in the laboratory reports does not match the target list provided in the QAPP; mercury was not analyzed by the EPA laboratory. The laboratory reported that a layer of fine material (presumed to be silt) was present in the sample containers (sample VP-3725A) scheduled for total metals analyses. It was believed that the presence of this material may have contributed to the poor recovery of substances in the laboratory duplicate sample, which caused the laboratory to estimate these results (J).

The QLs for the following metals did not meet established project goals: antimony, arsenic, beryllium, cadmium, lead, and thallium. Additionally, potassium and sodium were on the target analyte list, but were not analyzed by the EPA laboratory. Selenium was analyzed by the laboratory, but was not requested.

October Data:

GC VOC screening data consisted of field QC: trip blanks and field duplicates. Trip blanks were non-detect for target analytes. Two field duplicate pairs were collected and analyzed (EP00489/EP00490 [VP-5630A] and EP00494/EP00495 [VP-5720A]). Both were outside precision goals of <30% relative percent difference (RPD) for the one target analyte detected, trichloroethene (TCE). These results indicate variability in sampling and/or analysis. Results for

the samples and duplicates would be estimated (J) if a Tier II or III validation were completed. The only laboratory QC data presented in the reports from OEME were laboratory duplicates. The laboratory duplicates met precision acceptance criteria.

GC/MS VOC data consisted of no field QC samples. Laboratory QC reported in EPA's report included a laboratory blank, LFB, a laboratory duplicate, and matrix spikes. All laboratory QC samples were within acceptance criteria except for bromomethane which recovered high in one of two LFBs. Because bromomethane was not detected in the associated samples, the data was not affected.

The laboratory qualified several samples as estimated (J) due to preservation outside of acceptance criteria. The pH of the samples was higher than 2 in the following samples for GC VOC screening: EP00482 (VP-5525A), EP00487 (VP-5620A), EP00504 (VP-5830A), and EP00505 (VP-5833A). The pH of the samples was higher than 2 in the following samples for GC/MS analysis: EP00489 (VP-5630A) [pH=4] and EP00491 (VP-5635A) [pH=6]. All samples were pre-preserved in the field with hydrochloric acid. It is also interesting to note that samples EP00489 and EP00491 had acceptable pHs during the GC VOC screening. It suggests that there is changing pH over time. Because all samples were analyzed within 2 days of collection, no qualification of the sample results is needed.

The GC VOC analyte list matches the QAPP analyte list for this analysis. However, the GC/MS VOC analyte list does not match the QAPP analyte list for the full analysis (Table 7-2 of the QAPP). The following analytes were not reported by the EPA OEME: 1,4-dioxane, cyclohexane, methyl acetate, and methyl cyclohexane. As these analytes do not have VT GWPRs or EPA MCLs, they are not considered critical to the project quality objectives. Twenty-one additional analytes that were not listed on Table 7-2 of the QAPP were reported using GC/MS by EPA OEME.

All samples were analyzed at a dilution factor (DF) of 1 by GC VOC. The reporting limits (RLs) achieve the VT GWPRs and EPA MCLs. However, samples EP00489 (VP-5630A) [DF=20], EP00496 (VP-5725A) [DF=10], and EP00497 (VP-5730A) [DF=20] exceed VT GWPRs and EPA MCLs for the following compounds due to elevated RLs from the dilutions required for high concentrations of trichloroethene in the samples: 1,1,2-trichloroethane, 1,1-dichloroethene, 1,2-dichloroethane, 1,2-dichloropropane, benzene, carbon tetrachloride, tetrachloroethene, and

vinyl chloride. Methylene chloride is also exceeded for VT GWPRs only and bromomethane is exceeded for EP00489 and EP00497 for VT GWPRs only.

Correlation between GC VOC results and GC/MS VOC results for trichloroethene was also reviewed. Trichloroethene detected results by GC VOC were found to be much higher than by GC/MS.

Sample ID	GC VOC TCE µg/L	GC/MS VOC TCE µg/L	%RPD
EP00489	430	120	112
EP00491	ND at 1	ND at 1	0
EP00496	320	170	61
EP00497	640	230	94

As GC/MS analysis is much more reliable, the GC VOC results should be considered biased high.

3.2.3 Data Quality Assessment

Based on this assessment it was determined that the screening-level August VOC data, as reported by the laboratory, are sufficient and usable for screening evaluation purposes. Despite the generally positive correlation between screening and fixed laboratory analyses, the failure of the screening method to adequately report several of the chlorinated compounds in PE samples may suggest that the laboratory screening method underreported the concentrations of target compounds.

The fixed laboratory VOC and 1,4-dioxane data is of sufficient quality to be used to support decision making for this project. Due to the presence of a layer of silt in the sample containers, and based upon the poor recovery of certain metals in the laboratory duplicate sample, the total metals data may be estimated due to matrix interference. Additionally, lead was not detected in the PE sample, which caused a failure-action low condition, suggesting an underreporting of lead concentrations. The dissolved metals samples did not contain this fine material, and therefore, was not affected by the potential matrix effects.

Based on this assessment it was determined that the October data, as reported by the laboratory, are sufficient and usable for this and subsequent reports and for the purposes of the project quality objectives.

3.2.4 Data Limitations

A review of field sampling techniques, sample preparation and handling methods and the analytical results has been completed.

Vertical Profiling

Validation of the August 2011 data was limited to reported results by EPA OEME (i.e., a limited report; not a full documentation package), and limited to the QC data that was reported and summarized above. The majority of the screening-level GC VOC data should be considered estimated due to the numerous action-low/warning-low PE scores. The GC/MS data is of much higher quality than the screening level data, as the QC results and PE sample scores were primarily within established limits. A comparison of the screening data to the GC/MS data indicates that the screening data may be biased slightly low, but that the overall correlation of screening data to fixed laboratory analyses was good.

Validation of the October 2011 data was limited to reported results by EPA OEME (i.e., a limited report; not a full documentation package) and limited to the QC data that was reported and discussed above. The majority of the data was from GC VOC screening results and should be considered estimated at best as the correlation with confirmation GC/MS VOC analysis indicates the results by GC are considerably biased high.

4.0 RESULTS DISCUSSION AND CONCEPTUAL SITE MODEL UPDATE SUMMARY

Presented below is a summary and interpretation of the data collected during the 2011 investigations. This data is used to help update the Draft CSM Report (Nobis, 2009b) with respect to groundwater flow direction, geology/hydrogeology, and nature and extent of contamination for groundwater.

4.1 Groundwater Flow Directions and Properties

With respect to groundwater flow directions in the shallow and deep overburden, the 2011 measurements (Figure 2-1 and Figure 2-2) continue to demonstrate overburden groundwater to the west of the Study Area flowing generally southwesterly, and groundwater to the east flowing in a south/southeasterly direction toward the unnamed stream (discharge boundary), as previously reported in the CSM and historical evaluations. This data set is consistent with previous interpretations including the most recent set of data from 2010. It appears the unnamed stream is a discharge zone for shallow groundwater, as noted by the elevated concentrations of TCE and DCE in surface water in the unnamed stream during past sampling events and the 2010 porewater sampling results. There is only one viable bedrock well at the Study Area, thus making it difficult to interpret groundwater flow direction within the bedrock. Bedrock groundwater flow direction interpretation in the region is based on literature interpretations and is presented in the CSM.

With respect to groundwater properties, the 2010 Data Summary Report calculated an average groundwater velocity of 0.108 feet/day, or 39.4 feet/year, across the Study Area. The report also calculated vertical gradients and concluded there is no consistent trend from well couplet to couplet moving across the Study Area and that vertical flow has little influence on TCE migration through the aquifer. Refer to the 2010 Data Summary Report for a more detailed discussion regarding these properties and their calculations.

4.2 Nature and Extent of Contamination

4.2.1 Overburden Groundwater VOCs

The 2011 groundwater vertical and Waterloo analytical data was used to address data gaps with respect to overburden groundwater contaminant delineation as identified in the 2010 Data Summary Report. The majority of the profile locations were located along suspected clean edges of the known TCE plume in order to fully delineate the extent of the contamination. Due to the presence of an on-site mobile laboratory generating real-time results and quick analytical turnaround times by the fixed laboratory, in-field proposed location adjustments could be made to define the clean zones in the event a location contained groundwater exceeding applicable VOC standards.

According to the 2011 results displayed in Figure 3-1, vertical profile locations VP-32, 33, 51, 52, and 53 have successfully delineated the northern boundary of the plume. Additionally, VP-34, 35, 37, and 55 have successfully delineated the majority of the eastern boundary (east of the unnamed stream). Although data south of VP-55 and east of the unnamed stream are unavailable, groundwater concentrations in these areas are inferred to decline to below standard in close proximity to VP-55. This conclusion is based on the declining trend in TCE concentrations observed in VP-40 when compared to 2010 and 2011 data to the north and the theory that the unnamed stream is acting as a discharge boundary.

The southern boundary appears to be partially delineated as evident by non-detections observed in VP-41 and previous non-detect results from monitoring wells OE-2A (deep overburden) and OE-2B (shallow overburden) located to the south. Above standard concentrations are observed in VP-56 (maximum of 230 µg/L at 30 ft-bgs). However, similar to the eastern plume boundary, concentrations are inferred to decline in close proximity to VP-56 based on the declining trends in TCE concentrations to the north and the presence of the unnamed stream. It is believed the remaining areas of uncertainty with regards to the eastern and southern plume boundaries do not represent significant data gaps at this time. Areas to the southwest are also delineated as evident by non-detects in WP-07 and non-detect or below standard results in VP-44.

The results presented in the 2010 Data Summary Report demonstrate the presence of a large TCE plume in overburden groundwater throughout the length of Commerce Street/AIP and extending into adjacent residential areas to the west. The additional 2011 profiling data further confirms this observation as evident by results from Commerce Street locations such as VP-36, VP-54, and WP-01, and locations on residential properties such as VP-48, VP-50, and WP-08 (Figure 3-1).

The remaining areas of uncertainty with respect to plume delineation occur in western portions of the Study Area along Shunpike Road (e.g. VP-49, VP-50, VP-57, WP-05, and WP-06) and properties along the west side of South Brownell Road (e.g. VP-45 and VP-47) where TCE concentrations remain in excess of applicable standards. Of particular note are TCE concentrations exceeding standard in shallow overburden groundwater (less than or equal to 20 ft-bgs), particularly in VP-50 and WP-06. A similar result was observed in 2010 groundwater samples collected from VP-24 and MW-08S (installed as a result of VP-24). Additionally, while

all results from VP-58 were non-detect, WP-05 (the next westernmost point) still contained TCE concentrations exceeding standard. However, given the general trend of declining concentrations moving west and the overall reduced magnitude of TCE in WP-05 (in comparison to “hot-spot” locations such as VP-24 and WP-06), it is reasonable to conclude that the TCE plume terminates in closer proximity to WP-05 to the west, rather than closer to VP-58 located 1,500 feet west on Shunpike Road from WP-05.

Figure 4-1a and Figure 4-1b display 2010 and 2011 vertical/Waterloo profiling TCE concentrations at 15 and 20 ft-bgs, respectively. At both depths, four locations west of South Brownell road exhibit concentrations exceeding 100 µg/L compared to only two locations to the east (VP-38 and WP-03). Given that no locations between these two areas exhibit concentrations exceeding 100 µg/L, coupled with known shallow overburden groundwater flow directions (Section 4.1), it is possible that a source separate from that contributing to the contamination observed along Commerce Street and AIP exists in the areas along Shunpike Road and west of South Brownell Road.

Figure 4-2a through Figure 4-2g display TCE concentration contours based on the 2010 and 2011 vertical/Waterloo profile results. Similar to Figure 4-1a and Figure 4-1b, Figure 4-2a, Figure 4-2b, Figure and 4-2c depict dissolved-phased TCE residing in the shallow overburden groundwater west of South Brownell Road and southeast portions of Commerce Street. These figures show two distinct areas of TCE contaminated groundwater. Additional evidence of two sources is the detection of TCE above criteria at 10 ft-bgs along Shunpike Road that is not observed along Commerce Street and throughout AIP (were data is available).

Additionally, Figure 4-2d through Figure 4-2g confirm that the majority of the VOC contamination throughout Commerce Street and AIP resides in the intermediate and deep overburden groundwater, particularly between 30 and 40 feet-bgs (Figure 4-e, Figure 4-2f, and Figure 4-2g). As discussed in the 2010 Data Summary report, the occurrence of TCE at depth is a result of the dense nature (i.e. heavier than water) of dissolved phase chlorinated VOCs as they have had sufficient time to migrate vertically downward through the aquifer from the time of any ground surface release.

Figure 4-3, Figure 4-4, and Figure 4-5 display cross-sectional contaminant plume outlines that were presented in the 2010 Data Summary Report and have been updated with the 2011

vertical/Waterloo profile TCE results, along transects A-A' , B-B' and C-C' (see Figure 1-2), respectively. These cross-sections clearly depict the highest concentrations of TCE in the intermediate/deep overburden groundwater, especially in central portions along Commerce Street. In Figure 4-3, of particular interest are the high concentrations in the vicinity of VP-16 (MW-04D) and VP-19 (MW-05D/D2). Both locations are situated within an apparent broad clay depression with a relief in the top surface of the clay of 9 feet between VP-13 and VP-18. TCE results of these magnitudes are similar to those observed by Geo Trans in the same areas during 1999 and 2000 and Nobis during 2010. The TCE results and depression together suggests the clay depression is acting to not only retard vertical migration of contaminants, but to at least partially limit horizontal migration as well, as indicated by concentrations of far lesser magnitudes in southerly situated wells (e.g. MW-07M) and new vertical profile locations (e.g. VP-39 and VP-56). It should be noted that elevated TCE concentrations are also observed in areas outside of the interpreted clay depression (e.g. MW-06M/D), thus indicating that other pathways and mechanisms exist to carry the contaminated groundwater away from the suspected source area(s).

The 2011 vertical/Waterloo profile analytical results, coupled with the 2010 results, allowed for the creation of two additional cross-sections along western portions of the Study Area. Figure 4-6 and Figure 4-7 depict cross-sections of the TCE plume along lines D-D' and E-E', respectively, shown on Figure 1-2. Figure 4-6, trending north-south to the east of South Brownell Road, depicts the plume residing at approximately 20 to 45 ft-bgs. These depths are consistent with contaminant depths observed throughout Commerce Street/AIP and areas along Kirby Lane, leading to the conclusion that the contamination is an extension of the plume originating from the east. Figure 4-2f and Figure 4-2g confirm the connectivity of the contamination displayed in Figure 4-6 with Commerce Street/AIP and Kirby Lane areas. Figure 4-6 also shows the delineation of the contamination to the north and south as represented by detections below standard in VP-52 and VP-44, respectively.

Figure 4-7 trends north-south to the west of South Brownell Road. While the cross-section shows TCE exceeding criteria as deep as 35 ft-bgs, it also shows contamination as shallow as 10 and 15 ft-bgs, which is not the case in Figure 4-6. Again, this is further evidence that contamination in this part of the Study Area likely originates from a source separate from that contributing to Commerce Street/AIP contamination. Similar to Figure 4-6, Figure 4-7 also

shows the delineation of the contamination to the north and south as represented by detections below standard in VP-51 and WP-07, respectively.

Additional evidence of a possible source to the west is the detection of PCE above standard at multiple locations west of Kirby Lane. Between 2010 and 2011, 20 of the 65 vertical/Waterloo profiling locations had at least one PCE detection. Of the 20, 7 had at least one detection above standard (5 µg/L). Below is a breakdown of where the exceedances occurred and the maximum concentration of PCE detected. All but one is located west of Commerce Street and Kirby Lane.

- VP-24 (Shunpike Rd.): 14 µg/L
- VP-26 (west of Kirby Lane.): 9.3 µg/L
- VP-27 (west of Kirby Lane.): 26 µg/L
- VP-47 (S. Brownell Rd./Kirby Lane.): 14 µg/L
- VP-48 (S. Brownell Rd.): 83 µg/L
- WP-01 (Commerce St.): 9.6 µg/L
- WP-06 (Shunpike Rd.): 60 µg/L

Also, the December 2010 groundwater monitoring well data shows PCE above standard in only MW-08S and MW-08M (located along Shunpike Road) at concentrations of 28 and 25 µg/L, respectively. PCE was also detected in MI-08, AL-02, BM-03D, MW-05D, and MW-06M but at concentrations no greater than 3.5 µg/L (MW-06M). The presence of PCE concentrations above standard in areas west of Commerce Street/AIP (in particular along Shunpike Road) puts a signature on the groundwater quality separating it from conditions generally observed along Commerce Street.

It should be noted that while it is possible that two different TCE sources are present, the generated plumes appear to co-mingle, especially at intermediate depths. This observation is consistent with groundwater (both shallow and deep overburden) in northern parts of Commerce Street/AIP flowing southwest towards Shunpike and South Brownell Roads. This co-mingling of the plumes is displayed in Figure 4-2c through Figure 4-2f.

4.2.2 Overburden Groundwater Metals

Metals continue to be observed throughout the Study Area at concentrations above their respective GWPRs/MCLs. The 2010 Data Summary Report stated the most prevalent metal detected above the respective GWPR/MCL was cadmium. However, the 2011 total metals data also identifies arsenic, chromium (total), lead, manganese, and nickel present in groundwater at levels above their respective GWPRs/MCLs. Figure 4-8 depicts the area to the southwest of the former Mitec property that contains cadmium concentrations greater than the MCL of 5 µg/L. Figure 4-9 displays the cross-sectional contaminant plume outline for cadmium based on Fall 2010 groundwater results along transect F-F' (see Figure 1-2).

While multiple 2011 total metals concentrations are detected exceeding standard, the dissolved metals results show only manganese to be above standard. This is an indication that the sediment in the unfiltered total metals samples is likely contributing to the observed elevated concentrations, and not the dissolved phase groundwater portion itself. In most cases, this contributing sediment contamination is likely naturally occurring, which is consistent with natural background subsurface conditions encountered at many other sites. Given the naturally occurring nature of metals in the subsurface, coupled with their relative immobility compared to VOCs (especially with the minimal hydraulic gradient across the Study Area), metals in groundwater do not pose an immediate threat to human health and the environment at this time.

4.2.3 Overburden Groundwater 1,4-Dioxane

No sample results were reported above laboratory method detection limits. Therefore, 1,4-dioxane does not pose an immediate threat to human health and the environment at this time.

4.3 Contaminant Mass Estimations

Based on additional 2011 vertical profiling analytical data, the 2010 contaminant mass estimate for dissolved-phase TCE beneath the Study Area was re-calculated. The additional 26 vertical profile and 8 Waterloo profile locations provide a more robust data set capable of producing a more refined estimate than the 2010 calculation. The estimate was based on the following assumptions:

- There are two TCE plumes within the investigation area, one is beneath Commerce Street, the other is west of South Brownell Avenue in the vicinity of the intersection with Shunpike Road; see Figure 4-2b.
- Each plume's area is assumed to be the area within the 5 µg/L contour for dissolved-phase TCE, as shown on the Figure 4-2 series.
- The aquifer material generally consists of silty sand; the porosity is assumed to be 20 percent.
- TCE that may be present in unsaturated soil, NAPL (if present) and other detected VOCs were not included in this calculation.
- Beginning at the 25 ft interval and continuing down, the west limit of the Commerce Street plume is defined by the east edge of South Brownell Avenue. Above the 25 ft interval the two distinct plumes are visible, as shown on Figure 4-2a and Figure 4-2b. Setting a limit was not necessary at these intervals to distinguish the two plumes.

Calculations were performed for the Commerce Street plume and for the plume area west of South Brownell Avenue. Calculations made use of two zones within the 5 µg/L contour for each 5 ft interval of each plume and then added together to obtain a total contaminant mass estimate for each plume:

Inner Zone: the Inner Zone consists of all the area inside the 1,000 µg/L contour shown on the Figure 4-2 series. The average concentration of TCE in groundwater was assumed to equal the median of 1,000 µg/L and the maximum TCE concentration of each interval, for each plume. This value ranged from 1,100 µg/L to 38,000 µg/L.

Outer Zone: The Outer Zone consists of all the area between the 5 µg/L and the 1,000 µg/L contours shown on the Figure 4-2 series. The average concentration of TCE in groundwater was assumed to equal the median of 5 µg/L and 1,000 µg/L. This value is 503 µg/L, except for the 10 ft interval where 53 µg/L was used (did not have a concentration exceeding 69 µg/L at the 10 ft interval, therefore the median of 5 µg/L and 1,000 µg/L was used).

To perform the calculation, the area of each zone for both plumes by interval was estimated using GIS software (values are shown in Table 4-1); volume was obtained by multiplying the areas by 5 ft (the thickness of each interval). These volumes were then multiplied by the assumed porosity of 20 percent to obtain the volume of groundwater in each of the zones (assuming full saturation). After converting cubic feet to liters, the groundwater volumes were multiplied by the median TCE dissolved phase concentration (as described above) for each zone to obtain estimates for contaminant mass. The estimated mass for the combined Inner Zones of 2,121 kg, and the estimated mass for the combined Outer Zones of 103 kg, equals a total of 2,224 kg within the Commerce Street plume. The plume west of South Brownell Avenue had an estimated mass for the combined Inner Zones of 20 kg, and an estimated mass for the combined Outer Zones of 50 kg, for a total of 70 kg. The 2011 contaminant mass estimate of the combined plumes in the site investigation area is 2,294 kg compared to 4,421 kg calculated in 2010.

Inaccuracies in the above calculations result from the assumption that the median concentrations estimated for the inner and outer zones apply to the entire estimated area of each zone. It is also acknowledged that heterogeneities in subsurface characteristics throughout the Study Area related to hydraulic conductivity and porosity may also contribute to certain inaccuracies.

4.4 Waterloo Profiling Index of Hydraulic Conductivity (I_k) and Physiochemical Results

In addition to groundwater chemical analytical results, the 2011 Waterloo profiling provided valuable physiochemical and conductivity data in regards to Study Area characterization. During each Waterloo profiler advancement, specific conductivity, dissolved oxygen, pH, oxidation-reduction potential, and index of hydraulic conductivity (I_k) were continuously recorded and plotted against depth to produce the logs included with Stone's report in Appendix C.

4.4.1 Index of Hydraulic Conductivity (I_k)

The I_k (i.e. a measure of the relative zones of high and low hydraulic conductivity) data collected provided valuable information with regard to understanding subsurface soil conditions and identifying the stratigraphic unit samples were being collected from. The I_k data was primarily

used to identify the clay layer at each point to assure the profiler did not penetrate the surface too deeply and potentially carry contamination into a deeper zone. During advancement, the I_K would decrease with depth as soils became finer and less conductive and sharply decline once the clay surface was encountered. In addition to being careful not to carry contamination to greater depths, determination of the clay surface helped prohibit clogging of the profiler and assured the deepest sample could be attained.

Section 3.0 of Stone's report plots I_K versus VOC concentrations. These plots (e.g. WP-01 and WP-04) generally confirm that the highest VOC concentrations occur in the deeper, finer silty sands. In some cases, groundwater was collected from within the clay (e.g. WP-06 and WP-08) resulting in concentrations below criteria versus concentrations that were significantly above criteria at higher depths. This helps confirm that the clay unit is acting as a natural barrier to retard vertical migration of contaminants into deeper zones, such as bedrock, which may impact potential future drinking water sources.

In addition to being used during Waterloo advancement, the I_K data can be applied to future investigative efforts to aid in selecting optimal depths for additional groundwater and soil sampling, and monitoring well placement.

4.4.2 Physiochemical Parameters

Physiochemical data collected during Waterloo profiling included specific conductance, which ranged from 193 (WP-08) to 4,871 (WP-05) $\mu\text{S}/\text{cm}$; dissolved oxygen, which ranged from 0.52 (WP-03) to 5.48 (WP-08) mg/L ; pH which ranged from above 5.37 (WP-08) (and usually above 6) to 7.84 (WP-04); and oxidation/reduction potential, which ranged from -140 (WP-06) to 168 (WP-08) mV . In general, the specific conductance and pH decreased and increased with depth, respectively.

4.5 Background Research

Munson Earth Movers - 85 Shunpike Road (Lot 16-10, Figure 1-2)

Available environmental information was reviewed for the property located at 85 Shunpike Road (formerly 20 Shunpike Road). The property is listed in the VTDEC database of hazardous waste sites ID982332. It is currently classified Site Management Activity Completed (SMAC)

and was closed on August 1, 1998. The site was owned by R. J. Colton Inc. from 1987 until December 1997 when the company went bankrupt. During that span of 10 years the site was used as a heavy equipment service and storage facility. A Phase I and II site assessment was performed in December of 1997 by Johnson Company, Inc. of Montpelier, Vermont.

The Phase I and II report was prepared for Munson Earth Movers (current owner) who was seeking to acquire the property. The site was listed on the DEC's spills list ID WMD297 after an anonymous tip from a concerned worker. The worker was concerned that hazardous waste on-site was not being stored properly as some drums were tipped over and leaking. The DEC inspected the site August 29, 1997 and did not recommend a cleanup action due to the impending bankruptcy. It is unknown what was in the drums. The site also had 3 underground storage tanks (USTs); 1 for gas and 1 for diesel that had monitoring wells installed near them to detect leakage. The third UST was used for waste oil and was connected to the floor drain in the service bay of the building. In between the tank in the drain there was an oil water separator that was also connected to municipal sewage. It was learned from the DEC web database that the waste oil tank was replaced in 1998, and the other 2 USTs were removed in 2008. No analytical data were found for the UST activities. The repair bay contained a parts washer, and a former worker stated that solvents were used. Drums and construction debris were stored on the northern part of the property. Empty paint, oil and anti-freeze containers were also found in this area.

It was noted in the Phase I and II report that staining and stressed vegetation was observed in the vicinity of the waste oil UST and pipe. Based on the sampling design of the site during the assessment it is possible that contaminants leaking from the waste oil UST could have been missed. It is also possible that significant amounts of solvent ended up in the UST via the floor drain. It was also noted that the on-site assessment was performed in December and snow on the ground made it difficult to assess soil staining and other visual observations of the entire site.

Soil, groundwater, and one surface water sample were collected and analyzed for VOCs with results coming back non-detect for all analytes except methyl tert-butyl-ether (MTBE). MTBE was detected in two groundwater samples at concentrations below the Vermont GWPR of 40 µg/L.

Four Seasons Garden Center – 472 Marshall Avenue (Lot 69-72, Figure 1-2)

An existing private well was deepened and installed in 2002 at the Four Seasons Garden Center on Marshall Ave. The well was installed at a depth of 215 ft-bgs. Six-inch steel casing was installed to 192 ft-bgs and was sealed with a shoe and grout bottom. The well yields 120 gallons per minute as determined by a 3 hour pump test. Well use is classified as agricultural and it is assumed that groundwater from the well is only used to water the stock of plants at the nursery. The well is located to the south of the Commerce Street plume, on the east side of the Muddy Brook tributaries. The well screen is set in a layer of water-bearing gravel and sand that is between two limestone layers. It is unknown how long the well was in service or what depth it was set at prior to 2002.

South Brownell Road

Information received from a handful of homeowners along south Brownell Road indicates that most if not all of the homes along the east side of the street from Kirby Lane down to Omega Drive have sump pumps installed (Figure 1-2). The pumps are either installed within the home or outside next to the foundation. It appears that most of the pumps run constantly. Some of the sumps discharge to the ground surface while others are tied into the town's sewer or drainage systems. These pumps may have over their lifetime created an influence great enough to draw the Commerce Street plume and the suspected second plume from Shunpike to a convergence area along south Brownell Road.

Nancy Bates (Lot 3-30, Figure 1-2) disclosed that there are numerous wells on her property. Some were installed as part of a state-sponsored action to monitor the effectiveness of a VOC vapor mitigation system installed in the basement of the property; others were put in by Ms. Bates herself in support of legal litigation. The current condition of these wells is unknown.

Additionally, the resident at 1051 South Brownell Road (Lot 3-48, Figure 1-2) informed Nobis of a former water supply well on his lot and allowed for Nobis to inspect it. The former well is located in the basement of the residence, under the stairs. It was observed that the well is no longer active and has been disconnected from the house. It was also observed that the well had not been decommissioned but, due to the fittings still in place on the top of the well,

measurements of depth to water and total depth could not be taken. The resident also informed Nobis that he uses a sump pump, located in his garage.

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The data collected during 2011 provided useful information and the ability to update the Conceptual Site Model for the Site. The additional vertical and Waterloo profiling locations successfully addressed data gaps presented in the 2008 and 2010 Data Summary Reports with respect to horizontal and vertical VOC and metals groundwater contaminant distribution.

5.1 Summary and Conclusions

- Groundwater potentiometric surfaces indicate that overburden groundwater east of Commerce Street flows to the south/southeast toward the unnamed stream, and groundwater west of Commerce Street flows generally to the southwest.
- Groundwater analytical results from vertical and Waterloo profiling sampling continue to confirm the presence of a large dissolved TCE plume throughout AIP and adjacent residential areas to the west/southwest.
- Groundwater vertical profiling results confirm that the majority of the contaminated groundwater resides in the intermediate/deep overburden (> 20 ft-bgs) but above the clay layer.
- The extent of TCE contamination appears to be fully delineated to the north, east, and southwest of Commerce Street. Additional profiling results to the south (VP-56) and west (WP-05) confirm the continuing presence of TCE above criteria. However, the declining trend of concentrations in these areas makes it reasonable to conclude that the TCE terminates in close proximity to these locations.
- Additional data to the west of South Brownell and elevated TCE concentrations detected in the shallow groundwater suggests there is a source of TCE groundwater contamination separate from that observed along Commerce Street and adjacent residential areas.

- A rough estimate of the contaminant mass, based on the current data and some general assumptions, indicates that approximately 2,294 kg of TCE is present in the groundwater beneath the Commerce Street Plume Site and areas to the west.
- Based on the available data it is possible that a second source of TCE exists along the western portion of the Study Area, based on the presence of contamination at shallow depths and the presence of PCE in this area.
- Metals continue to be observed throughout the Study Area at concentrations above their respective GWPRs/MCLs. The most prevalent metals detected above the respective GWPR/MCL are cadmium and arsenic.
- At this time, potential data gaps include: 1) unknown history of operations and chemical usage at properties in the vicinity of MW-08; 2) soil conditions and presence or absence of NAPL in the upper portion of the clay layer; 3) soil conditions in the vicinity of MW-8 and 4) comprehensive hydrogeologic conditions and connections of the unnamed stream.

5.2 Recommendations

Recommended measures to address the potential data gaps based on the 2010 and 2011 investigations are presented below:

- The installation of up to 2 bedrock monitoring wells should be performed based on the detected concentrations (up to 57 µg/L) in the existing bedrock well BR-1 in 2010.
- Additional investigations should be performed in the vicinity of the unnamed stream to help determine if groundwater is in fact discharging to the stream. This could include the installation of piezometer pairs in the stream bank, staff gauges, and the installation of well couplets to the east of the stream to evaluate gradients and contaminant levels. In addition, a round of surface water sampling should be performed to evaluate the current conditions to evaluate potential impacts to the surrounding ecosystem.

- Additional investigations to locate the continuing source of the dissolved plume should be performed. Investigations should include additional soil samples in the vicinity of suspected areas where residual DNAPL could be present, specifically in the upper clay layer, as well as a review of the history of waste disposal at the Site.
- Continue to perform bi-annual groundwater sampling to monitor conditions and migrations trends.
- In order to complete the Remedial Investigation process, the Human Health and Ecological Risk Assessments should be performed.
- Based on the somewhat contained nature of the dissolved plume (limited evidence of migration past the unnamed stream) and the concentrations present consideration of potential remedial options should be considered. A screening and evaluation of remedial options could be performed based on the current data and presented to EPA in a Technical Memorandum for consideration.
- Although there is evidence that support the presence of a second source of contamination, additional investigations should be conducted to confirm the TCE on the western portion of the Study Area is or is not directly related to the Commerce Street Plume. These investigations should include a limited environmental forensic study, the performance of soil borings, and installation of additional monitoring wells. Details of each activity are described below:
 - Forensics: Perform a limited forensics study utilizing techniques such as chlorofluorocarbon and/or tritium dating to determine the minimum age (e.g. estimate time frame of contaminant release) of the chlorinated solvent plume. Additional techniques for dating plume ages/release times including chemical degradation models, and groundwater modeling could be utilized to assist with this study.
 - Borings and wells: Complete up to 6 soil borings to characterize soil conditions and quality, and assess the potential presence for NAPL; install 4 monitoring

wells (i.e. 2 couplets) to monitor water quality in the shallow and deep overburden aquifers, and assess vertical gradients in the area.

- In addition to these investigations, efforts should continue to evaluate for the presence of sump pumps, water wells or any preferential pathways on the western portion of the Study Area to develop a better understanding of subsurface hydraulic connections.

6.0 REFERENCES

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- Vermont AEC, Waste Management Division, 1986. Draft Report on Investigations of Contamination Emanating from the Alling Industrial Park. February, 1986.

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Table 1-1
Groundwater Contaminants of Concern
Commerce Street Plume Superfund Site
Williston, Vermont

Contaminant of Concern	VT GWPR (µg/L)	MCL (µg/L)
Trichlorethene	5	5
Tetrachloroethene	5	5
cis-1,2-Dichloroethene	70	70

Notes:

All concentrations listed in micrograms per liter (µg/L).

MCL – Federal Maximum Contaminant Level: EPA 816-F-02-013 (July 2002)

VT GWPR - Vermont Groundwater Protection Rule Goal (February 1, 2005)

Table 2-1
October 2011 Groundwater Elevation Measurements
Commerce Street Plume Superfund Site
Williston, Vermont
Page 1 of 2

Well ID	Reference Elevation (ft msl)	October 2011	
		Depth to Water (ft TOC)	Water Elevation (ft msl)
Shallow Overburden			
ASI-02S	338.6	3.61	334.99
ASI-03S	338.7	5.65	333.05
ASI-04S	338.5	5.85	332.65
ASI-05S	338.2	5.89	332.31
ASI-08S	337.7	7.25	330.45
ASI-11S	339.7	2.88	336.82
ASI-13S	341.0	5.60	335.40
ASI-14S	339.7	5.14	334.56
ASI-15S	341.0	4.86	336.14
ASI-16S	343.2	8.21	334.99
ASI-22S	337.1	6.19	330.91
ASI-23S	341.7	7.45	334.25
AL-12	345.6	7.84	337.75
AL-14	343.3	5.94	337.36
AL-15	342.9	6.37	336.53
ARC-3	340.2	3.10	337.10
BF-4	340.5	7.28	333.22
BM-3S	342.5	6.16	336.34
BW-13S	340.8	4.00	336.80
MI-1	342.6	5.48	337.08
MI-2	342.3	5.21	337.09
MI-8	341.6	4.99	336.61
OE-2B	337.9	6.11	331.79
PH-3A	337.7	4.11	333.59
MW-08S	334.6	1.18	333.46
MW-11S	343.5	5.53	337.96
Intermediate/Deep Overburden			
AL-02	341.9	6.75	335.10
ASI-02D2	339.0	6.01	332.99
ASI-03D2	337.3	4.50	332.76
ASI-04D2	338.2	6.50	331.70
ASI-05D2	338.4	6.09	332.31
ASI-08D	336.3	5.76	330.54
ASI-11D2	337.8	1.44	336.36
ASI-13D	340.4	4.77	335.63
ASI-14D2	339.8	5.33	334.47
ASI-15D2	341.3	5.48	335.82
ASI-16D2	342.3	7.22	335.08
ASI-22D	336.0	5.93	330.07
ASI-23D2	340.3	6.15	334.15
BM-3D	341.9	5.23	336.67

Table 2-1
October 2011 Groundwater Elevation Measurements
Commerce Street Plume Superfund Site
Williston, Vermont
Page 2 of 2

Well ID	Reference Elevation (ft msl)	October 2011	
		Depth to Water (ft TOC)	Water Elevation (ft msl)
Intermediate/Deep Overburden (cont'd)			
MW-01D	339.4	1.86	337.57
MW-02M	339.1	2.41	336.66
MW-03D	342.9	5.96	336.94
MW-04D	338.6	2.83	335.81
MW-05D	339.1	4.06	335.05
MW-05D2	338.9	3.89	334.98
MW-06M	337.2	5.31	331.92
MW-06D	337.3	5.34	331.96
MW-07M	334.6	5.12	329.52
MW-08M	334.6	1.20	333.39
MW-09M	343.2	8.43	334.75
MW-09D	343.3	8.52	334.74
MW-10D	336.1	2.55	333.56
OE-2A	337.9	6.19	331.71

Notes:

ft TOC = feet below top of casing

ft MSL = feet above mean sea level

"-" = not measured

Table 3-1a
2011 Groundwater Vertical Waterloo Profiling TCE Statistical Summary by Location
Commerce Street Plume Superfund Site
Williston, Vermont

	Freq. Det.	% Detect	Average Detection	Min (depth)	Max (depth)	St. Dev.
VP-32	0 / 6	0%				
VP-33	0 / 8	0%				
VP-34	0 / 6	0%				
VP-35	0 / 5	0%				
VP-36	6 / 6	100%	3,084	11 (20)	13,000 (30)	5,024
VP-37	0 / 5	0%				
VP-38	4 / 5	80%	1,951	2.2 (30)	6,100 (15)	2,879
VP-39	6 / 6	100%	262	0.1 (15)	1,130 (30)	450
VP-40	2 / 4	50%	85	70 (25)	100 (30)	21
VP-41	0 / 6	0%				
VP-42	3 / 7	43%	36	0.6 (45)	72 (30)	36
VP-43	4 / 8	50%	220	0.6 (25)	805 (35)	391
VP-44	1 / 5	20%	2.7	2.7 (30)	2.7 (30)	
VP-45	5 / 6	83%	131	1.3 (5)	525 (15)	224
VP-47	6 / 7	86%	296	1.6 (45)	1,370 (35)	533
VP-48	6 / 7	86%	1,385	2.2 (45)	3,900 (35)	1,454
VP-49	5 / 7	71%	197	35 (25)	440 (30)	201
VP-50	5 / 6	83%	458	18 (35)	950 (15)	405
VP-51	0 / 7	0%				
VP-52	0 / 7	0%				
VP-53	0 / 7	0%				
VP-54	4 / 6	67%	3,284	4.8 (25)	10,000 (35)	4,616
VP-55	0 / 4	0%				
VP-56	2 / 7	29%	200	170 (25)	230 (30)	42
VP-57	4 / 7	57%	206	1.3 (20)	640 (30)	299
VP-58	0 / 6	0%				
WP-01	5 / 7	71%	13,803	41 (20)	58,000 (35)	24,884
WP-02	6 / 6	100%	168	1 (25)	940 (30)	379
WP-03	3 / 5	60%	440	7.3 (25)	1,300 (20)	744
WP-04	4 / 5	80%	45	1.1 (20)	110 (25)	53
WP-05	4 / 6	67%	55	0.71 (20)	160 (30)	75
WP-06	5 / 7	71%	3,264	0.78 (35)	13,000 (20)	5,497
WP-07	0 / 6	0%				
WP-08	4 / 6	67%	978	0.82 (15)	3,900 (25)	1,948

Notes:

1. All concentrations in micrograms per liter (ug/L)
2. All depths in feet below ground surface (ft-bgs)

Table 3-1b
2011 Groundwater Vertical Waterloo Profiling PCE Statistical Summary by Location
Commerce Street Plume Superfund Site
Williston, Vermont

	Freq. Det.	% Detect	Average Detection	Min (depth)	Max (depth)	St. Dev.
VP-32	0 / 6	0%				
VP-33	0 / 8	0%				
VP-34	0 / 6	0%				
VP-35	0 / 5	0%				
VP-36	0 / 6	0%				
VP-37	0 / 5	0%				
VP-38	0 / 5	0%				
VP-39	0 / 6	0%				
VP-40	0 / 4	0%				
VP-41	0 / 6	0%				
VP-42	0 / 7	0%				
VP-43	0 / 8	0%				
VP-44	1 / 5	20%	4.1	4.1 (30)	4.1 (30)	
VP-45	3 / 6	50%	0.23	0.1 (5 & 15)	0.5 (10)	0.23
VP-47	5 / 7	71%	7.0	0.1 (15)	14 (35)	6.5
VP-48	3 / 7	43%	43	6.4 (35)	83 (30)	38
VP-49	0 / 7	0%				
VP-50	1 / 6	17%	1.4	1.4 (40)	1.4 (40)	
VP-51	0 / 7	0%				
VP-52	0 / 7	0%				
VP-53	0 / 7	0%				
VP-54	0 / 6	0%				
VP-55	0 / 4	0%				
VP-56	0 / 7	0%				
VP-57	0 / 7	0%				
VP-58	0 / 6	0%				
WP-01	2 / 7	29%	5.4	1.2 (30)	9.6 (35)	5.9
WP-02	0 / 6	0%				
WP-03	0 / 5	0%				
WP-04	0 / 5	0%				
WP-05	0 / 6	0%				
WP-06	3 / 7	43%	29	0.86 (25)	60 (20)	30
WP-07	0 / 6	0%				
WP-08	1 / 6	17%	1.2	1.2 (20)	1.2 (20)	

Notes:

1. All concentrations in micrograms per liter (ug/L)
2. All depths in feet below ground surface (ft-bgs)

Table 3-1c
2011 Groundwater Vertical Waterloo Profiling cis-1,2-DCE Statistical Summary by Location
Commerce Street Plume Superfund Site
Williston, Vermont

	Freq. Det.	% Detect	Average Detection	Min (depth)	Max (depth)	St. Dev.
VP-32	0 / 6	0%				
VP-33	0 / 8	0%				
VP-34	0 / 6	0%				
VP-35	0 / 5	0%				
VP-36	1 / 6	17%	1.0	1 (20)	1 (20)	
VP-37	0 / 5	0%				
VP-38	2 / 5	40%	87	34 (20)	140 (15)	75
VP-39	2 / 6	33%	2.5	2.2 (35)	2.8 (30)	0.42
VP-40	0 / 4	0%				
VP-41	0 / 6	0%				
VP-42	0 / 7	0%				
VP-43	1 / 8	13%	2.9	2.9 (35)	2.9 (35)	
VP-44	0 / 5	0%				
VP-45	1 / 6	17%	2.8	2.8 (15)	2.8 (15)	
VP-47	1 / 7	14%	3.4	3.4 (35)	3.4 (35)	
VP-48	4 / 7	57%	4.1	3 (30)	7.9 (35)	2.5
VP-49	0 / 7	0%				
VP-50	5 / 6	83%	4.4	2.4 (30)	6.3 (15)	1.7
VP-51	0 / 7	0%				
VP-52	0 / 7	0%				
VP-53	0 / 7	0%				
VP-54	0 / 6	0%				
VP-55	0 / 4	0%				
VP-56	0 / 7	0%				
VP-57	1 / 7	14%	19	19 (30)	19 (30)	
VP-58	0 / 6	0%				
WP-01	4 / 7	57%	44	2 (25)	110 (35)	50
WP-02	6 / 6	100%	9,105	0.94 (10)	31,000 (30)	12,427
WP-03	2 / 5	40%	2.0	0.43 (15)	3.6 (20)	2.2
WP-04	5 / 5	100%	1.0	0.45 (20)	2 (10)	0.60
WP-05	1 / 6	17%	0.81	0.81 (30)	0.81 (30)	
WP-06	4 / 7	57%	2.9	1.3 (30)	5.8 (20)	2.0
WP-07	0 / 6	0%				
WP-08	1 / 6	17%	5.7	5.7 (25)	5.7 (25)	

Notes:

1. All concentrations in micrograms per liter (ug/L)
2. All depths in feet below ground surface (ft-bgs)

Table 3-2
2011 Vertical Profile Groundwater Metals Concentrations
Commerce Street Plume Superfund Site
Williston, Vermont
Page 1 of 4

Sample Location: Depth: Station ID: Sample Name: Analysis:					VP-33		VP-34		VP-35		VP-36				
					20		25		25		25				
					VP-4320A		VP-3425A		VP-3525A		VP-3625A				
					EP0386		EP0385		EP0454		EP0453		EP0445		EP0444
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved			
Chemical	RL (TM)	RL (DM)	VT GWPR	MCL											
Aluminum	110	120			41000	120 U	12000	120 U	28000	520	57000	120 U			
Antimony	20	22	6	6	20 U	22 U	20 U	22 U	20 U	22 U	20 U	22 U			
Arsenic	20	22	10	10	25	22 U	20 U	22 U	20	22 U	40	22 U			
Barium	20	22	2000	2000	190	28	130	92	130	34	210	41			
Beryllium	8	9	4	4	8 U	9 U	8 U	9 U	8 U	9 U	8 U	9 U			
Cadmium	10	11	5	5	10 U	11 U	10 U	11 U	10 U	11 U	10 U	11 U			
Calcium	100	110			28000	18000	67000	59000	180000	83000	200000	68000			
Chromium (total)	20	22	100	100	190	22 U	46	22 U	66	22 U	170	22 U			
Cobalt	20	22			39	22 U	48	37	34	22 U	64	22 U			
Copper	20	22	1300	1300	130	22 U	34	22 U	73	22 U	150	22 U			
Iron	40	45			86000	3200	22000	2400	90000	8700	180000	17000			
Lead	20	22	15	15	32	22 U	20 U	22 U	24	22 U	45	22 U			
Magnesium	100	110			24000	3800	33000	26000	47000	22000	51000	8300			
Manganese	20	22	840		2000	550	1300	1000	3900	480	6400	550			
Nickel	20	22	100		160	22 U	100	71	98	22 U	200	22 U			
Selenium	20	22	50	50	20 U	22 U	20 U	22 U	20 U	22 U	20 U	22 U			
Silver	10	11			10 U	11 U	10 U	11 U	10 U	11 U	10 U	11 U			
Thallium	20	22	2	2	20 U	22 U	20 U	22 U	20 U	22 U	20 U	22 U			
Vanadium	20	22			93	22 U	44	22 U	62	22 U	120	22 U			
Zinc	20	22			220	22 U	73	22 U	140	22 U	300	22 U			
Dilution Factor:					1.12		1.12		1.12		1.12				
Sample Date:					8/18/2011		8/25/2010		8/25/2010		8/22/2011				

- Notes:**
1. U = below detection limit, RL = Reporting Limit
 2. VT GWPR = Vermont Groundwater Protection Rule standard.
 3. MCL = Maximum Contaminant Level: EPA's National Primary Drinking Water Regulations, updated May 2009.
 4. **Bold** and shaded indicates exceedance of VT GWPR/MCL.
 5. All concentrations listed in micrograms per liter (µg/L).

Table 3-2
2011 Vertical Profile Groundwater Metals Concentrations
Commerce Street Plume Superfund Site
Williston, Vermont
Page 2 of 4

Sample Location: Depth: Station ID: Sample Name: Analysis:					VP-37		VP-38		VP-38		VP-39				
					25		30		30		30				
					VP-3725A		VP-3830A		DUP04-0823A		VP-3930A				
					EP0424		EP0423		EP0415		EP0414		EP0417		EP0416
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved	
Chemical	RL (TM)	RL (DM)	VT GWPR	MCL											
Aluminum	110	120			61000	120 U	60000	120 U	6200	120 U	17000	120 U			
Antimony	20	22	6	6	20 U	22 U	20 U	22 U	20 U	22 U	20 U	22 U			
Arsenic	20	22	10	10	36	22 U	59	22 U	55	22 U	20 U	22 U			
Barium	20	22	2000	2000	260	82	200	22 U	200	22 U	72	22 U			
Beryllium	8	9	4	4	8 U	9 U	8 U	9 U	8 U	9 U	8 U	9 U			
Cadmium	10	11	5	5	10 U	11 U	10 U	11 U	10 U	11 U	10 U	11 U			
Calcium	100	110			260000	96000	220000	24000	220000	24000	120000	75000			
Chromium (total)	20	22	100	100	130	22 U	140	22 U	140	22 U	44	22 U			
Cobalt	20	22			66	22 U	71	22 U	72	22 U	20 U	22 U			
Copper	20	22	1300	1300	150	22 U	130	22 U	140	22 U	40	22 U			
Iron	40	45			160000	12000	150000	450	160000	490	51000	13000			
Lead	20	22	15	15	45	22 U	49	22 U	47	22 U	20 U	22 U			
Magnesium	100	110			64000	16000	54000	5200	55000	5300	29000	17000			
Manganese	20	22	840		7400	1800	6100	280	6100	280	2100	940			
Nickel	20	22	100		200	22 U	200	22 U	210	22 U	52	22 U			
Selenium	20	22	50	50	20 U	22 U	20 U	22 U	20 U	22 U	20 U	22 U			
Silver	10	11			10 U	11 U	10 U	11 U	10 U	11 U	10 U	11 U			
Thallium	20	22	2	2	20 U	22 U	20 U	22 U	20 U	22 U	20 U	22 U			
Vanadium	20	22			130	22 U	130	22 U	130	22 U	38	22 U			
Zinc	20	22			300	22 U	290	22 U	300	22 U	78	22 U			
Dilution Factor:					1.12		1.12		1.12		1.12				
Sample Date:					8/23/2011		8/23/2011		8/23/2011		8/19/2011				

- Notes:**
1. U = below detection limit, RL = Reporting Limit
 2. VT GWPR = Vermont Groundwater Protection Rule standard.
 3. MCL = Maximum Contaminant Level: EPA's National Primary Drinking Water Regulations, updated May 2009.
 4. **Bold** and shaded indicates exceedance of VT GWPR/MCL.
 5. All concentrations listed in micrograms per liter (µg/L).

Table 3-2
2011 Vertical Profile Groundwater Metals Concentrations
Commerce Street Plume Superfund Site
Williston, Vermont
Page 3 of 4

Sample Location: Depth: Station ID: Sample Name: Analysis:					VP-40		VP-42		VP-43		V-45					
					25		35		30		30					
					VP-4025A		VP-4235A		VP-4330A		VP-4530A					
					EP0439		EP0438		EP0376		EP0375		EP0373		EP0372	
					Total		Dissolved		Total		Dissolved		Total		Dissolved	
Chemical	RL (TM)	RL (DM)	VT GWPR	MCL												
Aluminum	110	120			63000	120 U	8100	120 U	4000	120 U	430000	120 U				
Antimony	20	22	6	6	20 U	22 U	20 U	22 U	20 U	22 U	20 U	22 U				
Arsenic	20	22	10	10	50	22 U	20 U	22 U	20 U	22 U	240	22 U				
Barium	20	22	2000	2000	230	42	52	22 U	26	22 U	780	22 U				
Beryllium	8	9	4	4	8 U	9 U	8 U	9 U	8 U	9 U	8 U	9 U				
Cadmium	10	11	5	5	10 U	11 U	10 U	11 U	10 U	11 U	27	11 U				
Calcium	100	110			260000	88000	93000	81000	26000	23000	601000	24000				
Chromium (total)	20	22	100	100	130	22 U	67	22 U	26	22 U	740	22 U				
Cobalt	20	22			72	22 U	20 U	22 U	20 U	22 U	390	22 U				
Copper	20	22	1300	1300	160	22 U	32	22 U	20 U	22 U	1000	22 U				
Iron	40	45			150000	2200	23000	2500	11000	2600	991000	320				
Lead	20	22	15	15	51	22 U	20 U	22 U	20 U	22 U	250	22 U				
Magnesium	100	110			64000	14000	18000	14000	11000	8800	310000	4100				
Manganese	20	22	840		5800	610	1100	700	380	220	24000	140				
Nickel	20	22	100		210	22 U	29	22 U	63	49	1100	22 U				
Selenium	20	22	50	50	20 U	22 U	20 U	22 U	20 U	22 U	43	22 U				
Silver	10	11			10 U	11 U	10 U	11 U	10 U	11 U	10 U	11 U				
Thallium	20	22	2	2	20 U	22 U	20 U	22 U	20 U	22 U	20 U	22 U				
Vanadium	20	22			140	22 U	20 U	22 U	20 U	22 U	700	22 U				
Zinc	20	22			320	22 U	99	22 U	55	24	1900	22 U				
Dilution Factor:					1.12		1.12		1.12		1.12					
Sample Date:					8/24/2011		8/16/2011		8/16/2011		8/17/2011					

- Notes:**
1. U = below detection limit, RL = Reporting Limit
 2. VT GWPR = Vermont Groundwater Protection Rule standard.
 3. MCL = Maximum Contaminant Level: EPA's National Primary Drinking Water Regulations, updated May 2009.
 4. **Bold** and shaded indicates exceedance of VT GWPR/MCL.
 5. All concentrations listed in micrograms per liter (µg/L).

Table 3-2
2011 Vertical Profile Groundwater Metals Concentrations
Commerce Street Plume Superfund Site
Williston, Vermont
Page 4 of 4

Sample Location: Depth: Station ID: Sample Name: Analysis:					V-45		V-49		VP-53		VP-54				
					5		25		25		30				
					VP-4505A		VP-4925A		VP-5325A		VP-5430A				
					EP0383		EP0382		EP0472		EP0471		EP0431		EP0430
					Total	Dissolved	Total	Dissolved	Total	Dissolved	Total	Dissolved			
Chemical	RL (TM)	RL (DM)	VT GWPR	MCL											
Aluminum	110	120			12000	160	810	120 U	4600	120 U	61000	120 U			
Antimony	20	22	6	6	20 U	22 U	20 U	22 U	20 U	22 U	20 U	22 U			
Arsenic	20	22	10	10	20 U	22 U	20 U	22 U	20 U	22 U	40	22 U			
Barium	20	22	2000	2000	46	22 U	210	180	26	22 U	20 U	31			
Beryllium	8	9	4	4	8 U	9 U	8 U	9 U	8 U	9 U	8 U	9 U			
Cadmium	10	11	5	5	10 U	11 U	10 U	11 U	10 U	11 U	10 U	11 U			
Calcium	100	110			13000	11000	160000	15000	10000	7700	190000	71000			
Chromium (total)	20	22	100	100	32	22 U	20 U	22 U	29	22 U	170	22 U			
Cobalt	20	22			20 U	22 U	20 U	22 U	20 U	22 U	63	22 U			
Copper	20	22	1300	1300	44	22 U	20 U	22 U	20 U	22 U	150	22 U			
Iron	40	45			24000	450	15000	11000	10000	390	160000	8400			
Lead	20	22	15	15	20 U	22 U	20 U	22 U	20 U	22 U	41	22 U			
Magnesium	100	110			6700	2900	27000	26000	6000	3900	62000	18000			
Manganese	20	22	840		870	330	2300	2100	670	500	5200	770			
Nickel	20	22	100		34	22 U	20 U	22 U	26	22 U	190	22 U			
Selenium	20	22	50	50	20 U	22 U	20 U	22 U	20 U	22 U	20 U	22 U			
Silver	10	11			10 U	11 U	10 U	11 U	10 U	11 U	10 U	11 U			
Thallium	20	22	2	2	20 U	22 U	20 U	22 U	20 U	22 U	20 U	22 U			
Vanadium	20	22			35	22 U	20 U	22 U	20 U	22 U	130	22 U			
Zinc	20	22			42	22 U	35	22 U	23	22 U	330	22 U			
Dilution Factor:					1.12		1.12		1.12		1.12				
Sample Date:					8/17/2011		8/17/2011		8/24/2011		8/22/2011				

- Notes:**
1. U = below detection limit, RL = Reporting Limit
 2. VT GWPR = Vermont Groundwater Protection Rule standard.
 3. MCL = Maximum Contaminant Level: EPA's National Primary Drinking Water Regulations, updated May 2009.
 4. **Bold** and shaded indicates exceedance of VT GWPR/MCL.
 5. All concentrations listed in micrograms per liter (µg/L).

Table 3-3
2011 Vertical Profile Groundwater 1,4-Dioxane Concentrations
Commerce Street Plume Superfund Site
Williston, Vermont
Page 1 of 2

Sample Location:				VP-33	VP-34	VP-35	VP-36	VP-37	VP-38	VP-38	VP-39	VP-40
Depth:				20	25	25	25	25	30	30	30	25
Station ID:				VP-3320A	VP-3425A	VP-3525A	VP-3625A	VP-3725A	VP-3830A	DUP04-0823A	VP-3930A	VP-4025A
Sample Name:				EP0385	EP0453	EP444	EP0392	EP0423	EP0414	EP0416	EP0388	EP0438
Chemical	RL	VT GWPR	MCL									
1,4-Dioxane	2			2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Sample Date:				8/18/2011	8/25/2010	8/25/2010	8/22/2011	8/23/2011	8/23/2011	8/23/2011	8/19/2011	8/24/2011

- Notes:**
1. U = below detection limit, RL = Reporting Limit
 2. VT GWPR = Vermont Groundwater Protection Rule standard.
 3. MCL = Maximum Contaminant Level: EPA's National Primary Drinking Water Regulations, updated May 2009.
 4. **Bold** and shaded indicates exceedance of VT GWPR/MCL.
 5. All concentrations listed in micrograms per liter (µg/L).

Table 3-3
2011 Vertical Profile Groundwater 1,4-Dioxane Concentrations
Commerce Street Plume Superfund Site
Williston, Vermont
Page 2 of 2

Sample Location:				VP-42	VP-43	V-45	V-47	V-49	VP-53	VP-54
Depth:				35	30	30	40	25	25	30
Station ID:				VP-4235A	VP-4330A	VP-4530A	VP-4740A	VP-4925A	VP-5325A	VP-5430A
Sample Name:				EP0375	EP0372	EP0377	EP0381	EP0471	EP0430	EP0406
Chemical	RL	VT GWPR	MCL							
1,4-Dioxane	2			2 U	2 U	2 U	2 U	2 U	2 U	2 U
Sample Date:				8/16/2011	8/16/2011	8/17/2011	8/17/2011	8/17/2011	8/24/2011	8/22/2011

- Notes:**
1. U = below detection limit, RL = Reporting Limit
 2. VT GWPR = Vermont Groundwater Protection Rule standard.
 3. MCL = Maximum Contaminant Level: EPA's National Primary Drinking Water Regulations, updated May 2009.
 4. **Bold** and shaded indicates exceedance of VT GWPR/MCL.
 5. All concentrations listed in micrograms per liter ($\mu\text{g/L}$).

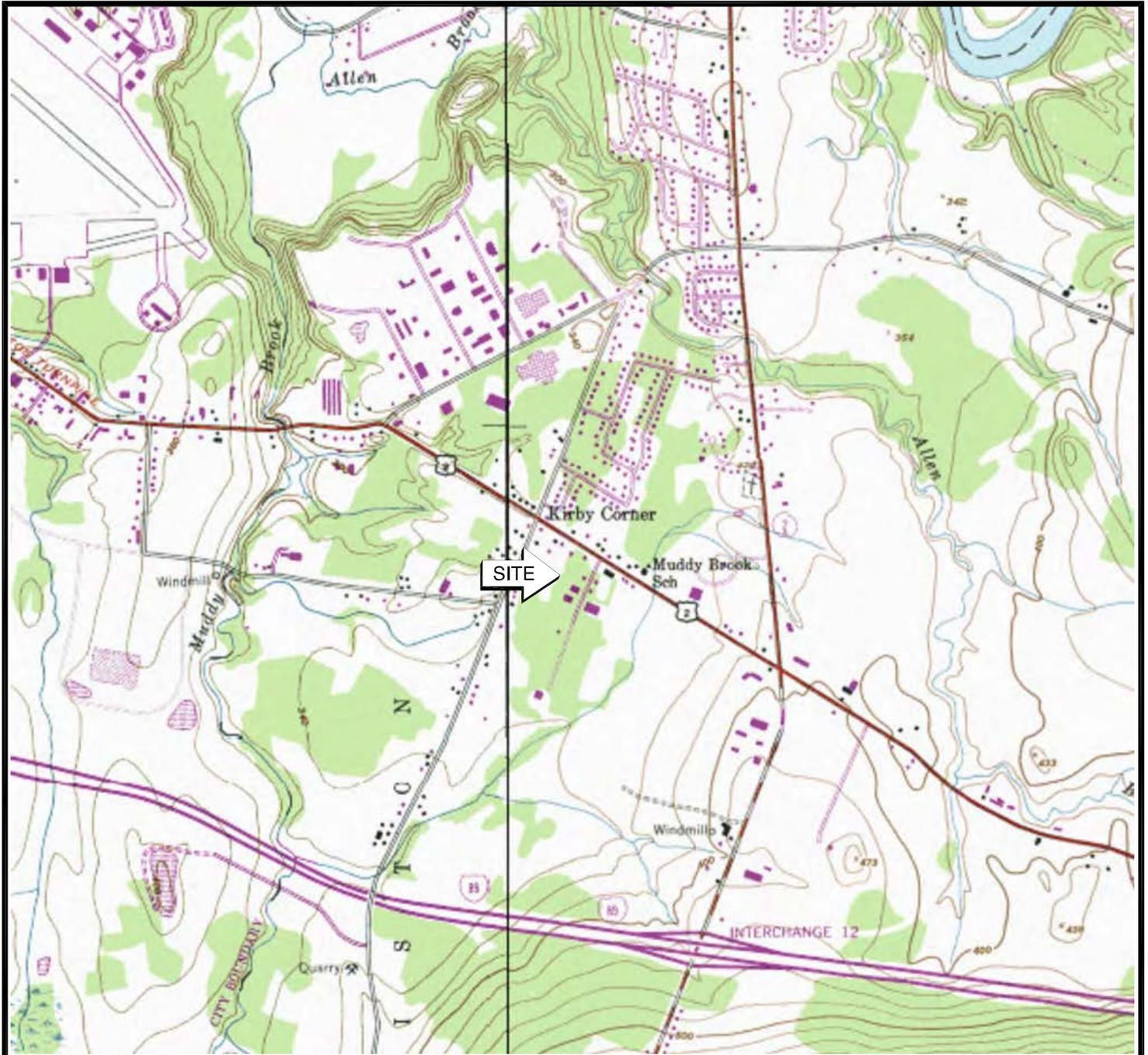
Table 4-1
Dissolved-Phased Groundwater Contaminant Mass Estimate
Commerce Street Plume Superfund Site
Williston, Vermont

Depth (ft)	Area OUT (ft2)	Median Conc (ug/L)	GW Vol (L) Porosity of 20%	TCE Mass OUT (Kg)	Area IN (ft2)	Median Conc (ug/L)	GW Vol (L) Porosity of 20%	TCE Mass IN (Kg)	TCE Mass Total (Kg)	
West Plume										
10	218,000	53	6,173,073	0.3	NA	NA	NA	NA	0.3	
15	560,200	503	15,863,097	8.0	3,500	1,100	99,109	0.1	8.1	
20	559,700	503	15,848,939	8.0	81,800	7,000	2,316,318	16.2	24.2	
25	621,500	503	17,598,920	8.9	47,800	2,460	1,353,545	3.3	12.2	
30	762,800	503	21,600,091	10.9	NA	NA	NA	NA	10.9	
35	1,019,000	503	28,854,867	14.5	NA	NA	NA	NA	14.5	
40	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Outer Zone Total=				50.5	Inner Zone Total=				19.7	
									West Plume Total =	70.2
Commerce St Plume										
10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
15	203,200	503	5,753,983	2.9	109,800	3,550	3,109,190	11.0	13.9	
20	773,800	503	21,911,576	11.0	47,600	1,350	1,347,882	1.8	12.8	
25	1,949,000	503	55,189,534	27.8	150,300	2,450	4,256,022	10.4	38.2	
30	1,959,500	503	55,486,861	27.9	577,300	21,000	16,347,316	343.3	371.2	
35	1,075,700	503	30,460,432	15.3	1,242,800	29,500	35,192,177	1,038.2	1,053.5	
40	1,260,200	503	35,684,890	17.9	816,200	31,000	23,112,210	716.5	734.4	
Outer Zone Total=				102.9	Inner Zone Total=				2,121.2	
									Commerce St Plume Total =	2,224.1
									Study Area Total =	2,294.2

Note:

Areas and median concentrations were estimated using TCE concentration figures developed by Nobis in 2011.

FIGURES



USGS TOPOGRAPHIC MAP
 ESSEX JUNCTION, VERMONT
 1987

APPROXIMATE SCALE
 1 INCH = 2,000 FEET



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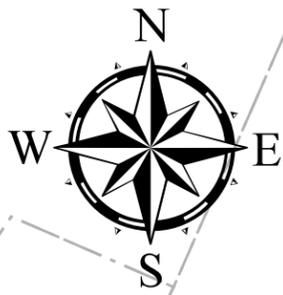


QUADRANGLE LOCATION

FIGURE 1-1

LOCUS MAP
 96 COMMERCE STREET
 SUPERFUND SITE
 WILLISTON, VERMONT

PREPARED BY: ML	CHECKED BY: SH
PROJECT NO: 80036	DATE: Nov. 2011 Rev 00



VP-58: 394 Shunpike Road
(1,500 ft.)

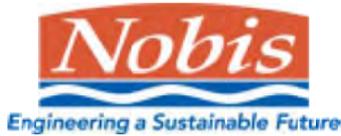


Harvest Lane →

Marshall Avenue

Legend

- 2011 Waterloo Profile Location
- 2011 Vertical Profile Location
- 2010 Vertical Profile Location
- 2010 Groundwater Sample Location
- Unnamed Stream
- Property Line
- 19-35 Lot Number
- Building
- Cross-section line for Figures 4-3 to 4-8



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FIGURE 1-2

STUDY AREA SKETCH

**COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT**

PREPARED BY: JF

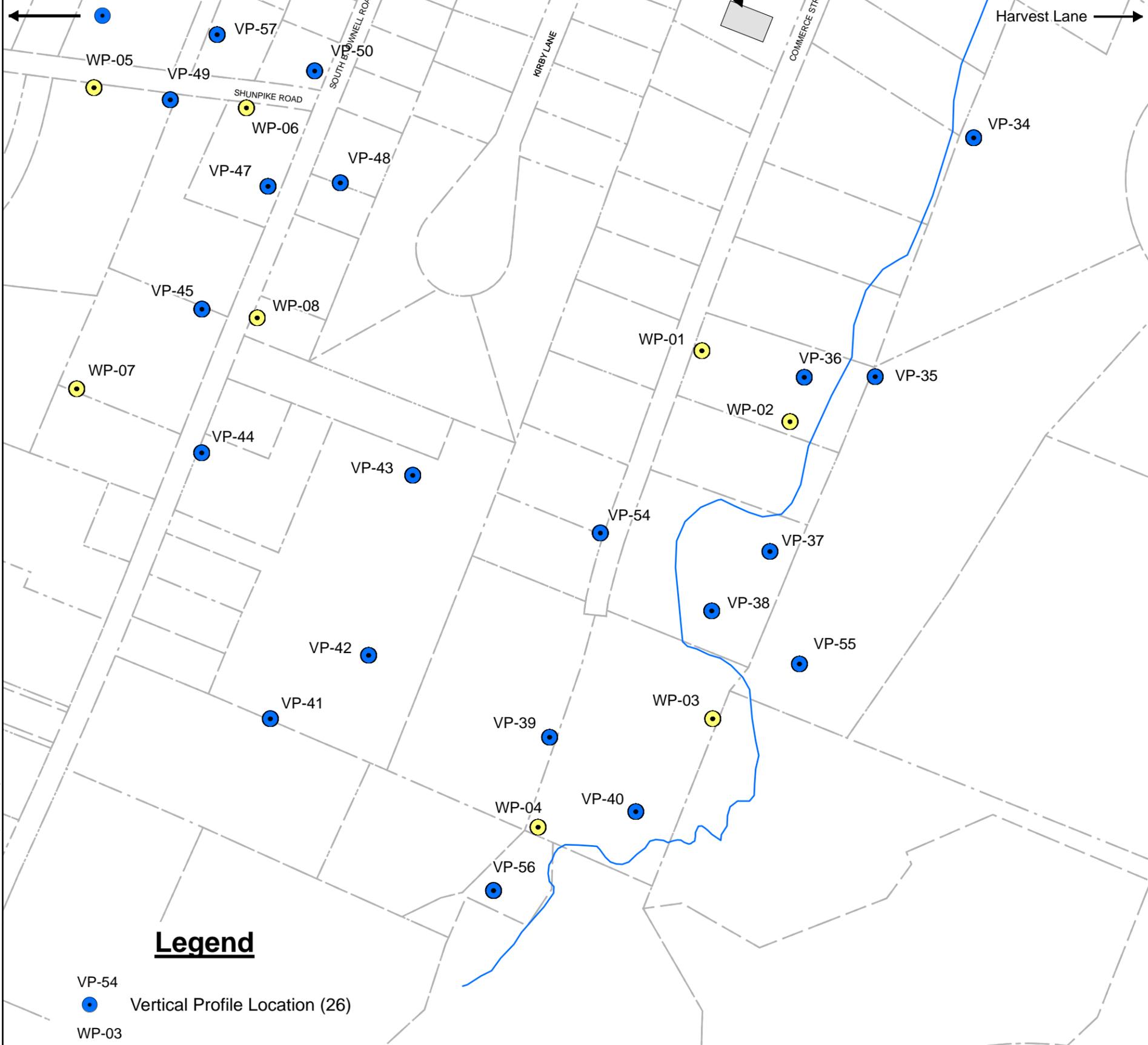
CHECKED BY: SH

PROJECT NO. 80036

DATE: November 2011 Rev 00



VP-58: 394 Shunpike Road (1,500 ft.)



Legend

- VP-54 ● Vertical Profile Location (26)
- WP-03 ● Waterloo Profile Location (8)
- Unnamed Stream
- - - Property Line
- Building



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FIGURE 2-1

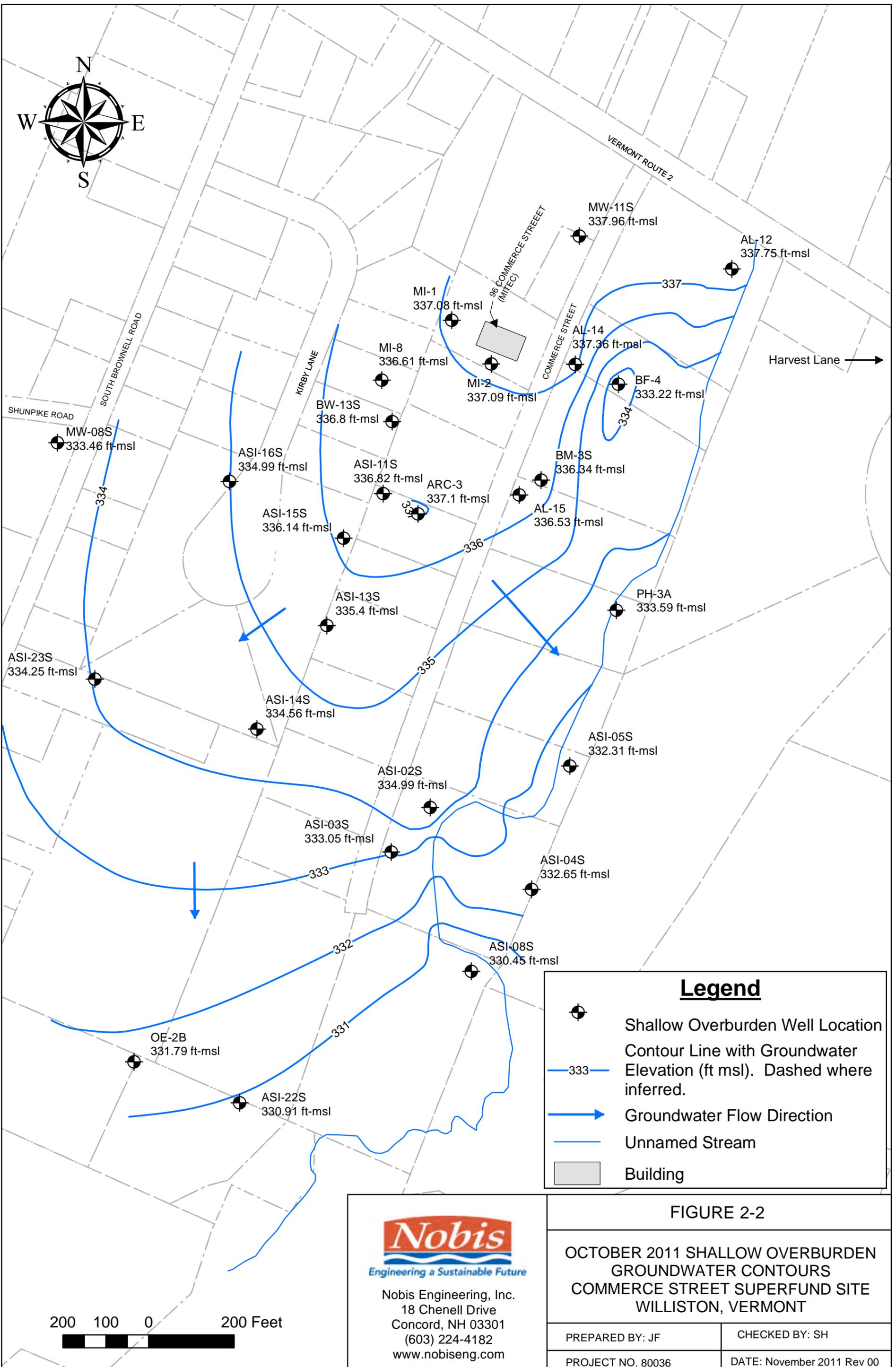
**2011 VERTICAL AND WATERLOO
 PROFILING LOCATIONS
 COMMERCE STREET SUPERFUND SITE
 WILLISTON, VERMONT**

PREPARED BY: JF

CHECKED BY: SH

PROJECT NO. 80036

DATE: November 2011 Rev 00



Legend

- Shallow Overburden Well Location
- Contour Line with Groundwater Elevation (ft msl). Dashed where inferred.
- Groundwater Flow Direction
- Unnamed Stream
- Building

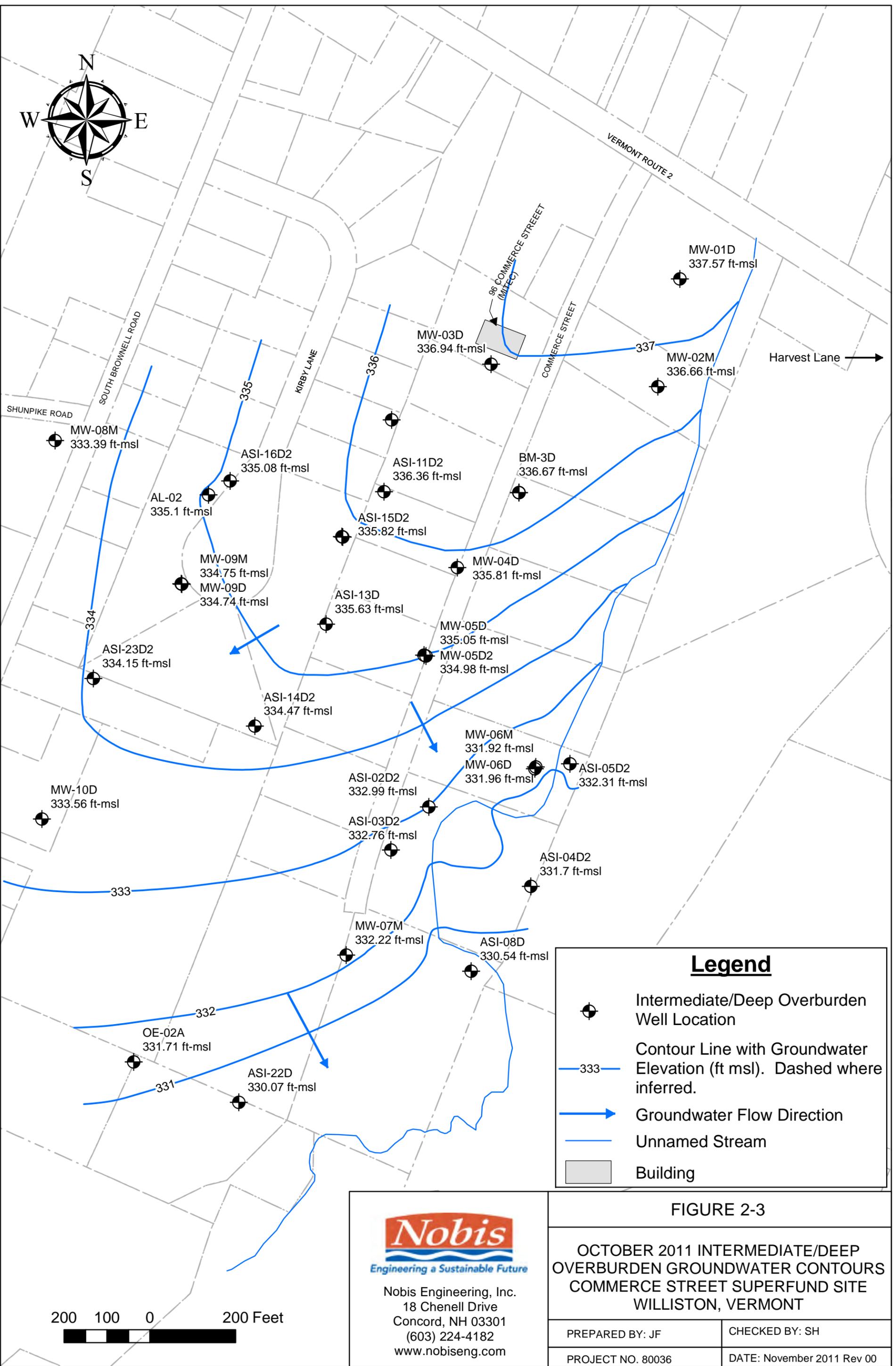
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FIGURE 2-2

**OCTOBER 2011 SHALLOW OVERBURDEN GROUNDWATER CONTOURS
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT**

PREPARED BY: JF	CHECKED BY: SH
PROJECT NO. 80036	DATE: November 2011 Rev 00

Path: R:\80000\Task Orders\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\2011 Data Summary Report\Figure 2-2_Shallow OB_contours.mxd



Legend

- Intermediate/Deep Overburden Well Location
- Contour Line with Groundwater Elevation (ft msl). Dashed where inferred.
- Groundwater Flow Direction
- Unnamed Stream
- Building

FIGURE 2-3

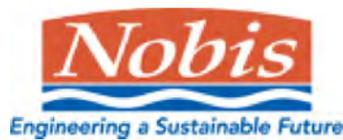
OCTOBER 2011 INTERMEDIATE/DEEP OVERBURDEN GROUNDWATER CONTOURS
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JF

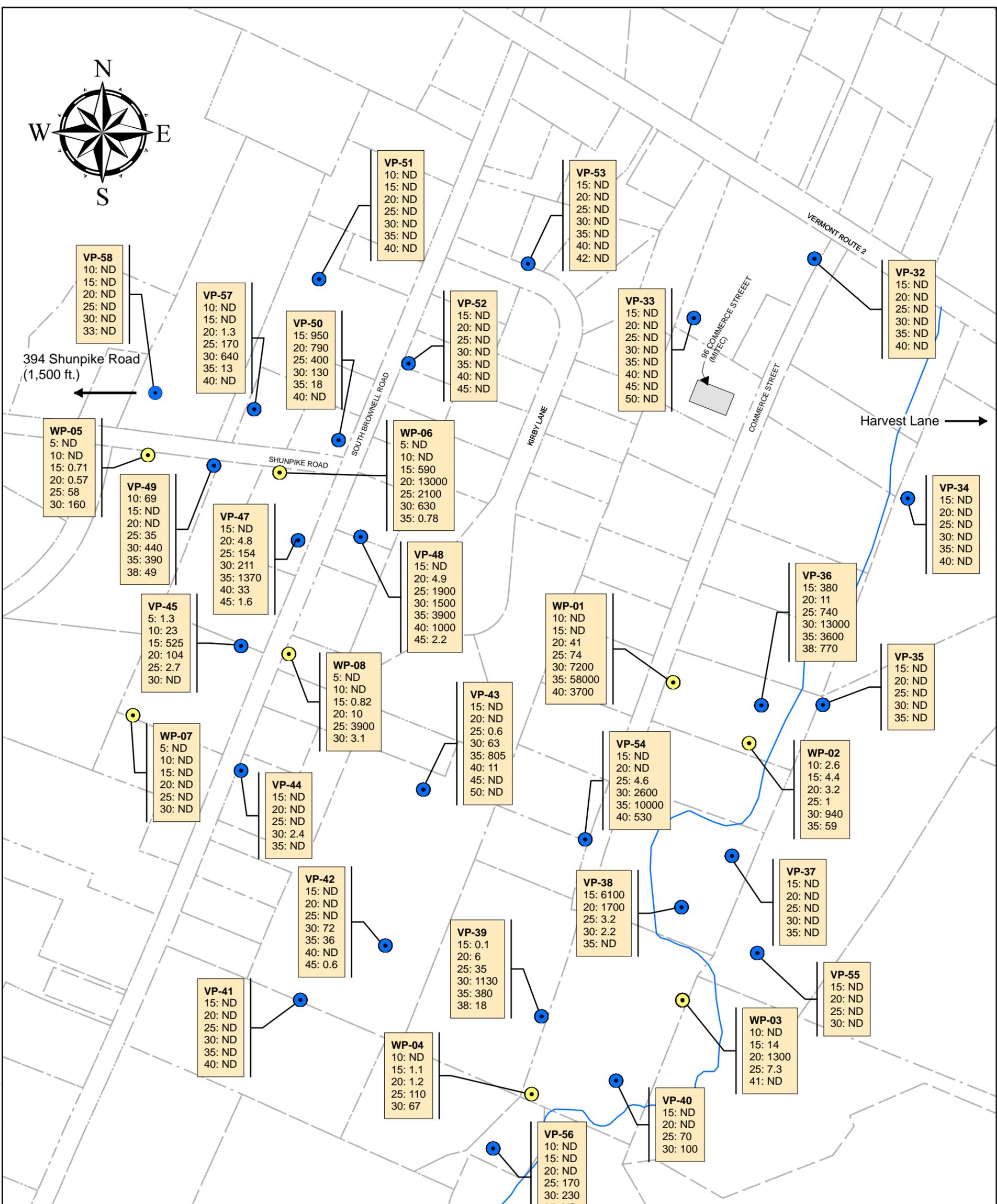
CHECKED BY: SH

PROJECT NO. 80036

DATE: November 2011 Rev 00

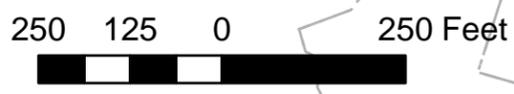


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Legend

- VP-54
● Vertical Profile Location (26)
- WP-03
● Waterloo Profile Location (8)
- Unnamed Stream
- - - Property Line
- Building

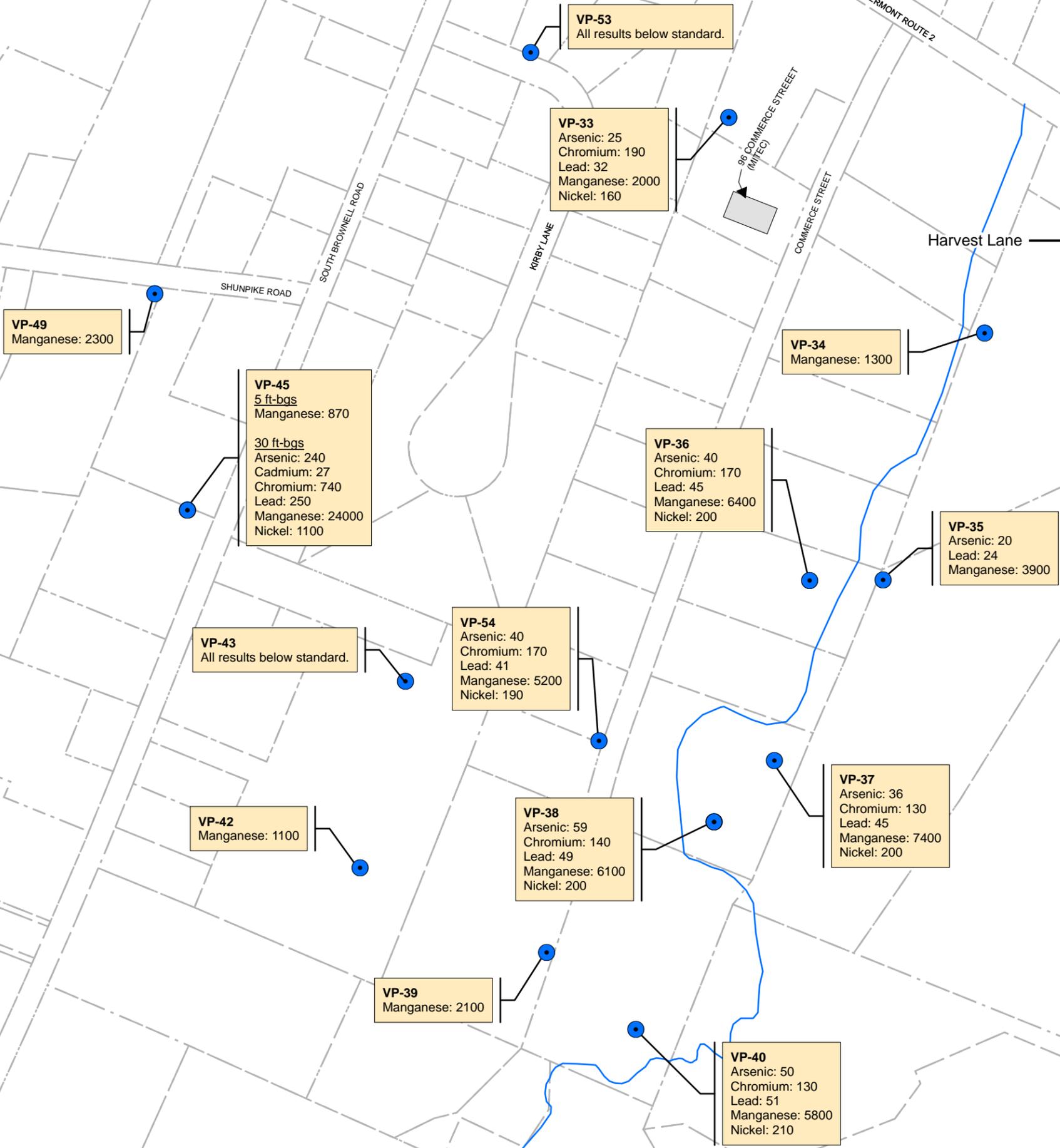


Notes
 1. All TCE results are in micrograms per liter (ug/L).
 2. All depths are feet below ground surface (ft-bgs).

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FIGURE 3-1	
2011 VERTICAL AND WATERLOO PROFILING TCE RESULTS WITH DEPTH COMMERCE STREET SUPERFUND SITE WILLISTON, VERMONT	
PREPARED BY: JF	CHECKED BY: SH
PROJECT NO. 80036	DATE: November 2011 Rev 00

Path: R:\80000\Task Orders\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\2011 Data Summary Report\Figure 3-1_VP TCE results.mxd



VP-49
Manganese: 2300

VP-45
5 ft-bgs
Manganese: 870

30 ft-bgs
Arsenic: 240
Cadmium: 27
Chromium: 740
Lead: 250
Manganese: 24000
Nickel: 1100

VP-43
All results below standard.

VP-42
Manganese: 1100

VP-54
Arsenic: 40
Chromium: 170
Lead: 41
Manganese: 5200
Nickel: 190

VP-39
Manganese: 2100

VP-38
Arsenic: 59
Chromium: 140
Lead: 49
Manganese: 6100
Nickel: 200

VP-36
Arsenic: 40
Chromium: 170
Lead: 45
Manganese: 6400
Nickel: 200

VP-34
Manganese: 1300

VP-35
Arsenic: 20
Lead: 24
Manganese: 3900

VP-33
Arsenic: 25
Chromium: 190
Lead: 32
Manganese: 2000
Nickel: 160

VP-53
All results below standard.

VP-40
Arsenic: 50
Chromium: 130
Lead: 51
Manganese: 5800
Nickel: 210

VP-37
Arsenic: 36
Chromium: 130
Lead: 45
Manganese: 7400
Nickel: 200

Legend

- VP-54
- Vertical Profile Location
- Unnamed Stream
- Property Line
- Building



Notes
1. All TCE results are in micrograms per liter (ug/L).
2. All depths are feet below ground surface (ft-bgs).

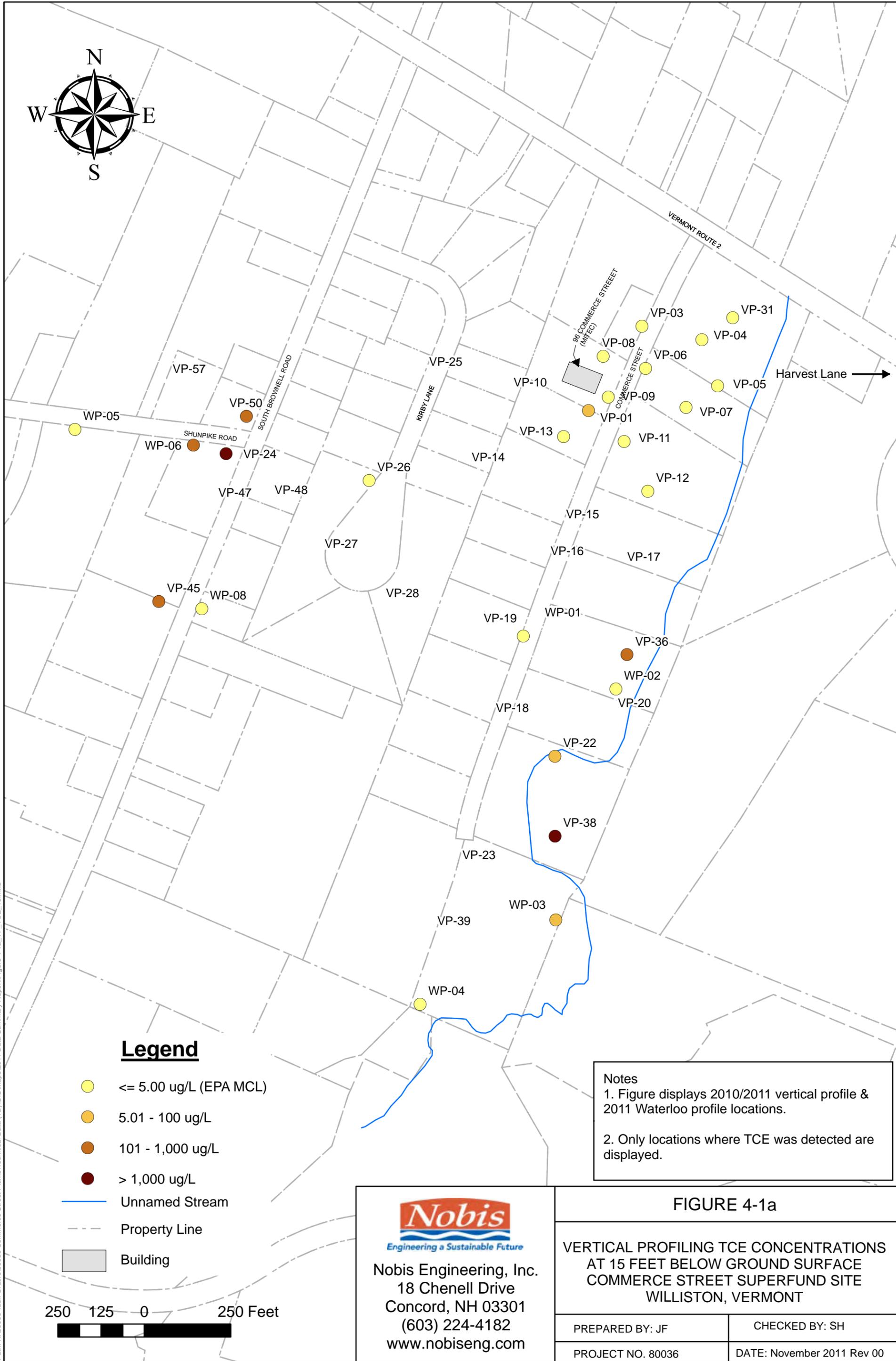


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FIGURE 3-2

2011 VERTICAL PROFILING
TOTAL METALS RESULTS EXCEEDING STANDARD
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JF	CHECKED BY: SH
PROJECT NO. 80036	DATE: November 2011 Rev 00

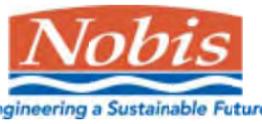


Legend

- <= 5.00 ug/L (EPA MCL)
- 5.01 - 100 ug/L
- 101 - 1,000 ug/L
- > 1,000 ug/L
- Unnamed Stream
- - - Property Line
- Building

250 125 0 250 Feet

Notes
 1. Figure displays 2010/2011 vertical profile & 2011 Waterloo profile locations.
 2. Only locations where TCE was detected are displayed.



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FIGURE 4-1a

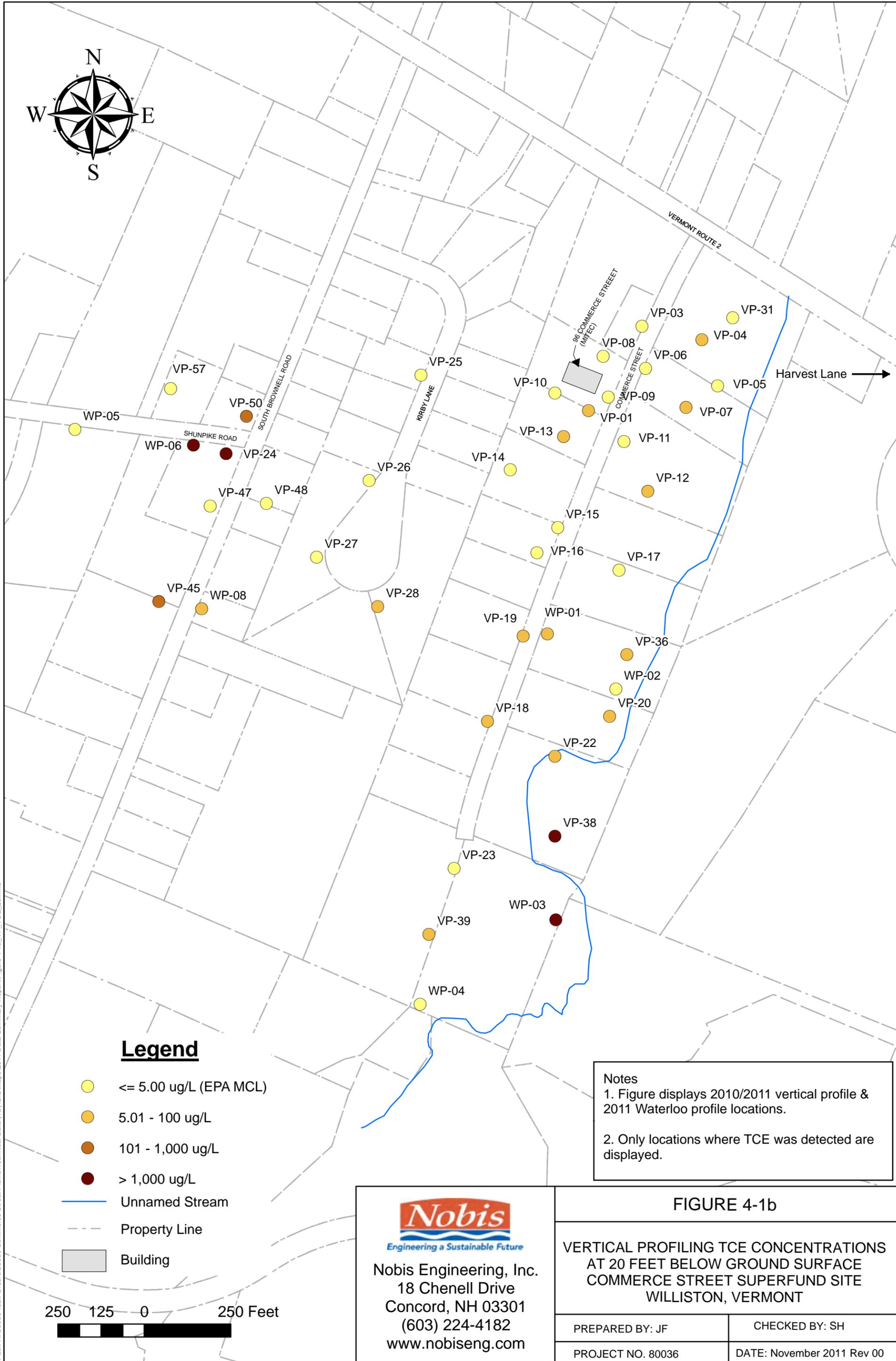
**VERTICAL PROFILING TCE CONCENTRATIONS
 AT 15 FEET BELOW GROUND SURFACE
 COMMERCE STREET SUPERFUND SITE
 WILLISTON, VERMONT**

PREPARED BY: JF

CHECKED BY: SH

PROJECT NO. 80036

DATE: November 2011 Rev 00



Legend

- <= 5.00 ug/L (EPA MCL)
- 5.01 - 100 ug/L
- 101 - 1,000 ug/L
- > 1,000 ug/L
- Unnamed Stream
- - - Property Line
- Building

250 125 0 250 Feet

Notes
 1. Figure displays 2010/2011 vertical profile & 2011 Waterloo profile locations.
 2. Only locations where TCE was detected are displayed.



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FIGURE 4-1b

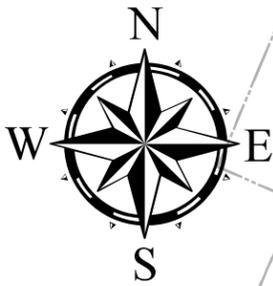
**VERTICAL PROFILING TCE CONCENTRATIONS
 AT 20 FEET BELOW GROUND SURFACE
 COMMERCE STREET SUPERFUND SITE
 WILLISTON, VERMONT**

PREPARED BY: JF

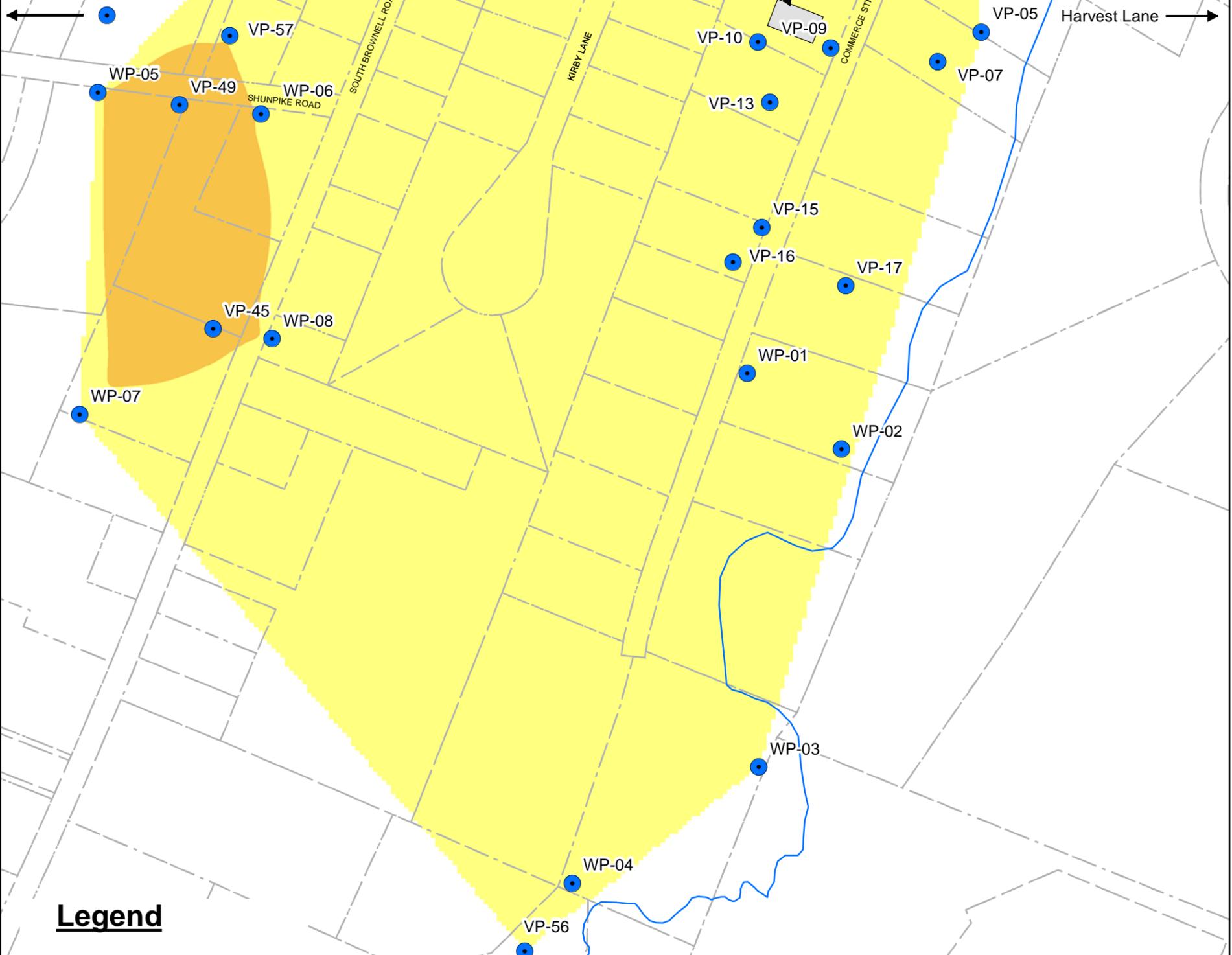
CHECKED BY: SH

PROJECT NO. 80036

DATE: November 2011 Rev 00



VP-58: 394 Shunpike Road (1,500 ft.)
All results non-detect.



Legend

- VP/WP Sample Location
- <= 5 ug/L (MCL)
- 5.01 - 100 ug/L
- 101 - 1,000 ug/L
- > 1,000 ug/L
- Unnamed Stream
- Property Line
- Building



Notes
1. Figure displays 2010/2011 vertical profile & 2011 Waterloo profile locations.



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FIGURE 4-2a

**VERTICAL PROFILING TCE CONTOURS
AT 10 FEET BELOW GROUND SURFACE
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT**

PREPARED BY: JF

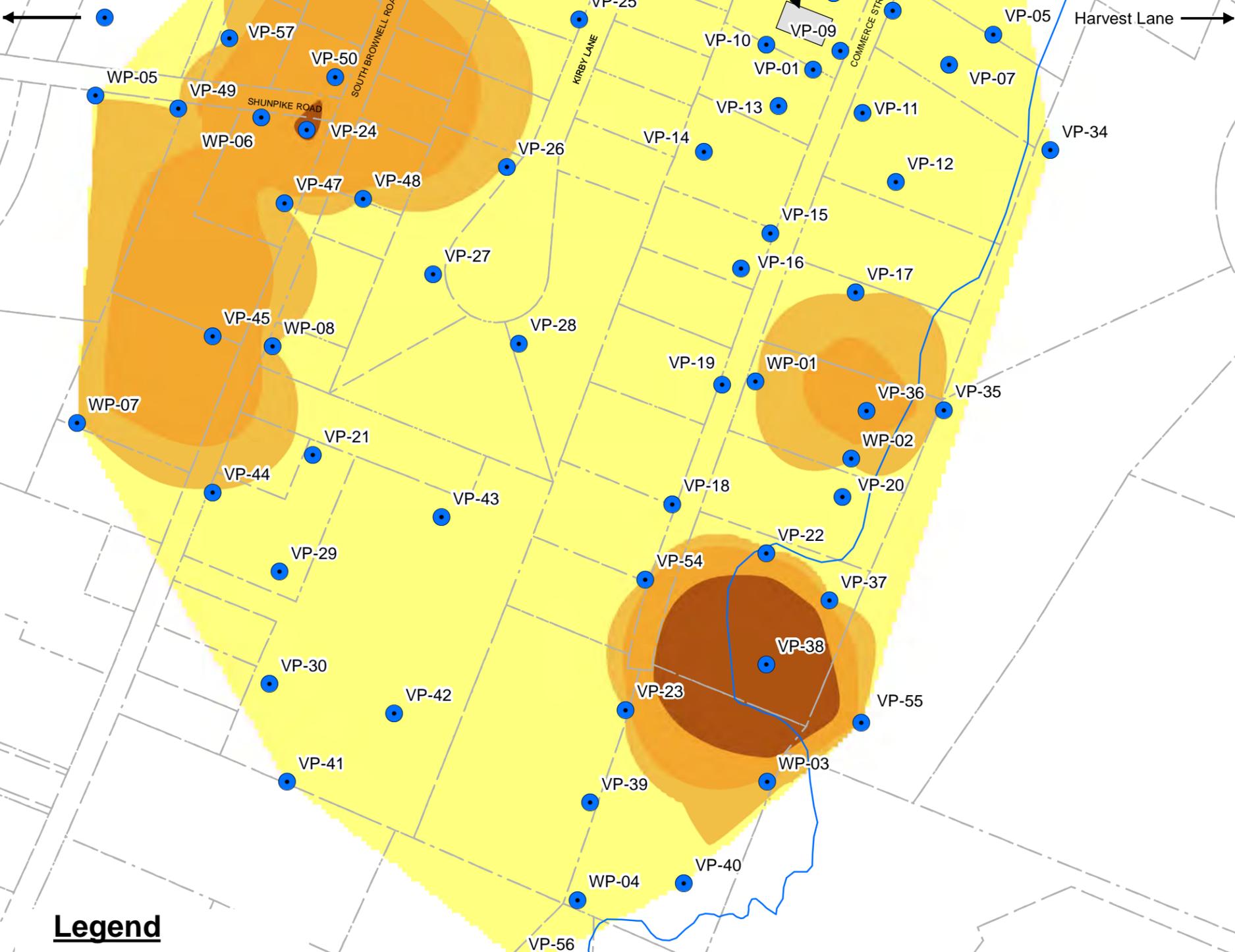
CHECKED BY: SH

PROJECT NO. 80036

DATE: November 2011 Rev 00

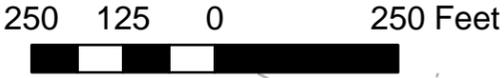


VP-58: 394 Shunpike Road (1,500 ft.)
All results non-detect.



Legend

- VP/WP Sample Location
- <= 5 ug/L (MCL)
- 5.01 - 100 ug/L
- 101 - 1,000 ug/L
- > 1,000 ug/L
- Unnamed Stream
- Property Line
- Building



Notes
1. Figure displays 2010/2011 vertical profile & 2011 Waterloo profile locations.

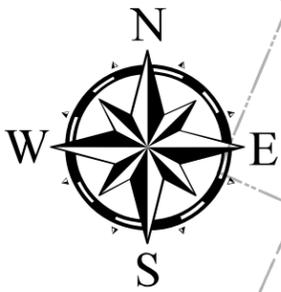


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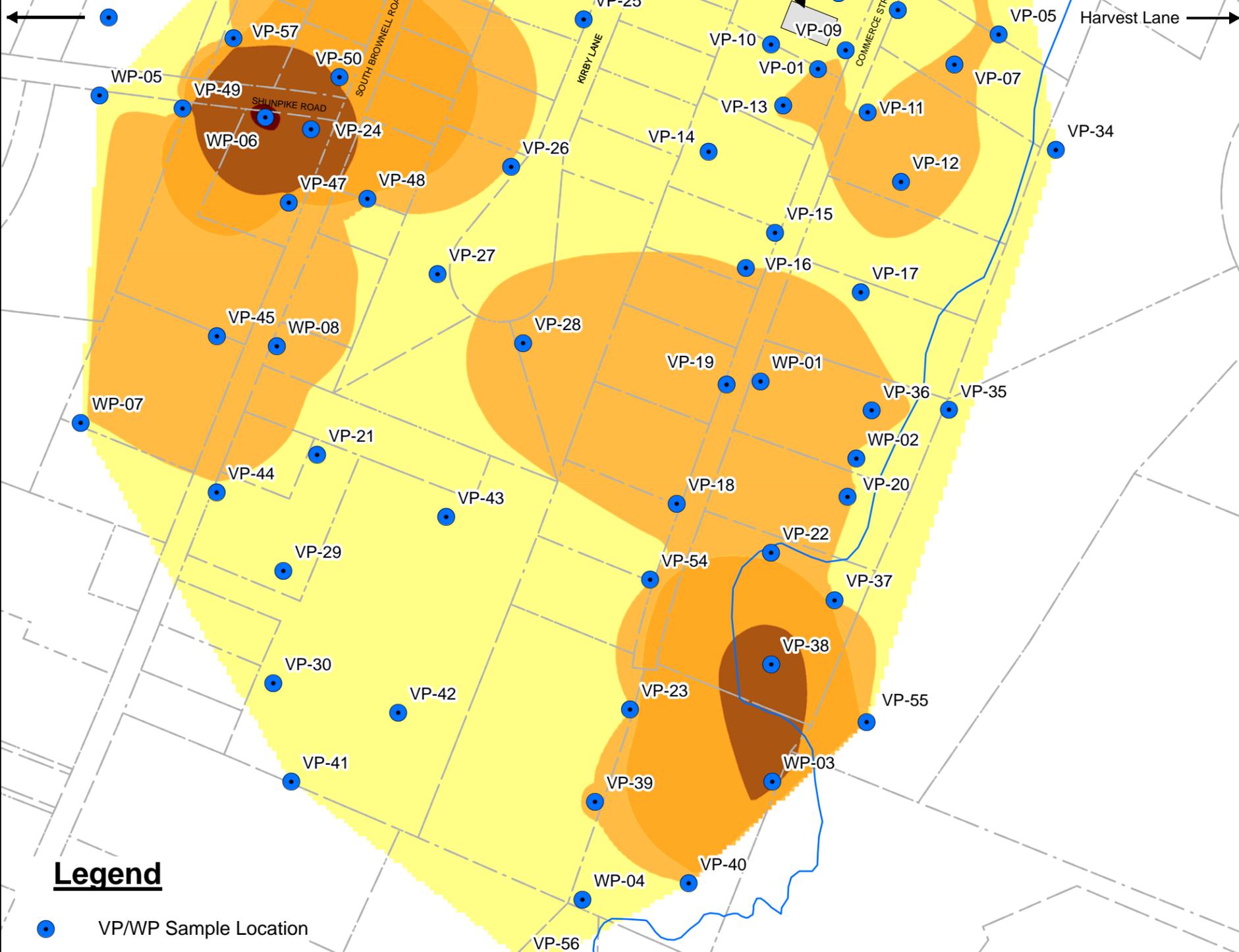
FIGURE 4-2b

**VERTICAL PROFILING TCE CONTOURS
AT 15 FEET BELOW GROUND SURFACE
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT**

PREPARED BY: JF	CHECKED BY: SH
PROJECT NO. 80036	DATE: November 2011 Rev 00



VP-58: 394 Shunpike Road (1,500 ft.)
All results non-detect.



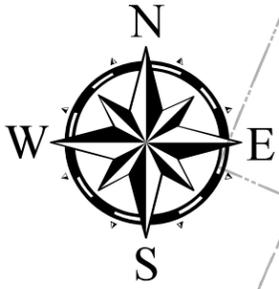
Legend

- VP/WP Sample Location
- ≤ 5 ug/L (MCL)
- 5.01 - 100 ug/L
- 101 - 1,000 ug/L
- 1,001 - 10,000 ug/L
- > 10,000 ug/L
- Unnamed Stream
- - - Property Line
- Building

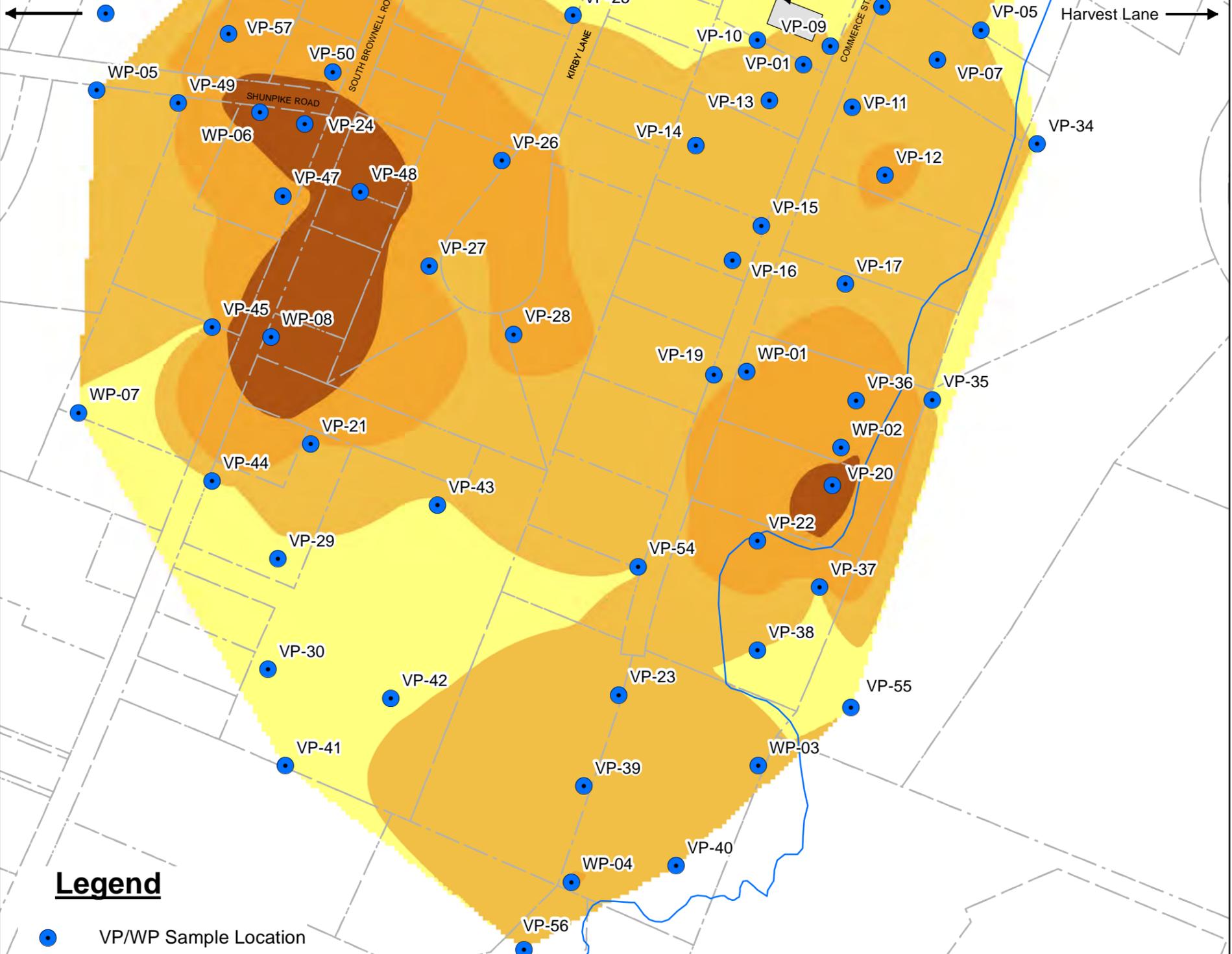
Notes
1. Figure displays 2010/2011 vertical profile & 2011 Waterloo profile locations.

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FIGURE 4-2c	
VERTICAL PROFILING TCE CONTOURS AT 20 FEET BELOW GROUND SURFACE COMMERCE STREET SUPERFUND SITE WILLISTON, VERMONT	
PREPARED BY: JF	CHECKED BY: SH
PROJECT NO. 80036	DATE: November 2011 Rev 00



VP-58: 394 Shunpike Road (1,500 ft.)
All results non-detect.



Legend

- VP/WP Sample Location
- <= 5 ug/L (MCL)
- 5.01 - 100 ug/L
- 101 - 1,000 ug/L
- > 1,000 ug/L
- Unnamed Stream
- Property Line
- Building

Notes
1. Figure displays 2010/2011 vertical profile & 2011 Waterloo profile locations.



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FIGURE 4-2d

**VERTICAL PROFILING TCE CONTOURS
AT 25 FEET BELOW GROUND SURFACE
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT**

PREPARED BY: JF

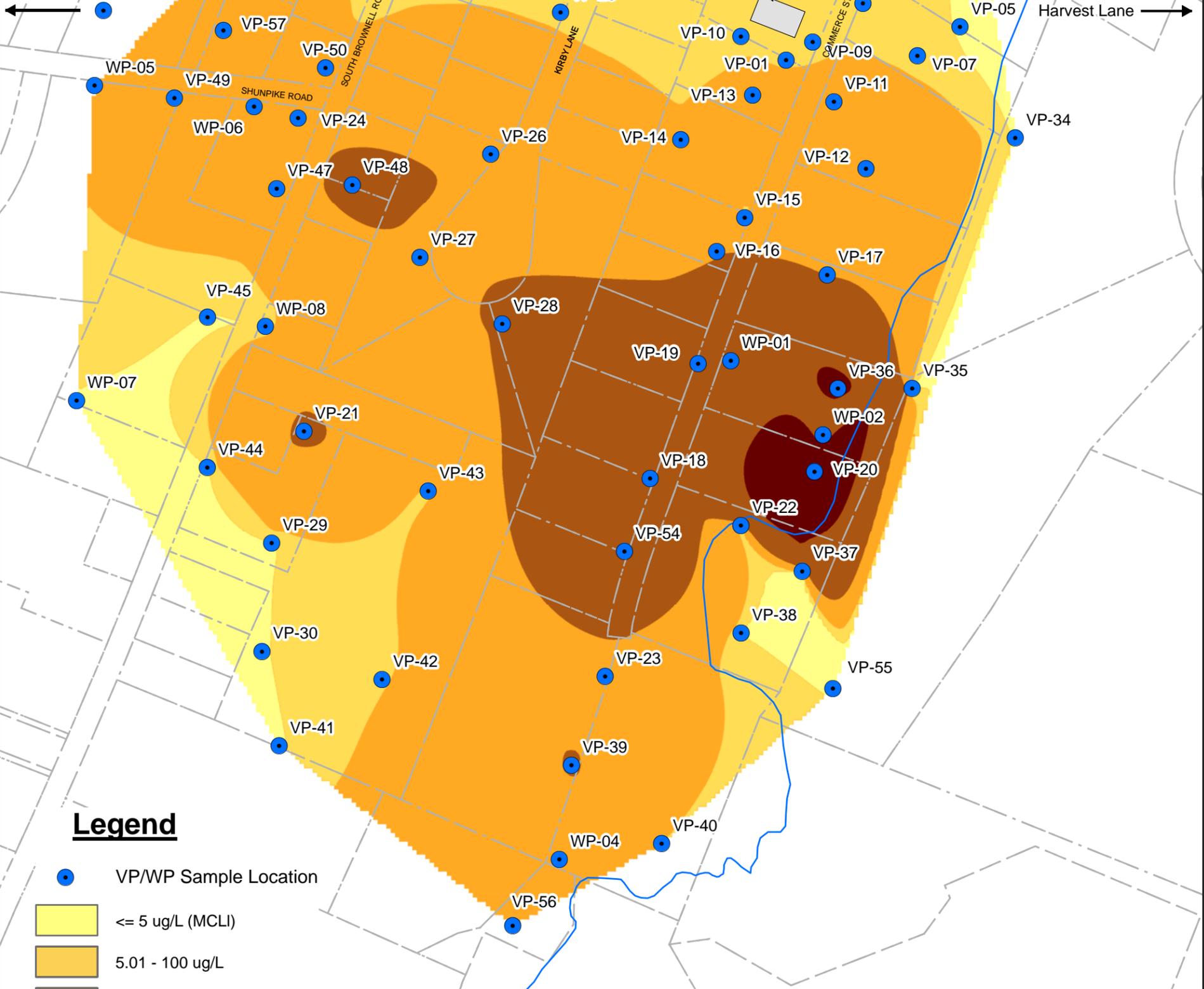
CHECKED BY: SH

PROJECT NO. 80036

DATE: November 2011 Rev 00



VP-58: 394 Shunpike Road (1,500 ft.)
All results non-detect.



Legend

- VP/WP Sample Location
- ≤ 5 ug/L (MCL)
- 5.01 - 100 ug/L
- 101 - 1,000 ug/L
- 1,001 - 10,000 ug/L
- > 10,000 ug/L
- Unnamed Stream
- Property Line
- Building



Notes
1. Figure displays 2010/2011 vertical profile & 2011 Waterloo profile locations.



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FIGURE 4-2e

**VERTICAL PROFILING TCE CONTOURS
AT 30 FEET BELOW GROUND SURFACE
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT**

PREPARED BY: JF

CHECKED BY: SH

PROJECT NO. 80036

DATE: November 2011 Rev 00

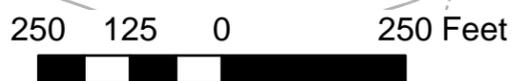


VP-58: 394 Shunpike Road (1,500 ft.)
All results non-detect.



Legend

- VP/WP Sample Location
- ≤ 5 ug/L (MCL)
- 5.01 - 100 ug/L
- 101 - 1,000 ug/L
- 1,001 - 10,000 ug/L
- > 10,000 ug/L
- Unnamed Stream
- Property Line
- Building



Notes
1. Figure displays 2010/2011 vertical profile & 2011 Waterloo profile locations.



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FIGURE 4-2f

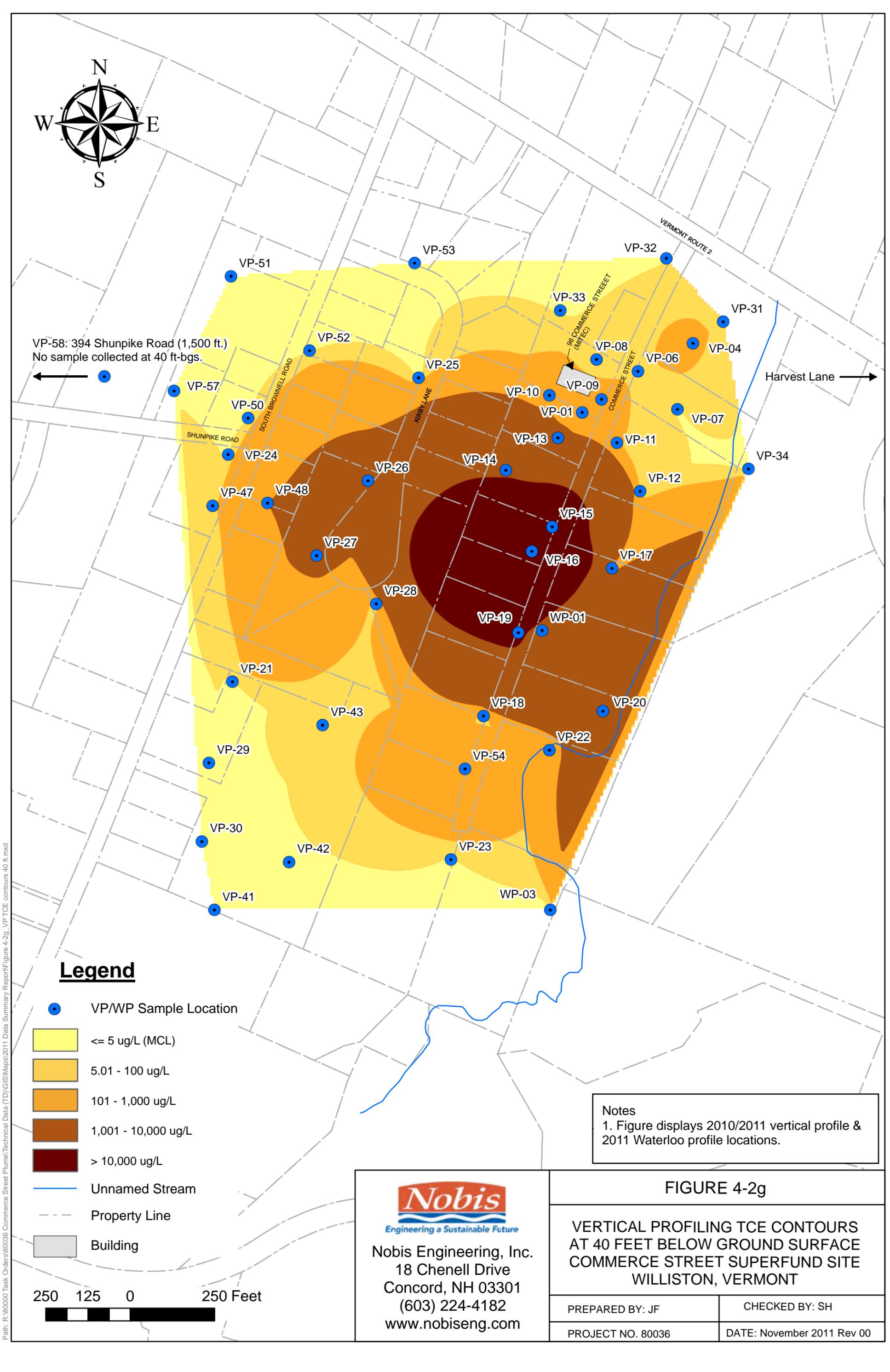
**VERTICAL PROFILING TCE CONTOURS
AT 35 FEET BELOW GROUND SURFACE
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT**

PREPARED BY: JF	CHECKED BY: SH
PROJECT NO. 80036	DATE: November 2011 Rev 00

Path: R:\80000 Task Orders\80036 Commerce Street Plume\Technical Data (TID)\GIS\Maps\2011 Data Summary Report\Figure 4-2f_VP TCE contours 35 ft.mxd

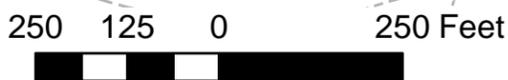


VP-58: 394 Shunpike Road (1,500 ft.)
No sample collected at 40 ft-bgs.



Legend

- VP/WP Sample Location
- ≤ 5 ug/L (MCL)
- 5.01 - 100 ug/L
- 101 - 1,000 ug/L
- 1,001 - 10,000 ug/L
- > 10,000 ug/L
- Unnamed Stream
- Property Line
- Building



Notes
1. Figure displays 2010/2011 vertical profile & 2011 Waterloo profile locations.



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FIGURE 4-2g

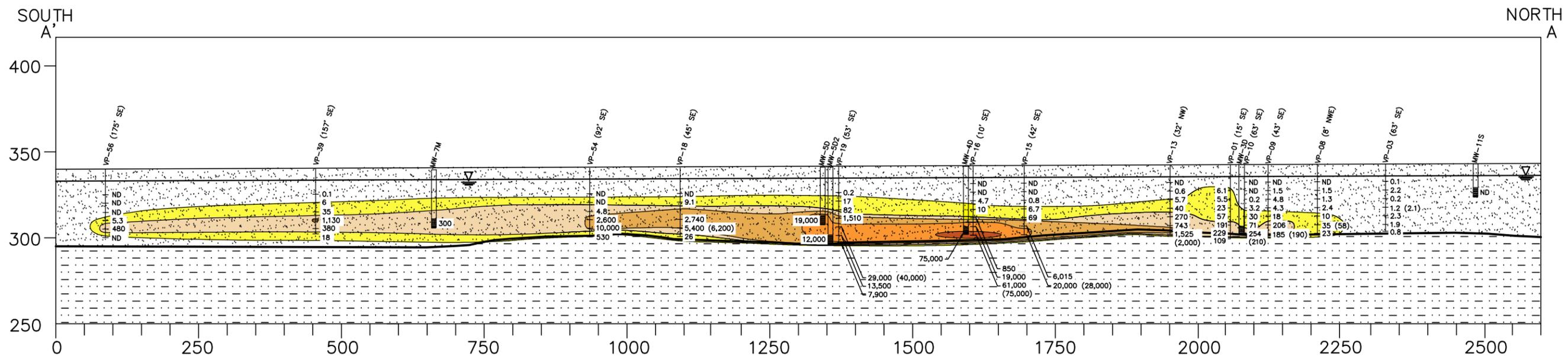
**VERTICAL PROFILING TCE CONTOURS
AT 40 FEET BELOW GROUND SURFACE
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT**

PREPARED BY: JF

CHECKED BY: SH

PROJECT NO. 80036

DATE: November 2011 Rev 00

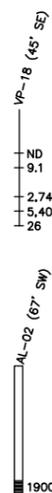


TCE CONCENTRATION RANGES (ug/L)
NOV./DEC. 2010 ANALYTICAL RESULTS

- 5 - 100
- 101 - 1,000
- 1,001 - 10,000
- 10,001 - 25,000
- > 25,000

LEGEND

- SAND
- CLAY
- GROUNDWATER SURFACE

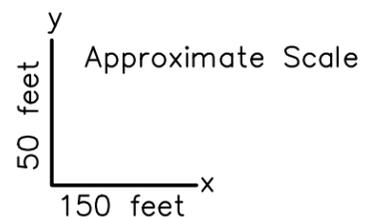


VP-18 (45' SE): Vertical profile location with offset and direction.

Vertical Profile Location with dissolved TCE concentration (ug/L). Fixed CLP laboratory confirmation results in parenthesis.

AL-02 (67' SW): Monitoring well location with offset and direction.

Monitoring well location with dissolved TCE concentration (ug/L).



3X VERTICAL EXAGGERATION

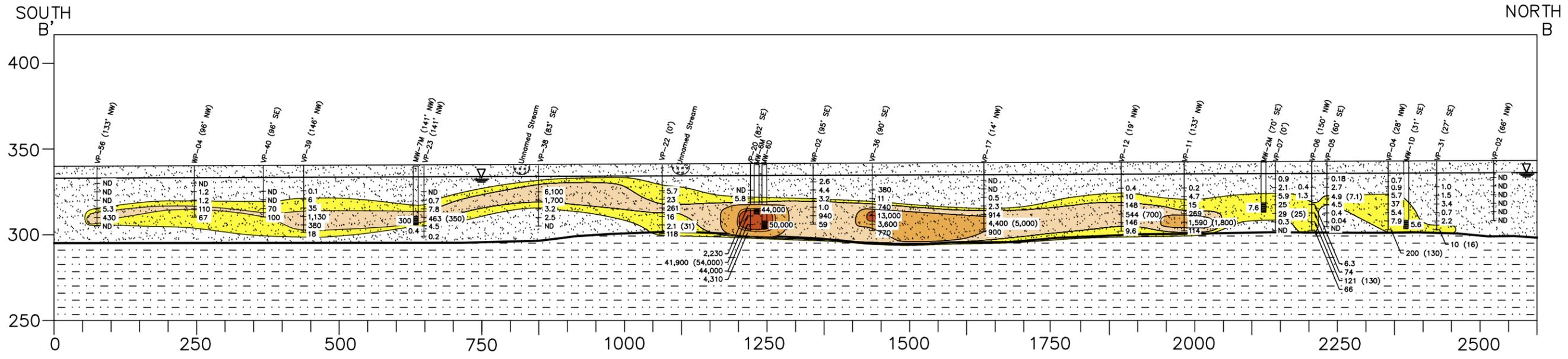


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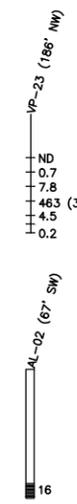
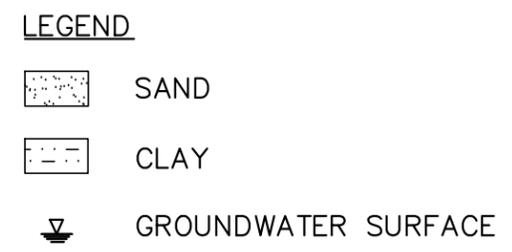
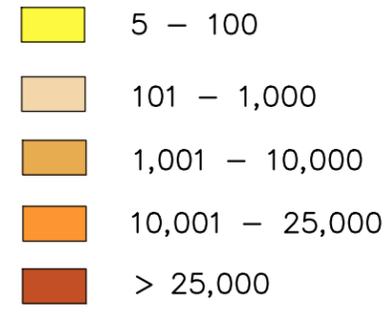
FIGURE 4-3

A-A' CROSS-SECTION: TCE PLUME
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT

DRAWN BY:	JF	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	November 2011



TCE CONCENTRATION RANGES (ug/L)
2010 & 2011 ANALYTICAL RESULTS

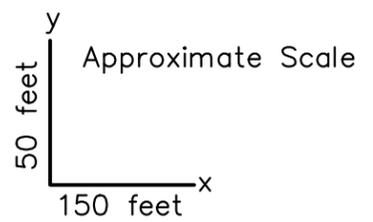


VP-23 (186' NW): Vertical profile location with offset and direction.

Vertical Profile Location with dissolved TCE concentration (ug/L). Fixed CLP laboratory confirmation results in parenthesis.

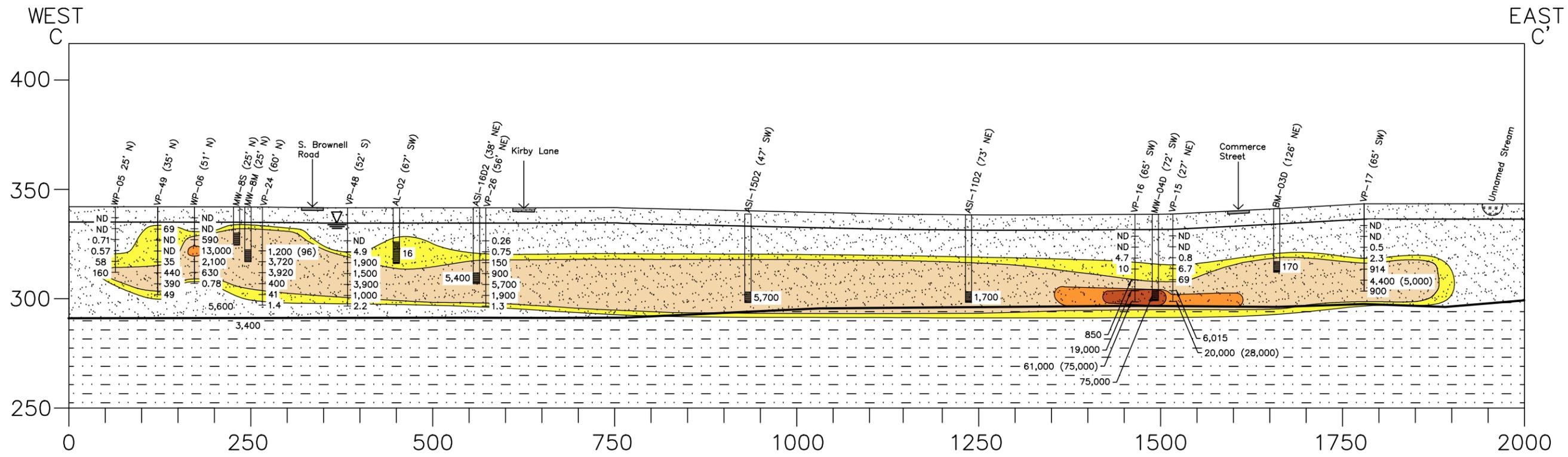
AL-02 (67' SW): Monitoring well location with offset and direction.

Monitoring well location with dissolved TCE concentration (ug/L).

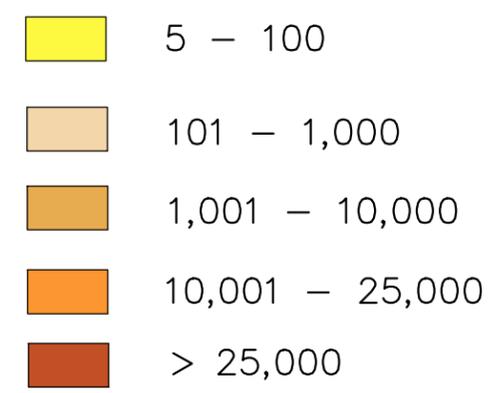


3X VERTICAL EXAGGERATION

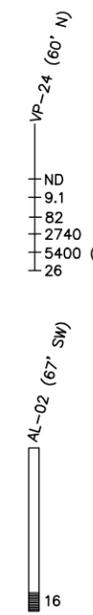
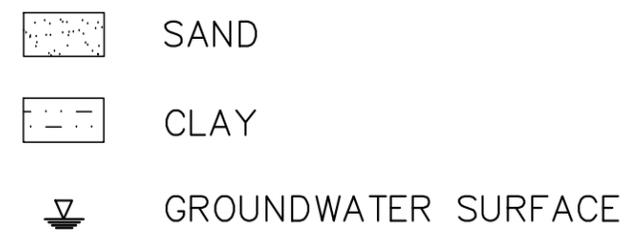
<p>Nobis Engineering a Sustainable Future Nobis Engineering, Inc. 18 Chenell Drive Concord, New Hampshire 03301 Tel (603) 224-4182 Fax (978) 224-2507 www.nobiseng.com</p>	FIGURE 4-4	
	B-B' CROSS-SECTION: TCE PLUME COMMERCE STREET SUPERFUND SITE WILLISTON, VERMONT	
DRAWN BY: JF	APPROVED BY: SH	
PROJECT NO. 80036	DATE: November 2011	



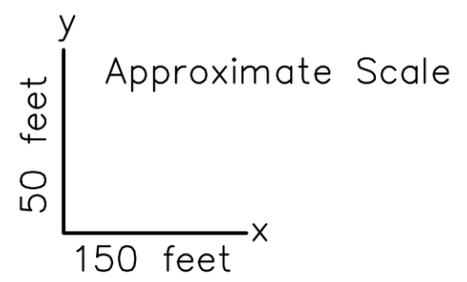
TCE CONCENTRATION RANGES (ug/L)
NOV./DEC. 2010 ANALYTICAL RESULTS



LEGEND



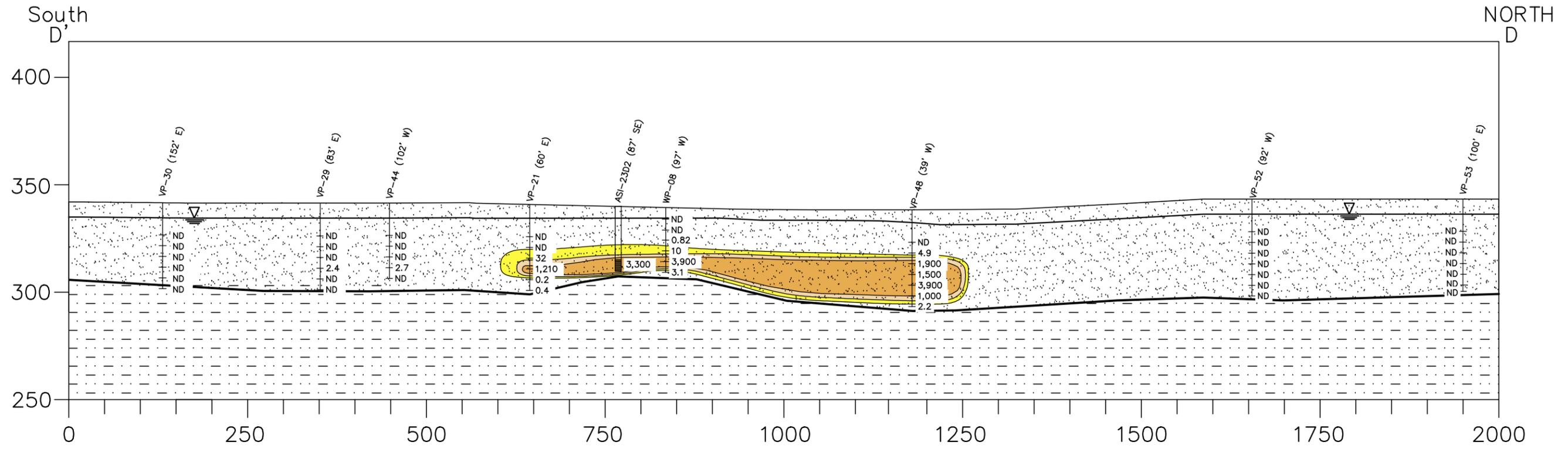
VP-24 (60' N): Vertical profile location with offset and direction.
Vertical Profile Location with dissolved TCE concentration (ug/L). Fixed CLP laboratory confirmation results in parenthesis.
AL-02 (67' SW): Monitoring well location with offset and direction.
Monitoring well location with dissolved TCE concentration (ug/L).



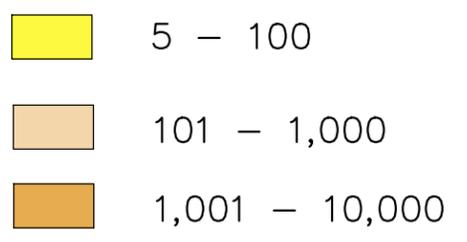
3X VERTICAL EXAGGERATION

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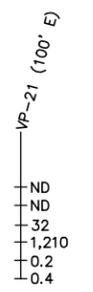
FIGURE 4-5	
C-C' CROSS-SECTION: TCE PLUME COMMERCE STREET SUPERFUND SITE WILLISTON, VERMONT	
DRAWN BY: JF	APPROVED BY: SH
PROJECT NO. 80036	DATE: November 2011



TCE CONCENTRATION RANGES (ug/L)
2010 & 2011 ANALYTICAL RESULTS



LEGEND



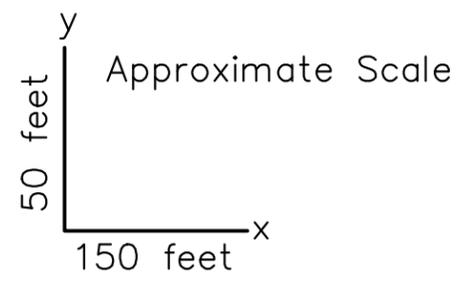
VP-21 (100' E): Vertical profile location with offset and direction.

Vertical Profile Location with dissolved TCE concentration (ug/L).



ASI-23D2 (120' SE): Monitoring well location with offset and direction.

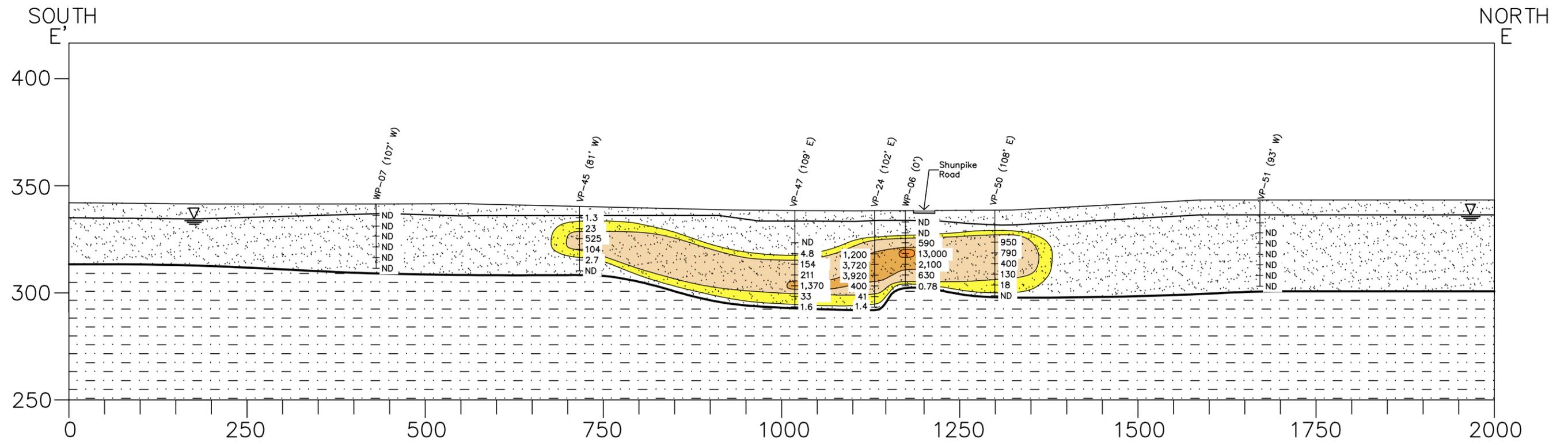
Monitoring well location with dissolved TCE concentration (ug/L).



3X VERTICAL EXAGGERATION

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FIGURE 4-6	
D-D' CROSS-SECTION: TCE PLUME COMMERCE STREET SUPERFUND SITE WILLISTON, VERMONT	
DRAWN BY: JF	APPROVED BY: SH
PROJECT NO. 80036	DATE: November 2011



VP-45 (81' W)
 1.3
 23
 525
 104
 2.7
 ND

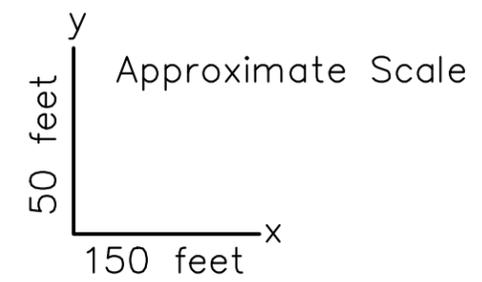
VP-45 (81' W): Vertical profile location with offset and direction.
 Vertical Profile Location with dissolved TCE concentration (ug/L).

TCE CONCENTRATION RANGES (ug/L)
 2010 & 2011 ANALYTICAL RESULTS

- 5 - 100
- 101 - 1,000
- 1,001 - 10,000
- 10,001 - 25,000

LEGEND

- SAND
- CLAY
- GROUNDWATER SURFACE

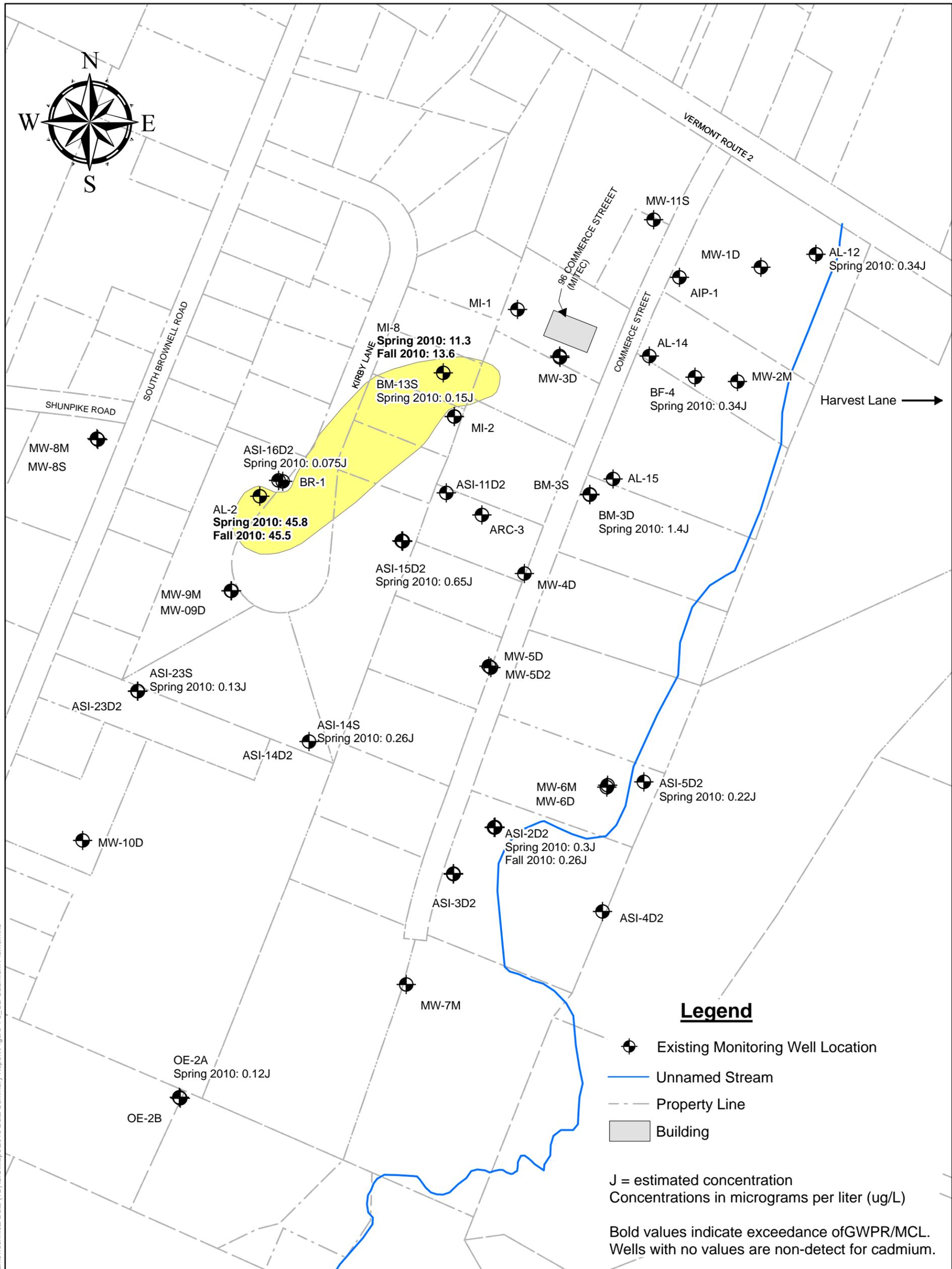


3X VERTICAL EXAGGERATION

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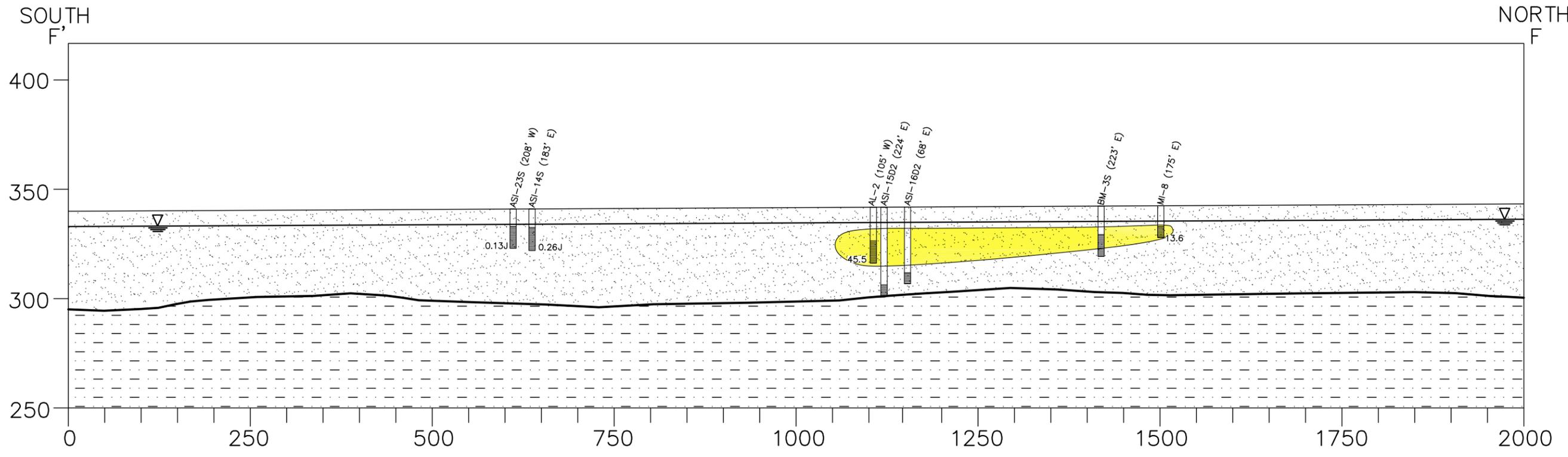
FIGURE 4-7	
E-E' CROSS-SECTION: TCE PLUME COMMERCE STREET SUPERFUND SITE WILLISTON, VERMONT	
DRAWN BY: JF	APPROVED BY: SH
PROJECT NO. 80036	DATE: November 2011

R:\80000 Task Orders\80036 Commerce Street Plume\Technical Data (TD)\CAD\dwg\80036 X-sect\rev2011.dwg



Path: R:\80000\Task Orders\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\2010 Data Summary Report\Figure 4-8_OB Cadmium Plume.mxd

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CADMIUM CONCENTRATION RANGES (ug/L)
 NOV./DEC. 2010 ANALYTICAL RESULTS

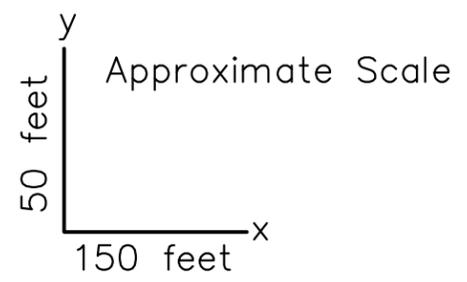
5 - 100

LEGEND

- SAND
- CLAY
- DEPTH TO GROUNDWATER



AL-02 (105' W): Monitoring well location with offset and direction.
 Monitoring well location with dissolved cadmium concentration (ug/L).



3X VERTICAL EXAGGERATION

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FIGURE 4-9	
F-F' CROSS-SECTION: CADMIUM PLUME COMMERCE STREET SUPERFUND SITE WILLISTON, VERMONT	
DRAWN BY: JF	APPROVED BY: SH
PROJECT NO. 80036	DATE: November 2011 Rev 00

**A
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A**



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Low-Flow Field Log

SOP No: SA-003

Date: Mar. 2010

Attachment B, Page 1 of 1

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 8/18/11 Page ____ of ____

Well ID: VP-32

Field Personnel: J. Stewart

Purging Start Time: _____

Well Depth as installed (ft.): _____

Measured Well Depth (ft.): _____

Screen Length in ft. _____ Screen Depth in ft. _____

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): _____ From: _____

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): _____ From: _____

Total Volume Purged, Including Drawdown (gallons): _____

Sample Designation _____

Time at Purge Completion: _____

Sample Time _____

Signature: [Signature]

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) _____

Multimeter model and serial number YSI 600XLM 2486 Turbidity meter model and serial number HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP	DO	Turbidity	Comments / Gas Pressure / Observations
									+/-10	+/- 10% if >0.5 mg/L	+/- 10% if > 5 NTU	
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1500	/					19.62	1022	6.12	-49.6	3.80	461	15 FF
1525	/					17.86	953	5.65	25.5	2.11	373	20 FF
1555	/					17.56	467	6.11	-38.9	0.69	1000+	25 FF
1615	/					16.84	910	6.47	-90.6	1.11	250	30 FF
1645	/					16.92	763	7.03	-168.4	0.77	263	35 FF
1715	/					17.76	612	7.19	-139.4	2.99	425	40 FF
1820	/		No Recovery				in clay					45 FF
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



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Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Attachment B, Page 1 of 1
Rev.: 2

Prepared by: S. Bonis
Approved by: M. Summerlin

Date: 8/19/11 Page of **Well ID:** VP-33
Field Personnel: Josh Stewart **Purging Start Time:**
Well Depth as installed (ft.): **Measured Well Depth (ft.):**
Screen Length in ft.: **Screen Depth in ft.:** **Parameter Stabilization:** (Circle) Yes / No
Depth to GW (ft.): **From:** **Two Hour Time Limit Reached? (Circle) Yes / No**
Pump/Tubing Intake set (ft.): **From:** **Total Volume Purged, Including Drawdown (gallons):**
Sample Designation: **Time at Purge Completion:**
Sample Time: **Signature:** Josh Stewart
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments):
Multimeter model and serial number: YSI 600XM 2486 **Turbidity meter model and serial number:** Hack 2100P 13561
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP	DO	Turbidity	Comments / Gas Pressure / Observations
									+/-10	+/- 10% if >0.5 mg/L	+/- 10% if > 5 NTU	
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
0850	/					12.83	791	6.56	5.1	6.13	1000+	15 FT Voc MS/MSD
0925	/					12.90	1514	6.45	-17.3	3.56	1000+	20 FT Full Set
0950	/					13.01	1689	6.18	25.1	3.01	342	25 FT
1020	/					12.80	1816	6.07	-40.3	1.54	297	30 FT
1050	/					13.44	1978	6.75	-126.2	1.44	214	35 FT
1120	/					14.14	1258	7.08	-152.7	1.24	171	40 FT
1155	/					14.48	1327	7.49	-192.2	0.96	252	45 FT
1240	/					15.81	577	7.97	-172.0	1.14	1000+	50 FT
1325	/											55 FT

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



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Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 3/25/10 Page of

Well ID: VP-34

Field Personnel: Josh Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation:

Time at Purge Completion:

Sample Time:

Signature: Josh Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSE 600XLM 2486

Turbidity meter model and serial number HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if > 5 NTU	Comments / Gas Pressure / Observations
1215	/					19.05	288	6.75	-55.1	2.04	1000+	15 FT VOC MS/MSD
1250	/					18.58	1773	6.43	-24.3	1.39	1000+	20 FT
1325	/					17.67	3213	6.03	48.0	1.22	75.8	25 FT Full Set
1400	/					17.97	3896	6.20	7.6	1.08	46.9	30 FT
1435	/					18.11	2631	6.93	-145.1	1.23	432	35 FT
1515	/					17.82	540	7.55	-131.7	1.72	62.3	40 FT
1545	/					NO Recovery		in	Clay			45 FT Pull up 2.5 FT
1555	/					NO Recovery		in	Clay			42.5 FT
	/											
	/											
	/											
	/											

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Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



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Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 8/25/11 Page of

Well ID: VP-35

Field Personnel Josh Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: [Signature]

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YS 600XLM 2486 Turbidity meter model and serial number HACH 2100P

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if > 0.5 mg/L	Turbidity +/- 10% if > 5 NTU	Comments / Gas Pressure / Observations
0820	/					16.52	1923	6.31	-11.8	1.51	632	15ft VOC DUP
0845	/					15.98	1445	6.91	-132.7	0.93	1000+	20ft
0925	/					15.02	1115	7.29	-157.8	0.86	284	25ft Full Set
0950	/					15.51	788	7.28	-161.4	0.68	1000+	30ft VOC MS/MSD (3)
1030	/					15.56	507	7.85	-156.7	0.98	1000+	35ft clay observed on end of screen 6"
1100	/					NR	Recovery 2n	clay				40ft
	/											
	/											
	/											
	/											
	/											
	/											
	/											

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Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



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Prepared by: S. Bonis
Approved by: M. Summerlin

Date: 8/22/11 Page of **Well ID:** VP-36

Field Personnel: Josh Stewart **Purging Start Time:**

Well Depth as installed (ft.): **Measured Well Depth (ft.):**

Screen Length in ft.: **Screen Depth in ft.:** **Parameter Stabilization:** (Circle) Yes / No

Depth to GW (ft.): **From:** **Two Hour Time Limit Reached?** (Circle) Yes / No

Pump/Tubing Intake set (ft.): **From:** **Total Volume Purged, Including Drawdown (gallons):**

Sample Designation: **Time at Purge Completion:**

Sample Time: **Signature:** Josh Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments):

Multimeter model and serial number: YSI 600XLM 2486 **Turbidity meter model and serial number:** HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/-10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if >5 NTU	Comments / Gas Pressure / Observations
0800	/					16.32	1081	6.47	-72.5	2.24	379	15ft
0830	/				1557	10.89	890	6.91	-142.6	0.89	1000+	20ft
0855	/					15.25	912	6.89	-120.8	1.19	1000+	25ft Pull Set
0930	/					14.83	738	7.05	-143.8	0.55	1000+	30ft
1010	/					14.76	608	7.24	-141.2	1.09	1000+	35ft
1035	/			No recovery in clay								40ft Pull up to 38ft
1045	/					15.00	442	7.82	-81.2	1.68	1000+	38ft
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
NR = No Reading
Use the back of the log to record additional observations and descriptions.



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Date: Mar. 2010

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Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 0123/11 Page of

Well ID: VP-37

Field Personnel: Joh Stevare

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: Joh Stevare

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600XLN 2486 Turbidity meter model and serial number HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if > 5 NTU	Comments / Gas Pressure / Observations
1250	/					15.51	652	6.46	-121.2	1.71	417	15 FT
1310	/					14.36	1244	6.57	-100.3	1.19	1000+	20 FT
1400	/					13.50	1040	6.56	-121.5	1.40	935	25 FT Full set metal/Diox MS/MSD
1445	/					14.82	882	6.77	-133.9	1.35	1000+	30 FT
1525	/					14.90	636	6.70	-143.7	0.91	1000+	35 FT
1550	/					No recovery in clay						40 FT Pull up 2.5 FT
1600	/					No recovery in clay						37.5 FT
	/											
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.

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Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 8/23/11 Page of

Well ID: VP-38

Field Personnel Josh Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake sct (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: [Signature]

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600XLM 2486 Turbidity meter model and serial number HACH 2100P 13564

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if >5 NTU	Comments / Gas Pressure / Observations
0800	/					14.93	562	6.98	-34.6	2.12	232	15ft
0830	/					13.55	336	7.18	-118.2	2.07	515	20ft
0900	/					13.68	218	7.28	-162.9	0.98	1000+	25ft
0950	/					14.08	247	7.28	-129.9	1.22	578	30ft Full seq DUP
1030	/					14.41	264	7.34	-84.3	0.95	1000+	35ft
1055	/					No recovery in clay						40ft Pull up to 37.5
1110	/					No recovery in clay						37.5ft
	/											
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.

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Rev.: 2

Prepared by: S. Bonis
Approved by: M. Summerlin

Date: 8/19/11 Page ____ of ____ Well ID: VP 39
 Field Personnel: John Stewart Purging Start Time: _____
 Well Depth as installed (ft.): _____ Measured Well Depth (ft.): _____
 Screen Length in ft. _____ Screen Depth in ft. _____ Parameter Stabilization: (Circle) Yes / No
 Depth to GW (ft.): _____ From: _____ Two Hour Time Limit Reached? (Circle) Yes / No
 Pump/Tubing Intake set (ft.): _____ From: _____ Total Volume Purged, Including Drawdown (gallons): _____
 Sample Designation: _____ Time at Purge Completion: _____
 Sample Time: _____ Signature: John Stewart
 Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments): _____
 Multimeter model and serial number YSI 600XRM 2486 Turbidity meter model and serial number Hack 2100P 17561
 Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.) _____

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP	DO	Turbidity	Comments / Gas Pressure / Observations
									+/-10	+/- 10% if >0.5 mg/L	+/- 10% if > 5 NTU	
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
0810	/					16.57	1428	5.96	12.8	2.82	834	15 FT
0835	/					15.24	1847	5.54	51.4	0.92	1000+	20 FT
0855	/					14.94	319	6.13	-12.9	1.58	318	25 FT
0935	/					14.84	742	6.87	-134.9	0.96	288	30 FT PUN SET
1020	/					16.14	538	7.85	-20.2	0.28	1000+	35 FT
1110	/					15.82	282	8.20	-16.9	0.34	1000+	40 FT 38 FT
												clay at 38 FT 69.5
	/											
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



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Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 9/24/11 Page of

Well ID: VP-40

Field Personnel Josh Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: Josh Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600XLM 2486

Turbidity meter model and serial number HACL 2100P 13561

Notcs: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if > 5 NTU	Comments / Gas Pressure / Observations
0815	/					13.55	1473	5.78	-24.2	3.77	643	15 FT
0840	/					13.12	928	6.06	25.8	1.28	557	20 FT
0920	/					13.77	1510	6.53	-123.9	0.99	791	25 FT Full Set
0955	/					13.61	455	7.01	-116.7	0.55	1000+	30 FT
1020	/				NR	recovery in clay						35 FT PUM UP 25 FT
1030	/				NR	recovery in clay						32.5 FT
	/											
	/											
	/											
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



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Prepared by: S. Bonis
Approved by: M. Summerlin

Date: 8/15/11 Page 1 of 1
Field Personnel JosL Stewart
Well Depth as installed (ft.): _____
Screen Length in ft. _____ Screen Depth in ft. _____
Depth to GW (ft.): _____ From: _____
Pump/Tubing Intake set (ft.): _____ From: _____
Sample Designation _____
Sample Time _____

Well ID: VP-41
Purging Start Time: _____
Measured Well Depth (ft.): _____
Parameter Stabilization: (Circle) Yes / No
Two Hour Time Limit Reached? (Circle) Yes / No
Total Volume Purged, Including Drawdown (gallons): _____
Time at Purge Completion: _____
Signature: JosL Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) _____
Multimeter model and serial number YSI 600XLM 2496 Turbidity meter model and serial number HACH 2100P 13561
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP	DO	Turbidity	Comments / Gas Pressure / Observations
									+/-10	+/- 10% if >0.5 mg/L	+/- 10% if > 5 NTU	
HHMM	sec. / sec. or setting	m/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1055	/					15.10	40	7.57	22.1	7.38	609	15 Ft
1125	/					13.18	137	6.63	33.7	5.03	285	20 Ft
1200	/					13.40	691	6.81	-33.5	2.69	184	25 Ft
1255	/					14.41	1373	7.75	-246.9	1.34	1000+	30 Ft Full Set for Fixed 196
1330	/					13.38	270	8.41	-164.4	2.47	535	35 Ft
1410	/					13.96	134	8.25	-154.9	2.10	606	40 Ft 35 Ft
1455	/					12.87	235	8.31	-177.9	0.83	1000+	45 Ft 40 Ft
1525	/											45 / 43 Ft

Notes: All depths in feet below top of PVC unless specified.
NR = No Reading
Use the back of the log to record additional observations and descriptions.



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Rev.: 2

Prepared by:

S. Bonis

Approved by:

M. Summerlin

Date: 8/16/11 Page _____ of _____

Well ID: VP-92

Field Personnel Josh Stewart

Purging Start Time: _____

Well Depth as installed (ft.): _____

Measured Well Depth (ft.): _____

Screen Length in ft. _____ Screen Depth in ft. _____

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): _____ From: _____

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): _____ From: _____

Total Volume Purged, Including Drawdown (gallons): _____

Sample Designation _____

Time at Purge Completion: _____

Sample Time _____

Signature: Josh Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) _____

Multimeter model and serial number YSI 600XLM 2486 Turbidity meter model and serial number Hach 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP	DO	Turbidity	Comments / Gas Pressure / Observations	
									+/- 10	+/- 10% if >0.5 mg/L	+/- 10% if > 5 NTU		
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU		
1340						13.96	457	6.71	0.0	5.00	528	15 FT	
1410						13.85	478	6.25	-10.6	4.3A	231	20 FT	
1440						13.79	984	7.69	-14.5	1.93	318	25 FT	
1505						13.53	1271	7.88	-186.4	2.21	116	30 FT	
1545						14.40	1528	7.94	-222.5	0.72	652	35 FT full set collected	
1630						14.67	884	7.96	-188.2	1.35	1000+	40 FT	
1715			NOT enough recovery for readings										45 FT in clay
			Sample collected ~ 500 Fines										

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



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Rev.: 2

Prepared by: S. Bonis
Approved by: M. Summerlin

Date: 8/16/11 Page of
Field Personnel Josh Stewart
Well Depth as installed (ft.):
Screen Length in ft. Screen Depth in ft.
Depth to GW (ft.): From:
Pump/Tubing Intake set (ft.): From:
Sample Designation
Sample Time

Well ID: VP-43
Purging Start Time:
Measured Well Depth (ft.):
Parameter Stabilization: (Circle) Yes / No
Two Hour Time Limit Reached? (Circle) Yes / No
Total Volume Purged, Including Drawdown (gallons):
Time at Purge Completion:
Signature: JOS

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)
Multimeter model and serial number YSI 600XLM 2486 Turbidity meter model and serial number HALL 2100P 13564

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP	DO	Turbidity	Comments / Gas Pressure / Observations
									+/-10	+/- 10% if >0.5 mg/L	+/- 10% if > 5 NTU	
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
0815						14.90	54	6.56	69.9	7.29	624	15 FT
0840						13.32	290	5.61	-80.5	2.22	138	20 FT
0905						12.79	307	5.80	-82.4	2.58	157	25 FT
0940						12.97	490	5.72	-135.3	1.65	186	30 FT
1015						13.42	500	7.47	-273.7	0.36	459	35 FT
1140						14.16	225	8.07	-157.5	1.80	559	40 FT
1100						13.89	206	8.08	-91.5	2.08	1000+	45 FT over DM11 collect then
1220			Not enough volume for					geo Chem				50 FT pull up to 40 FT
			sample was collected					for				EPA mobile lab
												Platform estimates clay at
												47 FT 69S

Notes: All depths in feet below top of PVC unless specified.
NR = No Reading
Use the back of the log to record additional observations and descriptions.



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Date: Mar. 2010

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Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 8/26/11 Page of

Well ID: VP-44

Field Personnel: Joe Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: Joe Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number Turbidity meter model and serial number

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if >5 NTU	Comments / Gas Pressure / Observations
0800	/					15.19	283	6.88	22.1	4.52	1000f	15FT Vac MS/MSD
0825	/					14.26	150	6.34	55.1	6.23	515	20FT
0845	/					14.21	606	6.86	-82.4	1.81	1000f	25FT
0910	/					13.90	690	7.70	-148.9	0.62	1000f	30FT
0935	/					14.41	208	8.12	-92.7	0.98	1000f	35FT
1000	/					No recovery in clay						40FT PULL UP 2.5FT
1005	/					No recovery in clay						432.5FT
	/											
	/											
	/											
	/											

R: Standard Operating Procedures/Field Forms/Sampling

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



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Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Attachment B, Page 1 of 1
Rev.: 2

Prepared by: S. Bonis
Approved by: M. Summerlin

Date: 8/17/11 Page ____ of ____
Field Personnel Josh Stewart
Well Depth as installed (ft.): _____
Screen Length in ft. _____ Screen Depth in ft. _____
Depth to GW (ft.): _____ From: _____
Pump/Tubing Intake sct (ft.): _____ From: _____
Sample Designation _____
Sample Time _____

Well ID: VP-45
Purging Start Time: _____
Measured Well Depth (ft.): _____
Parameter Stabilization: (Circle) Yes / No
Two Hour Time Limit Reached? (Circle) Yes / No
Total Volume Purged, Including Drawdown (gallons): _____
Time at Purge Completion: _____
Signature: Josh Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) _____
Multimeter model and serial number YSI 600KLM 2486 Turbidity meter model and serial number HANNA 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP	DO	Turbidity	Comments / Gas Pressure / Observations
									+/-10	+/- 10% if >0.5 mg/L	+/- 10% if > 5 NTU	
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
0820	/					14.96	422	6.86	-101.9	1.01	121	15 FT VOC MS/MSD
0845	/					13.89	254	7.53	-99.2	2.25	148	20 FT
0915	/					13.89	217	8.03	-139.0	1.52	1000+	25 FT
0950	/					14.82	266	7.91	-64.3	1.27	1000+	30 FT Full set
1025	/											35 FT
												40 FT IS
1640	/					22.01	1031	6.70	5.7	2.43	304	5 FT METALS
1655	/					18.32	1507	6.44	16.5	1.59	701	10 FT
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
NR = No Reading
Use the back of the log to record additional observations and descriptions.



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Low-Flow Field Log

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Date: Mar. 2010

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Rev.: 2

Prepared by: S. Bonis
Approved by: M. Summerlin

Date: 8/17/11 Page of **Well ID:** VP-47

Field Personnel: Josh Stewart **Purging Start Time:**

Well Depth as installed (ft.): **Measured Well Depth (ft.):**

Screen Length in ft.: **Screen Depth in ft.:**

Depth to GW (ft.): **From:**

Pump/Tubing Intake set (ft.): **From:**

Sample Designation: **Parameter Stabilization:** (Circle) Yes / No

Sample Time: **Two Hour Time Limit Reached? (Circle) Yes / No**

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments): **Total Volume Purged, Including Drawdown (gallons):**

Multimeter model and serial number: YSI 600 XLM 2486 **Turbidity meter model and serial number:** HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Signature: Josh Stewart

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if > 0.5 mg/L	Turbidity +/- 10% if > 5 NTU	Comments / Gas Pressure / Observations
1125	/					16.85	786	6.73	-0.4	3.74	1000+	15 FT
1150	/					15.46	1845	6.35	-49.9	2.05	220	20 FT
1230	/					14.28	2276	6.74	-88.5	2.76	340	25 FT Full Set JS
1330	/					15.18	1997	7.14	-63.3	1.46	124	30 FT
1400	/					15.09	571	7.00	-186.6	1.05	235	35 FT
1440	/					15.65	239	7.76	-175.7	1.78	1000+	40 FT Full Set
1520	/					16.52	219	7.90	-216.8	0.15	1000+	45 FT Full Set JS
						Clear encountered at 45 ft bgs						Water Table

Notes: All depths in feet below top of PVC unless specified.
NR = No Reading
Use the back of the log to record additional observations and descriptions.



Engineering a Sustainable Future

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Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 8/30/11 Page of

Well ID: VP-49

Field Personnel: Josh Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: Josh Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600XLM 2486 Turbidity meter model and serial number HALL 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum Draw down	Temp. +/- 3%	Spec Cond. +/- 3%	pH +/- 0.1	ORP +/-10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if >5 NTU	Comments / Gas Pressure / Observations
0845	/					14.31	514	6.64	108.1	3.27	675	15 FT
0915	/					14.37	1545	6.29	8.1	0.68	265	20 FT
0955	/					13.51	1614	6.53	-55.3	1.51	268	25 FT
1035	/					14.19	1842	6.98	-128.6	1.05	459	30 FT
1120	/					14.82	983	7.56	-163.2	0.67	411	35 FT
1200	/					15.97	353	7.73	-160.6	0.75	817	40 FT
1250	/					16.20	216	7.92	-109.5	0.99	1000+	45 FT
1335	/					No recovery		in clay				50 FT
	/											
	/											
	/											
	/											

VP-52 15' 1510

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Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



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Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 8/29/11 Page of

Well ID: VP-49

Field Personnel Josh Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: Josh Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600 XL M 888

Turbidity meter model and serial number HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if > 5 NTU	Comments / Gas Pressure / Observations
									mV	mg/L	NTU	
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm					
1340	/					19.30	3211	7.01	-54.6	2.12	1000+	15 FT
1405	/					15.50	4325	6.85	-85.2	1.22	464	20 FT
1435	/					13.52	5927	7.22	-132.8	2.38	143	25 FT Full Set
1510	/					15.00	3153	7.36	-164.7	1.51	119	30 FT
1540	/					15.98	919	7.65	-143.0	1.67	1000+	35 FT
1605	/					No Reading		in clay				40 FT pull up 2.5 FT
1615	/					13.92	299	7.91	-94.1	1.50	1000+	37.5 FT
1645	/					17.10	2864	7.11	-46.6	2.27	1000+	10 FT
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.

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8/29/11



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Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 9/26/11 Page of

Well ID: VP-50

Field Personnel JOSL Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: JOSL Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600xLM 2486 Turbidity meter model and serial number HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if > 5 NTU	Comments / Gas Pressure / Observations
1130	/					14.80	689	6.38	3.4	0.64	1000+	15 FT
1150	/					14.87	655	7.40	-87.2	0.71	1000+	20 FT
1210	/					14.66	475	7.60	-138.8	0.97	252	25 FT
1250	/					14.52	391	7.81	-157.3	0.77	1000+	30 FT
1320	/					14.10	313	7.85	-169.5	1.37	254	35 FT
1350	/					15.22	244	7.96	-120.6	1.28	901	40 FT
1415	/					NO Recovery in clay					45 FT	PULL UP 2.5 FT
1425	/					NO Recovery in clay					42.5 FT	
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NK = No Reading
 Use the back of the log to record additional observations and descriptions.

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Date: Mar. 2010

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Prepared by: S. Bonis

Approved by: M. Summerlin

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Well ID: VP-51

Field Personnel: Josh Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: [Signature]

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSE 600XLM 2486 Turbidity meter model and serial number HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO	Turbidity	Comments / Gas Pressure / Observations
										+/- 10% if >0.5 mg/L	+/- 10% if >5 NTU	
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
0850	/					19.40	488	6.72	67.3	2.86	1000+	10FT
0910	/					18.13	666	6.82	2.1	4.33	1000+	15FT
0930	/					16.78	967	6.79	23.4	3.24	220	20FT
0950	/					16.00	1615	6.91	-15.8	1.96	173	25FT
1010	/					17.00	1083	7.13	-111.9	1.72	158	30FT
1050	/					17.52	742	7.32	-157.6	1.54	740	35FT
1125	/					17.39	405	7.55	-98.3	0.93	1000+	40FT
1215	/					No Recovery		in clay				45FT Pull UP 25FT
1225	/					No Recovery		in clay				42.5FT
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



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Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 073011 Page of

Well ID: VP-52

Field Personnel: Josh Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation:

Time at Purge Completion:

Sample Time:

Signature: Josh Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600XM 2486 Turbidity meter model and serial number HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/-10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if >5 NTU	Comments / Gas Pressure / Observations
1510	/					16.72	303	6.99	-23.9	4.03	169	15 FT
1540	/					16.71	346	6.84	-24.8	3.26	432	20 FT
1600	/					15.96	1160	6.68	-44.5	2.86	433	25 FT VOC Confirmation
1630	/					16.05	1277	7.06	-128.2	1.03	500	30 FT
1700	/					15.59	956	7.37	-148.7	1.00	170	35 FT
1730	/					16.28	574	7.38	-154.4	1.08	636	40 FT
1800	/					15.30	324	7.62	-143.2	1.06	1000f	45 FT
1840	/					No recovery		in clay				50 FT
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC, unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



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Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 8/24/11 Page of

Well ID: VP-53

Field Personnel Josh Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: Josh Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600LM 2486 Turbidity meter model and serial number HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if > 0.5 mg/L	Turbidity +/- 10% if > 5 NTU	Comments / Gas Pressure / Observations
1125	/					17.86	519	7.45	-48.3	1.42	153	15 FT VOC MS/MSD
1150	/					17.61	444	6.66	-8.8	2.56	989	20 FT
1220	/					16.40	461	6.72	2.1	3.54	195	25 FT PULL 20 FT
1300	/					16.38	610	6.21	-134.8	1.77	34.9	30 FT
1330	/					16.22	550	5.68	-148.0	1.13	250	35 FT
1420	/					17.28	476	6.04	-168.7	1.29	460	40 FT
1500	/											No recovery sample recovery too slow 45 FT PULL UP TO 25
												ESPIMAN clay at 45 FT - 41 FT
1510	/					16.02	408	6.72	-143.7	2.24	112	42.5 FT

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.

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Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 8/22/11 Page of

Well ID: VP-54

Field Personnel Josh Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake sct (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: Josh Stewart

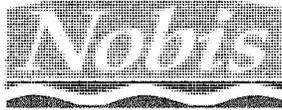
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600XLM 2486 Turbidity meter model and serial number HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if >5 NTU	Comments / Gas Pressure / Observations
1145	/					16.12	782	6.74	60.2	3.52	341	15 FT
1220	/					15.32	543	5.81	53.5	1.52	939	20 FT
1240	/					15.99	676	5.97	60.8	1.36	618	25 FT
1330	/					15.66	1131	6.54	-136.2	1.03	1000+	30 FT Full set VOC DUP
1410	/					15.76	965	7.00	-182.1	0.64	1000+	35 FT
1450	/					15.42	281	7.65	-127.2	1.07	1000+	40 FT
1520	/											45 FT pulled up 2 FT
1530	/											43 FT
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



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Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

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Well ID: VP-55

Field Personnel Josh Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: Josh Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600XLM 2486 Turbidity meter model and serial number HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if >5 NTU	Comments / Gas Pressure / Observations
0855	/					14.48	1599	6.24	52.3	2.53	704	15 FT MS/MSD
0925	/					13.52	1187	6.87	-83.4	1.31	1000+	20 FT
1000	/					12.70	698	7.62	-128.2	0.30	1000+	25 FT
1030	/					12.50	569	7.91	-117.8	0.72	1000+	30 FT last Ft soft
1100	/				NO	recovery in		clay				35 FT 29-35 FT soft
	/											
	/											
	/											
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.

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Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 10/19/11 Page of

Well ID: VP-56

Field Personnel Jose Stewart

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: *[Signature]*

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600 XLM 2486 Turbidity meter model and serial number HACK 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if >5 NTU	Comments / Gas Pressure / Observations
HHMM	sec./sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1200	/					15.18	962	6.92	-92.6	2.52	1000+	10 Ft
1220	/					14.33	606	6.71	-53.6	1.80	777	15 Ft
1245	/					13.62	256	6.43	48.7	4.35	29.7	20 Ft
1320	/					13.60	341	6.16	70.1	2.92	484	25 Ft dup
1405	/					13.46	481	7.87	-63.4	1.61	1000+	30 Ft ↓
1515	/					13.27	249	8.27	-54.4	0.73	1000+	35 Ft
1550	/				No	recovery in clay						40 Ft soft
	/											
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



Engineering a Sustainable Future

Low-Flow Field Log

SOP No: SA-003

Attachment B, Page 1 of 1

Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 10/5/11 Page of

Field Personnel Josh Stewart

Well Depth as installed (ft.):

Screen Length in ft. Screen Depth in ft.

Depth to GW (ft.): From:

Pump/Tubing Intake set (ft.): From:

Sample Designation

Sample Time

Well ID: VP-57

Purging Start Time:

Measured Well Depth (ft.):

Parameter Stabilization: (Circle) Yes / No

Two Hour Time Limit Reached? (Circle) Yes / No

Total Volume Purged, Including Drawdown (gallons):

Time at Purge Completion:

Signature: Josh Stewart

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600XLN 2486 Turbidity meter model and serial number HACH 2100P 13561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP +/- 10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if >5 NTU	Comments / Gas Pressure / Observations
HHMM	sec./sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
0855	/					14.48	481	6.44	43.4	4.96	919	10ft
0910	/					13.62	752	6.60	18.3	2.64	720	15ft
0930	/					12.16	691	6.52	44.9	5.22	392	20ft + dup
1000	/					11.95	691	7.10	-22.3	2.82	978	25ft
1020	/					11.42	572	7.64	-119.8	2.16	621	30ft
1055	/					11.64	302	7.89	-108.7	1.52	260	35ft
1135	/					12.34	222	8.03	-121.6	1.18	1000f	40ft
1210	/											No Recovery in clay 45ft soft 5ft
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.



Engineering a Sustainable Future

Low-Flow Field Log

SOP No: SA-003

Attachment B, Page 1 of 1

Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis

Approved by: M. Summerlin

Date: 10/31/11 Page of

Well ID: UP-58

Field Personnel: JOB SEWERT

Purging Start Time:

Well Depth as installed (ft.):

Measured Well Depth (ft.):

Screen Length in ft. Screen Depth in ft.

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): From:

Two Hour Time Limit Reached? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From:

Total Volume Purged, Including Drawdown (gallons):

Sample Designation

Time at Purge Completion:

Sample Time

Signature: JOB SEWERT

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)

Multimeter model and serial number YSI 600 XLM 2496 Turbidity meter model and serial number HACH 2100P 17561

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3%	pH +/- 0.1	ORP	DO	Turbidity	Comments / Gas Pressure / Observations
									+/- 10	+/- 10% if >0.5 mg/L	+/- 10% if >5 NTU	
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1315	/					15.56	724	6.82	-4.4	3.52	108	10 ft
1335	/					14.92	1662	6.66	-66.8	2.26	973	15 ft
1400	/					13.39	2155	6.34	-21.1	1.43	50.4	20 ft MS / MSD
1425	/					13.34	690	6.66	-77.7	1.27	1000+	25 ft
1500	/					12.81	376	7.04	-129.3	0.56	1000+	30 ft Soft
1535	/					No recovery		in cap				35 ft PUN UP Soft
1550	/					11.92	379	7.23	-117.5	0.51	1000+	33 ft
	/											
	/											
	/											
	/											
	/											

Notes: All depths in feet below top of PVC unless specified.
 NR = No Reading
 Use the back of the log to record additional observations and descriptions.

R:\Standard Operating Procedures\Field Forms\Sampling

**A
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X

B**



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

October 13, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080075

Project: Commerce Street Plume - Williston, VT
Analysis: Total Recoverable Metals in Water by ICP
EPA Chemists: Michael Dowling and Janet Paquin
MD 10/13/11 JP 10/14/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

The sample preparation and analysis SOP's are based on Methods 3010A or 3005A and 6010B as stated in "Test Methods for Evaluating Solid Waste, 3rd ed., Final Update III, 7/92 and 12/96."

The samples were analyzed using a Perkin Elmer 4300 Dual View Inductively Coupled Plasma - Optical Emission Spectrometer.

Date Samples Received by the Laboratory: 08/31/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N. Boudreau 10/19/11

Daniel N. Boudreau
Chemistry Team Leader

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID:	VP-4925A	Lab Sample ID:	AB21287
Date of Collection:	8/29/2011	Matrix:	GW
Date of Digestion:	9/26/2011	Final Volume:	50 mL
Date of Analysis:	10/4/2011	Digestate Dilution:	1
Volume Digested:	50 mL	pH:	<2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	810	110	J1, J3
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	210	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	160000	100	
7440-47-3	Chromium	ND	20	
7440-48-4	Cobalt	ND	20	
7440-50-8	Copper	ND	20	
7439-89-6	Iron	15000	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	27000	100	
7439-96-5	Manganese	2300	20	
7440-02-0	Nickel	ND	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	ND	20	
7440-66-6	Zinc	35	20	B

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Reagent Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	Water
Date of Digestion:	9/26/2011	Final Volume:	50 mL
Date of Analysis:	10/4/2011	Digestate Dilution:	1
Volume Digested:	50 mL	pH:	<2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	ND	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	360	100	
7440-47-3	Chromium	ND	20	
7440-48-4	Cobalt	ND	20	
7440-50-8	Copper	ND	20	
7439-89-6	Iron	ND	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	ND	100	
7439-96-5	Manganese	ND	20	
7440-02-0	Nickel	ND	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	ND	20	
7440-66-6	Zinc	29	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

METALS MATRIX SPIKE (MS) RESULTS

Commerce Street Plume - Williston, VT

Sample ID: AB21287

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
Aluminum	500	810	3090	460	75 - 125
Antimony	500	ND	502	100	75 - 125
Arsenic	500	ND	520	104	75 - 125
Barium	500	210	708	100	75 - 125
Beryllium	200	ND	201	100	75 - 125
Cadmium	250	ND	242	97	75 - 125
Chromium	500	ND	525	105	75 - 125
Cobalt	500	ND	484	97	75 - 125
Copper	500	ND	562	112	75 - 125
Iron	500	15000	18200	R	75 - 125
Lead	500	ND	492	98	75 - 125
Manganese	500	2300	2810	R	75 - 125
Nickel	500	ND	496	99	75 - 125
Selenium	500	ND	482	96	75 - 125
Silver	100	ND	106	106	75 - 125
Thallium	500	ND	477	95	75 - 125
Vanadium	500	ND	540	108	75 - 125
Zinc	500	35	534	100	75 - 125

Comments:

Samples in Batch: AB21287

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21287

PARAMETER	SAMPLE RESULT	SAMPLE DUPLICATE RESULT	PRECISION RPD	QC LIMITS
	ug/L	ug/L	%	
Aluminum	810	1300	46	20
Antimony	ND	ND	NC	20
Arsenic	ND	ND	NC	20
Barium	210	210	0	20
Beryllium	ND	ND	NC	20
Cadmium	ND	ND	NC	20
Calcium	160000	160000	0	20
Chromium	ND	ND	NC	20
Cobalt	ND	ND	NC	20
Copper	ND	ND	NC	20
Iron	15000	15000	0	20
Lead	ND	ND	NC	20
Magnesium	27000	26000	4	20
Manganese	2300	2200	4	20
Nickel	ND	ND	NC	20
Selenium	ND	ND	NC	20
Silver	ND	ND	NC	20
Thallium	ND	ND	NC	20
Vanadium	ND	ND	NC	20
Zinc	35	31	12	20

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Fortified Blank (LFB) Results

Commerce Street Plume - Williston, VT

PARAMETER	LFB AMOUNT SPIKED ug/L	LFB RESULT ug/L	LFB RECOVERY %	QC LIMITS %
Aluminum	500	525	105	85 - 115
Antimony	500	492	98	85 - 115
Arsenic	500	488	98	85 - 115
Barium	500	506	101	85 - 115
Beryllium	200	198	99	85 - 115
Cadmium	250	246	98	85 - 115
Calcium	5000	5320	106	85 - 115
Chromium	500	525	105	85 - 115
Cobalt	500	512	102	85 - 115
Copper	500	518	104	85 - 115
Iron	500	542	108	85 - 115
Lead	500	507	101	85 - 115
Magnesium	5000	5150	103	85 - 115
Manganese	500	510	102	85 - 115
Nickel	500	505	101	85 - 115
Selenium	500	451	90	85 - 115
Silver	100	102	102	85 - 115
Thallium	500	512	102	85 - 115
Vanadium	500	522	104	85 - 115
Zinc	500	517	103	85 - 115

Comments:

PN: 11080075

USEPA NERL Inorganics COC (Lab COPY)

DateShipped: 8/25/2011
 CarrierName: FedEx
 AirbillNo: 875722301395

CHAIN OF CUSTODY RECORD

Site #: 80036.03
 Contact Name: Gail DeRuzzo
 Contact Phone: 978-683-0891

No: 1-083011-092126-0016

Cooler #: 1
 Lab: New England Regional Laboratory
 Lab Phone: 617-918-8340

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	MS/MS D
	VP-4925A	VP-49	EP0471	647	Dissolved Metals/ICP-AES	Ground Water	8/29/2011	1	250 mL Poly	HNO3 pH<2	
	VP-4925A	VP-49	EP0472	648	Total Metals/ICP-AES	Ground Water	8/29/2011	1	250 mL Poly	HNO3 pH<2	

Special Instructions: Please return cooler at your earliest convenience using the included FedEx Airbill, Thank you.

SAMPLES TRANSFERRED FROM
 CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
Shipping	C. R.	8/30/11 FEDEX	[Signature]	8/31/11	10:00						

300



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

October 13, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080068

Project: Commerce Street Plume - Williston, VT

Analysis: Total Recoverable Metals in Water by ICP

EPA Analysts: Michael Dowling, Zachary Bonin

MD 10/13/11 MD for ZB 10/13/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

The sample preparation and analysis SOP's are based on Methods 3010A or 3005A and 6010B as stated in "Test Methods for Evaluating Solid Waste, 3rd ed., Final Update III, 7/92 and 12/96."

The samples were analyzed using a Perkin Elmer 4300 Dual View Inductively Coupled Plasma - Optical Emission Spectrometer.

Date Samples Received by the Laboratory: 08/26/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N. Boudreau 10/19/11
Daniel N. Boudreau
Chemistry Team Leader

Laboratory Qualifiers:

RL	Reporting limit
ND	Not Detected above reporting limit
NA	Not Applicable
NC	Not calculated since analyte concentration is ND
J1	Estimated value due to MS recovery outside acceptance criteria
J2	Estimated value due to LFB result outside acceptance criteria
J3	Estimated value due to RPD result outside acceptance criteria
J4	Estimated value due to LCS result outside acceptance criteria
B	Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
R	No recovery was calculated since the analyte concentration is greater than four times the spike level.

Samples from project numbers 11080045, 11080051, 11080056, 11080063, and 11080068 were batched together. See 11080045 report for the lab reagent blank, and lab fortified blank results, 11080056 report for the sample duplicate results, and the 11080051 report for the matrix spike results.

These samples contained a layer of fine material, and were mixed as well as possible.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: VP-3525A
Date of Collection: 8/25/2011
Date of Digestion: 8/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB21172
Matrix: Water
Final Volume: 50 mL
Digestate Dilution: 1
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	28000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	20	20	
7440-39-3	Barium	130	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	180000	100	
7440-47-3	Chromium	66	20	
7440-48-4	Cobalt	34	20	
7440-50-8	Copper	73	20	
7439-89-6	Iron	90000	40	
7439-92-1	Lead	24	20	
7439-95-4	Magnesium	47000	100	
7439-96-5	Manganese	3900	20	
7440-02-0	Nickel	98	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	62	20	
7440-66-6	Zinc	140	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: VP-3425A
Date of Collection: 8/25/2011
Date of Digestion: 8/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB21173
Matrix: Water
Final Volume: 50 mL
Digestate Dilution: 1
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	12000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	130	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	67000	100	
7440-47-3	Chromium	46	20	
7440-48-4	Cobalt	48	20	
7440-50-8	Copper	34	20	
7439-89-6	Iron	22000	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	33000	100	
7439-96-5	Manganese	1300	20	
7440-02-0	Nickel	100	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	44	20	
7440-66-6	Zinc	73	20	

Comments:



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

October 13, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England RI

Project Number: 11080045

Project: Commerce Street Plume - Williston, VT

Analysis: Total Recoverable Metals in Water by ICP

EPA Analysts: Michael Dowling, Zachary Bonin

MD 10/13/11 MD for ZB 10/13/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

The sample preparation and analysis SOP's are based on Methods 3010A or 3005A and 6010B as stated in "Test Methods for Evaluating Solid Waste, 3rd ed., Final Update III, 7/92 and 12/96."

The samples were analyzed using a Perkin Elmer 4300 Dual View Inductively Coupled Plasma - Optical Emission Spectrometer.

Date Samples Received by the Laboratory: 08/19/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N. Boudreau 10/18/11

Daniel N. Boudreau
Chemistry Team Leader

Laboratory Qualifiers:

- RL** Reporting limit
- ND** Not Detected above reporting limit
- NA** Not Applicable
- NC** Not calculated since analyte concentration is ND
- J1** Estimated value due to MS recovery outside acceptance criteria
- J2** Estimated value due to LFB result outside acceptance criteria
- J3** Estimated value due to RPD result outside acceptance criteria
- J4** Estimated value due to LCS result outside acceptance criteria
- B** Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
- R** No recovery was calculated since the analyte concentration is greater than four times the spike level.

Samples from project numbers 11080045, 11080051, 11080056, 11080063, and 11080068 were batched together. See 11080056 report for the sample duplicate results and the 11080051 report for the matrix spike results.

These samples contained a layer of fine material, and were mixed as well as possible.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: EP0373
Date of Collection: 8/16/2011
Date of Digestion: 8/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB20844
Matrix: GW
Final Volume: 50 mL
Digestate Dilution: 1
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	4000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	26	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	26000	100	
7440-47-3	Chromium	26	20	
7440-48-4	Cobalt	ND	20	
7440-50-8	Copper	ND	20	
7439-89-6	Iron	11000	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	11000	100	
7439-96-5	Manganese	380	20	
7440-02-0	Nickel	63	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	ND	20	
7440-66-6	Zinc	55	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: EP0376
Date of Collection: 8/16/2011
Date of Digestion: 8/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB20846
Matrix: GW
Final Volume: 50 mL
Digestate Dilution: 1
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	8100	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	52	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	93000	100	
7440-47-3	Chromium	67	20	
7440-48-4	Cobalt	ND	20	
7440-50-8	Copper	32	20	
7439-89-6	Iron	23000	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	18000	100	
7439-96-5	Manganese	1100	20	
7440-02-0	Nickel	29	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	ND	20	
7440-66-6	Zinc	99	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID:	EP0378	Lab Sample ID:	AB20848
Date of Collection:	8/17/2011	Matrix:	GW
Date of Digestion:	8/26/2011	Final Volume:	50 mL
Date of Analysis:	10/4/2011	Digestate Dilution:	1, 5
Volume Digested:	50 mL	pH:	<2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	430000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	240	20	
7440-39-3	Barium	780	20	
7440-41-7	Beryllium	ND	8.0	
7440-43-9	Cadmium	27	10	
7440-70-2	Calcium	601000	500	
7440-47-3	Chromium	740	20	
7440-48-4	Cobalt	390	20	
7440-50-8	Copper	1000	20	
7439-89-6	Iron	991000	200	
7439-92-1	Lead	250	20	
7439-95-4	Magnesium	310000	100	
7439-96-5	Manganese	24000	20	
7440-02-0	Nickel	1100	20	
7782-49-2	Selenium	43	20	
7440-22-4	Silver	ND	50	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	700	20	
7440-66-6	Zinc	1900	20	

Comments: Calcium, iron, and silver results are reported from 1:5 dilutions.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: EP0383
Date of Collection: 8/17/2011
Date of Digestion: 8/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB20850
Matrix: GW
Final Volume: 50 mL
Digestate Dilution: 1
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	12000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	46	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	13000	100	
7440-47-3	Chromium	32	20	
7440-48-4	Cobalt	ND	20	
7440-50-8	Copper	44	20	
7439-89-6	Iron	24000	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	6700	100	
7439-96-5	Manganese	870	20	
7440-02-0	Nickel	34	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	35	20	
7440-66-6	Zinc	42	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: EP0386
Date of Collection: 8/18/2011
Date of Digestion: 8/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB20852
Matrix: GW
Final Volume: -50 mL
Digestate Dilution: 1
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	41000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	25	20	
7440-39-3	Barium	190	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	28000	100	
7440-47-3	Chromium	190	20	
7440-48-4	Cobalt	39	20	
7440-50-8	Copper	130	20	
7439-89-6	Iron	86000	40	
7439-92-1	Lead	32	20	
7439-95-4	Magnesium	24000	100	
7439-96-5	Manganese	2000	20	
7440-02-0	Nickel	160	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	93	20	
7440-66-6	Zinc	220	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Reagent Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Digestion:	8/26/2011	Final Volume:	50 mL
Date of Analysis:	10/4/2011	Digestate Dilution:	1
Volume Digested:	50 mL	pH:	<2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	ND	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	ND	100	
7440-47-3	Chromium	ND	20	
7440-48-4	Cobalt	ND	20	
7440-50-8	Copper	ND	20	
7439-89-6	Iron	ND	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	ND	100	
7439-96-5	Manganese	ND	20	
7440-02-0	Nickel	ND	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	ND	20	
7440-66-6	Zinc	ND	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) RECOVERY

Commerce Street Plume - Williston, VT

COMPOUND	SPIKE ADDED ug/L	LFB CONCENTRATION ug/L	LFB RECOVERY %	QC LIMITS (% REC)
Aluminum	500	520	105	85 - 115
Antimony	500	500	99	85 - 115
Arsenic	500	490	98	85 - 115
Barium	500	500	100	85 - 115
Beryllium	200	200	98	85 - 115
Cadmium	250	250	98	85 - 115
Calcium	5000	5200	103	85 - 115
Chromium	500	520	104	85 - 115
Cobalt	500	500	101	85 - 115
Copper	500	510	103	85 - 115
Iron	500	510	103	85 - 115
Lead	500	500	101	85 - 115
Magnesium	5000	5100	101	85 - 115
Manganese	500	510	101	85 - 115
Nickel	500	500	100	85 - 115
Selenium	500	440	89	85 - 115
Silver	100	100	101	85 - 115
Thallium	500	500	101	85 - 115
Vanadium	500	510	103	85 - 115
Zinc	500	490	98	85 - 115

Comments:



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

October 13, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080051

Project: Commerce Street Plume - Williston, VT

Analysis: Total Recoverable Metals in Water by ICP

EPA Analysts: Michael Dowling, Zachary Bonin

MD 10/13/11 MD for ZB 10/13/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

The sample preparation and analysis SOP's are based on Methods 3010A or 3005A and 6010B as stated in "Test Methods for Evaluating Solid Waste, 3rd ed., Final Update III, 7/92 and 12/96."

The samples were analyzed using a Perkin Elmer 4300 Dual View Inductively Coupled Plasma - Optical Emission Spectrometer.

Date Samples Received by the Laboratory: 08/23/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N. Boudreau 10/13/11

Daniel N. Boudreau
Chemistry Team Leader

Laboratory Qualifiers:

RL	Reporting limit
ND	Not Detected above reporting limit
NA	Not Applicable
NC	Not calculated since analyte concentration is ND
J1	Estimated value due to MS recovery outside acceptance criteria
J2	Estimated value due to LFB result outside acceptance criteria
J3	Estimated value due to RPD result outside acceptance criteria
J4	Estimated value due to LCS result outside acceptance criteria
B	Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
R	No recovery was calculated since the analyte concentration is greater than four times the spike level.

Comments:

Samples from project numbers 11080045, 11080051, 11080056, 11080063, and 11080068 were batched together. See the 11080045 report for the laboratory reagent blank results, and the laboratory fortified blank results. See the 11080056 report for the duplicate sample results.

These samples contained a layer of fine material, and were mixed as well as possible.

PE sample EP0399 was not analyzed since the samples were submitted for ICP analysis, not ICP-MS.
PE sample EP0400 was analyzed instead.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: EP0389
Date of Collection: 8/19/2011
Date of Digestion: 9/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB20947
Matrix: GW
Final Volume: 50 mL
Digestate Dilution: 1
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	17000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	72	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	120000	100	
7440-47-3	Chromium	44	20	
7440-48-4	Cobalt	ND	20	
7440-50-8	Copper	40	20	
7439-89-6	Iron	51000	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	29000	100	
7439-96-5	Manganese	2100	20	
7440-02-0	Nickel	52	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	38	20	
7440-66-6	Zinc	78	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: EP0393
Date of Collection: 8/22/2011
Date of Digestion: 9/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB20948
Matrix: GW
Final Volume: 50 mL
Digestate Dilution: 1
pH: <

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	57000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	40	20	
7440-39-3	Barium	210	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	200000	100	
7440-47-3	Chromium	170	20	
7440-48-4	Cobalt	64	20	
7440-50-8	Copper	150	20	
7439-89-6	Iron	180000	40	
7439-92-1	Lead	45	20	
7439-95-4	Magnesium	51000	100	
7439-96-5	Manganese	6400	20	
7440-02-0	Nickel	200	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	120	20	
7440-66-6	Zinc	300	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID:	EP0400	Lab Sample ID:	AB20950
Date of Collection:	8/22/2011	Matrix:	PE Water
Date of Digestion:	8/26/2011	Final Volume:	50 mL
Date of Analysis:	10/4/2011	Digestate Dilution:	1
Volume Digested:	50 mL	pH:	<2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	110	
7440-36-0	Antimony	140	20	
7440-38-2	Arsenic	38	20	
7440-39-3	Barium	630	20	
7440-41-7	Beryllium	22	8	
7440-43-9	Cadmium	25	10	
7440-70-2	Calcium	ND	100	
7440-47-3	Chromium	ND	20	
7440-48-4	Cobalt	180	20	
7440-50-8	Copper	ND	20	
7439-89-6	Iron	350	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	13000	100	
7439-96-5	Manganese	87	20	
7440-02-0	Nickel	ND	20	
7782-49-2	Selenium	79	20	
7440-22-4	Silver	36	10	
7440-28-0	Thallium	32	20	
7440-62-2	Vanadium	ND	20	
7440-66-6	Zinc	120	20	

Comments: This PE sample was prepared by diluting the concentrate 20X. The instructions were for ICP-MS analysis, but the container label indicated ICP.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID:	EP0407	Lab Sample ID:	AB20951
Date of Collection:	8/22/2011	Matrix:	GW
Date of Digestion:	9/26/2011	Final Volume:	50 mL
Date of Analysis:	10/4/2011	Digestate Dilution:	1
Volume Digested:	50 mL	pH:	<2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	61000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	42	20	
7440-39-3	Barium	210	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	190000	100	
7440-47-3	Chromium	170	20	
7440-48-4	Cobalt	63	20	
7440-50-8	Copper	150	20	
7439-89-6	Iron	160000	40	
7439-92-1	Lead	41	20	
7439-95-4	Magnesium	62000	100	
7439-96-5	Manganese	5200	20	
7440-02-0	Nickel	190	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	130	20	
7440-66-6	Zinc	330	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

METALS MATRIX SPIKE (MS) RESULTS

Commerce Street Plume - Williston, VT

Sample ID: AB20948

COMPOUND	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
Aluminum	500	57000	48400	R	75 - 125
Antimony	500	ND	376	75	75 - 125
Arsenic	500	40	530	98	75 - 125
Barium	500	210	695	97	75 - 125
Beryllium	200	ND	200	100	75 - 125
Cadmium	250	ND	239	96	75 - 125
Chromium	500	170	642	94	75 - 125
Cobalt	500	64	533	94	75 - 125
Copper	500	150	663	103	75 - 125
Iron	500	180000	165000	R	75 - 125
Lead	500	45	526	96	75 - 125
Manganese	500	6400	6640	R	75 - 125
Nickel	500	200	644	89	75 - 125
Selenium	500	ND	460	92	75 - 125
Silver	100	ND	102	102	75 - 125
Thallium	500	ND	485	97	75 - 125
Vanadium	500	120	616	99	75 - 125
Zinc	500	300	728	86	75 - 125

PN: 11080051

USEPA NERL Inorganics COC (LAB COPY)

Date Shipped: 8/22/2011
 Carrier Name: FedEx
 Airbill No: 875722301281

CHAIN OF CUSTODY RECORD

Case# EP009S
 Cooler #: 1

No: 1-082211-131358-0005

Lab: New England Regional Laboratory
 Lab Contact: Dan Boudreau
 Lab Phone: 617-918-8340

not run

TM
TM
TM
TM
NOT USE
TM

Inorganic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Organic Sample #	For Lab Use Only
EP0389	Ground Water/ Josh Stewart	Grab	ICP-OES_DM(21), ICP-OES_TM(21)	90 (HNO3 pH<2), 91 (HNO3 pH<2) (2)	VP-3930A	08/19/2011		
EP0393	Ground Water/ Josh Stewart	Grab	ICP-OES_DM(21), ICP-OES_TM(21)	108 (HNO3 pH<2), 109 (HNO3 pH<2) (2)	VP-3625A	08/22/2011 08:55		
EP0399	PE Water/ Corey Rousseau		PE_ICP/MS(21)	132 (4 C) (1)	MS03474	08/22/2011 08:00		
EP0400	PE Water/ Corey Rousseau		PE_ICP/AES(21)	133 (4 C) (1)	IS1247	08/22/2011 08:05		
EP0401	PE Water/ Corey Rousseau		PE Hg(Aq)(21)	134 (4 C) (1)	HG5947	08/22/2011 08:10		
EP0407	Ground Water/ Josh Stewart	Grab	ICP-OES_DM(21), ICP-OES_TM(21)	166 (HNO3 pH<2), 167 (HNO3 pH<2) (2)	VP-5430A	08/22/2011 13:30		
EP0388			DM			8/19/11		
EP0392			DM			8/22/11		
EP0406			DM			8/22/11		

(JMS)

Special Instructions:	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #

Analysis Key: ICP-OES_DM=Dissolved Metals/ICP-OES, ICP-OES_TM=Total Metals/ICP-OES, PE_ICP/MS=PE L/M ICP-MS Metals Aqueous QATS, PE_ICP/AES=PE L/M ICP-AES Metals Aqueous QATS, PE_Hg(Aq)=PE L/M Mercury Aqueous

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
GW Samples	<i>J. Franco</i>	8/22/11	<i>Free</i>	8/23/11	10:00						

cooler 40C



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

October 17, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080063

Project: Commerce Street Plume - Williston, VT

Analysis: Total Recoverable Metals in Water by ICP

Analysts: Mike Dowling, Zach Bonin

MD 10/17/11 MD for ZB 10/17/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

The sample preparation and analysis SOP's are based on Methods 3010A or 3005A and 6010B as stated in "Test Methods for Evaluating Solid Waste, 3rd ed., Final Update III, 7/92 and 12/96."

The samples were analyzed using a Perkin Elmer 4300 Dual View Inductively Coupled Plasma - Optical Emission Spectrometer.

Date Samples Received by the Laboratory: 08/25/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N. Boudreau 10/19/11

Daniel N. Boudreau
Chemistry Team Leader

Laboratory Qualifiers:

- RL** Reporting limit
- ND** Not Detected above reporting limit
- NA** Not Applicable
- NC** Not calculated since analyte concentration is ND
- J1** Estimated value due to MS recovery outside acceptance criteria
- J2** Estimated value due to LFB result outside acceptance criteria
- J3** Estimated value due to RPD result outside acceptance criteria
- J4** Estimated value due to LCS result outside acceptance criteria
- B** Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
- R** No recovery was calculated since the analyte concentration is greater than four times the spike level.

Comments:

Samples from project numbers 11080045, 11080051, 11080056, 11080063, and 11080068 were batched together. See 11080045 report for the lab reagent blank, and lab fortified blank results, 11080056 report for the sample duplicate results, and the 11080051 report for the matrix spike results.

These samples contained a layer of fine material, and were mixed as well as possible.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: VP-5325A
Date of Collection: 8/24/2011
Date of Digestion: 8/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB21093
Matrix: Water
Final Volume: 50 mL
Digestate Dilution: 1
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	4600	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	26	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	10000	100	
7440-47-3	Chromium	29	20	
7440-48-4	Cobalt	ND	20	
7440-50-8	Copper	ND	20	
7439-89-6	Iron	10000	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	6000	100	
7439-96-5	Manganese	670	20	
7440-02-0	Nickel	26	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	ND	20	
7440-66-6	Zinc	23	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: VP-4025A
Date of Collection: 8/24/2011
Date of Digestion: 8/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB21094
Matrix: Water
Final Volume: 50 mL
Digestate Dilution: 1
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	63000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	50	20	
7440-39-3	Barium	230	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	260000	100	
7440-47-3	Chromium	130	20	
7440-48-4	Cobalt	72	20	
7440-50-8	Copper	160	20	
7439-89-6	Iron	150000	40	
7439-92-1	Lead	51	20	
7439-95-4	Magnesium	64000	100	
7439-96-5	Manganese	5800	20	
7440-02-0	Nickel	210	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	140	20	
7440-66-6	Zinc	320	20	

Comments:

PN 11080063

USEPA NERL Inorganics COC (LAB COPY)

Date Shipped: 8/24/2011
 Carrier Name: FedEx
 Airbill No: 875722301340

CHAIN OF CUSTODY RECORD

Site #: 80036.03
 Contact Name: Gail DeRuzzo
 Contact Phone: 978-683-0891

No: 1-082411-095736-0010

Cooler #: 1
 Lab: New England Regional Laboratory
 Lab Phone: 617-918-8340

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	MS/MS D
	VP-5325A	VP-53	EP0430	406	Dissolved Metals/ICP-AES	Ground Water	8/24/2011	1	250 mL Poly	HNO3 pH<2	
	VP-5325A	VP-53	EP0431	407	Total Metals/ICP-AES	Ground Water	8/24/2011	1	250 mL Poly	HNO3 pH<2	
	VP-4025A	VP-40	EP0438	320	Dissolved Metals/ICP-AES	Ground Water	8/24/2011	1	250 mL Poly	HNO3 pH<2	
	VP-4025A	VP-40	EP0439	321	Total Metals/ICP-AES	Ground Water	8/24/2011	1	250 mL Poly	HNO3 pH<2	

Special Instructions: Please return cooler at your earliest convenience using the included FedEx Airbill, Thank you.

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
Shipping	<i>[Signature]</i>	8/24/11	<i>[Signature]</i>	8/25/11	10:50						

30C



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

October 13, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080051

Project: Commerce Street Plume - Williston, VT

Analysis: Total Recoverable Metals in Water by ICP

EPA Analysts: Michael Dowling, Zachary Bonin

MD 10/13/11 MD for ZB 10/13/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

The sample preparation and analysis SOP's are based on Methods 3010A or 3005A and 6010B as stated in "Test Methods for Evaluating Solid Waste, 3rd ed., Final Update III, 7/92 and 12/96."

The samples were analyzed using a Perkin Elmer 4300 Dual View Inductively Coupled Plasma - Optical Emission Spectrometer.

Date Samples Received by the Laboratory: 08/23/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N. Boudreau 10/13/11

Daniel N. Boudreau
Chemistry Team Leader

Laboratory Qualifiers:

RL	Reporting limit
ND	Not Detected above reporting limit
NA	Not Applicable
NC	Not calculated since analyte concentration is ND
J1	Estimated value due to MS recovery outside acceptance criteria
J2	Estimated value due to LFB result outside acceptance criteria
J3	Estimated value due to RPD result outside acceptance criteria
J4	Estimated value due to LCS result outside acceptance criteria
B	Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
R	No recovery was calculated since the analyte concentration is greater than four times the spike level.

Comments:

Samples from project numbers 11080045, 11080051, 11080056, 11080063, and 11080068 were batched together. See the 11080045 report for the laboratory reagent blank results, and the laboratory fortified blank results. See the 11080056 report for the duplicate sample results.

These samples contained a layer of fine material, and were mixed as well as possible.

PE sample EP0399 was not analyzed since the samples were submitted for ICP analysis, not ICP-MS.
PE sample EP0400 was analyzed instead.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: EP0389
Date of Collection: 8/19/2011
Date of Digestion: 9/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB20947
Matrix: GW
Final Volume: 50 mL
Digestate Dilution: 1
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	17000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	72	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	120000	100	
7440-47-3	Chromium	44	20	
7440-48-4	Cobalt	ND	20	
7440-50-8	Copper	40	20	
7439-89-6	Iron	51000	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	29000	100	
7439-96-5	Manganese	2100	20	
7440-02-0	Nickel	52	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	38	20	
7440-66-6	Zinc	78	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID:	EP0393	Lab Sample ID:	AB20948
Date of Collection:	8/22/2011	Matrix:	GW
Date of Digestion:	9/26/2011	Final Volume:	50 mL
Date of Analysis:	10/4/2011	Digestate Dilution:	1
Volume Digested:	50 mL	pH:	<

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	57000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	40	20	
7440-39-3	Barium	210	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	200000	100	
7440-47-3	Chromium	170	20	
7440-48-4	Cobalt	64	20	
7440-50-8	Copper	150	20	
7439-89-6	Iron	180000	40	
7439-92-1	Lead	45	20	
7439-95-4	Magnesium	51000	100	
7439-96-5	Manganese	6400	20	
7440-02-0	Nickel	200	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	120	20	
7440-66-6	Zinc	300	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: EP0400
Date of Collection: 8/22/2011
Date of Digestion: 8/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB20950
Matrix: PE Water
Final Volume: 50 mL
Digestate Dilution: 1
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	110	
7440-36-0	Antimony	140	20	
7440-38-2	Arsenic	38	20	
7440-39-3	Barium	630	20	
7440-41-7	Beryllium	22	8	
7440-43-9	Cadmium	25	10	
7440-70-2	Calcium	ND	100	
7440-47-3	Chromium	ND	20	
7440-48-4	Cobalt	180	20	
7440-50-8	Copper	ND	20	
7439-89-6	Iron	350	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	13000	100	
7439-96-5	Manganese	87	20	
7440-02-0	Nickel	ND	20	
7782-49-2	Selenium	79	20	
7440-22-4	Silver	36	10	
7440-28-0	Thallium	32	20	
7440-62-2	Vanadium	ND	20	
7440-66-6	Zinc	120	20	

Comments: This PE sample was prepared by diluting the concentrate 20X. The instructions were for ICP-MS analysis, but the container label indicated ICP.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Total Recoverable Metals in Water by ICP

Client Sample ID: EP0407
Date of Collection: 8/22/2011
Date of Digestion: 9/26/2011
Date of Analysis: 10/4/2011
Volume Digested: 50 mL

Lab Sample ID: AB20951
Matrix: GW
Final Volume: 50 mL
Digestate Dilution: 1
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	61000	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	42	20	
7440-39-3	Barium	210	20	
7440-41-7	Beryllium	ND	8	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	190000	100	
7440-47-3	Chromium	170	20	
7440-48-4	Cobalt	63	20	
7440-50-8	Copper	150	20	
7439-89-6	Iron	160000	40	
7439-92-1	Lead	41	20	
7439-95-4	Magnesium	62000	100	
7439-96-5	Manganese	5200	20	
7440-02-0	Nickel	190	20	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	130	20	
7440-66-6	Zinc	330	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

METALS MATRIX SPIKE (MS) RESULTS

Commerce Street Plume - Williston, VT

Sample ID: AB20948

COMPOUND	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
Aluminum	500	57000	48400	R	75 - 125
Antimony	500	ND	376	75	75 - 125
Arsenic	500	40	530	98	75 - 125
Barium	500	210	695	97	75 - 125
Beryllium	200	ND	200	100	75 - 125
Cadmium	250	ND	239	96	75 - 125
Chromium	500	170	642	94	75 - 125
Cobalt	500	64	533	94	75 - 125
Copper	500	150	663	103	75 - 125
Iron	500	180000	165000	R	75 - 125
Lead	500	45	526	96	75 - 125
Manganese	500	6400	6640	R	75 - 125
Nickel	500	200	644	89	75 - 125
Selenium	500	ND	460	92	75 - 125
Silver	100	ND	102	102	75 - 125
Thallium	500	ND	485	97	75 - 125
Vanadium	500	120	616	99	75 - 125
Zinc	500	300	728	86	75 - 125

PN: 11080051

USEPA NERL Inorganics COC (LAB COPY)

Date Shipped: 8/22/2011
 Carrier Name: FedEx
 Airbill No: 875722301281

CHAIN OF CUSTODY RECORD

Case# EP009S
 Cooler #: 1

No: 1-082211-131358-0005

Lab: New England Regional Laboratory
 Lab Contact: Dan Boudreau
 Lab Phone: 617-918-8340

not run

TM
TM
TM
TM
NOT USE
TM

Inorganic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Organic Sample #	For Lab Use Only
EP0389	Ground Water/ Josh Stewart	Grab	ICP-OES_DM(21), ICP-OES_TM(21)	90 (HNO3 pH<2), 91 (HNO3 pH<2) (2)	VP-3930A	08/19/2011		
EP0393	Ground Water/ Josh Stewart	Grab	ICP-OES_DM(21), ICP-OES_TM(21)	108 (HNO3 pH<2), 109 (HNO3 pH<2) (2)	VP-3625A	08/22/2011 08:55		
EP0399	PE Water/ Corey Rousseau		PE_ICP/MS(21)	132 (4 C) (1)	MS03474	08/22/2011 08:00		
EP0400	PE Water/ Corey Rousseau		PE_ICP/AES(21)	133 (4 C) (1)	IS1247	08/22/2011 08:05		
EP0401	PE Water/ Corey Rousseau		PE Hg(Aq)(21)	134 (4 C) (1)	HG5947	08/22/2011 08:10		
EP0407	Ground Water/ Josh Stewart	Grab	ICP-OES_DM(21), ICP-OES_TM(21)	166 (HNO3 pH<2), 167 (HNO3 pH<2) (2)	VP-5430A	08/22/2011 13:30		
EP0388			DM			8/19/11		
EP0392			DM			8/22/11		
EP0406			DM			8/22/11		

(JMS)

Special Instructions:	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #

Analysis Key: ICP-OES_DM=Dissolved Metals/ICP-OES, ICP-OES_TM=Total Metals/ICP-OES, PE_ICP/MS=PE L/M ICP-MS Metals Aqueous QATS, PE_ICP/AES=PE L/M ICP-AES Metals Aqueous QATS, PE_Hg(Aq)=PE L/M Mercury Aqueous

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
GW Samples	<i>J. Franco</i>	8/22/11	<i>Free</i>	8/23/11	10:00						

cooler 40C



Laboratory Report

August 25, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080056
Project: Commerce Street Plume - Williston, VT
Analysis: VOC Analysis of Water by Headspace
Analyst: Dan Curran *DC 8/25/11*

Analytical Procedure:

Sample preparation and analysis was done following the EPA Region I SOP, EIA-VOCSCREEN0.

Aqueous samples were collected in 40 mL vials. The samples were analyzed using a Shimadzu GC 2014 gas chromatograph equipped with a 30 meter, 0.53 mm id. RTX-624 column and detected using electron capture and photoionization detectors. Concentrations of volatile organics were calculated using the external standard technique.

Date Samples Received by the Laboratory: 8/24/11

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8340.

Sincerely,

Daniel N. Boudreau
Daniel N. Boudreau
Chemistry Team Leader

8/25/11

VOC Analysis of Water by Headspace

US ENVIRONMENTAL PROTECTION AGENCY NEW ENGLAND LABORATORY Commerce Street Plume - Williston, VT					
Client Sample ID	EP-0411	EP-0412	EP-0413	EP-0414	EP-0416
Lab Sample ID	AB20997	AB20998	AB20999	AB21000	AB21001
Date of Collection	8/23/2011	8/23/2011	8/23/2011	8/23/2011	8/23/2011
Date of Extraction	8/24/2011	8/24/2011	8/24/2011	8/24/2011	8/24/2011
Date of Analysis	8/24/2011	8/24/2011	8/24/2011	8/24/2011	8/24/2011
Matrix	GW	GW	GW	GW	GW
Compound	Conc. (RL)				
1,1,1-Trichloroethane	ND (1.0)				
1,1-Dichloroethylene	ND (1.0)				
Benzene	ND (1.0)				
Chlorobenzene	ND (1.0)				
cis-1,2-Dichloroethylene	140 (0.50)	34 (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Ethylbenzene	ND (1.0)				
m/p-Xylene	ND (1.5)				
o-Xylene	ND (1.0)				
Tetrachloroethylene	ND (200)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Toluene	ND (0.50)				
Trans-1,2-Dichloroethylene	ND (1.0)				
Trichloroethylene	6100 (1.0)	1700 (200)	3.2 (1.0)	2.2 (1.0)	1.4 (1.0)

**US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY
Commerce Street Plume - Williston, VT**

EP-0418 AB21002 8/23/2011 8/25/2011 8/25/2011 GW Conc. (RL)	EP-0420 AB21003 8/23/2011 8/25/2011 8/25/2011 GW Conc. (RL)	EP-0421 AB21004 8/23/2011 8/25/2011 8/25/2011 GW Conc. (RL)	EP-0422 AB21005 8/23/2011 8/25/2011 8/25/2011 GW Conc. (RL)	EP-0423 AB21006 8/23/2011 8/25/2011 8/25/2011 GW Conc. (RL)
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1,1,1-Trichloroethane	ND (1.0)				
1,1-Dichloroethylene	ND (1.0)				
Benzene	ND (1.0)				
Chlorobenzene	ND (1.0)				
cis-1,2-Dichloroethylene	ND (0.50)				
Ethylbenzene	ND (1.0)				
m/p-Xylene	ND (1.5)				
o-Xylene	ND (1.0)				
Tetrachloroethylene	ND (1.0)				
Toluene	ND (0.50)				
Trans-1,2-Dichloroethylene	ND (1.0)				
Trichloroethylene	ND (1.0)				

**US ENVIRONMENTAL
PROTECTION AGENCY
NEW ENGLAND LABORATORY**

EP-0425 AB21007 8/23/2011 8/25/2011 8/25/2011 GW Conc. (RL)	EP-0426 AB21008 8/23/2011 8/25/2011 8/25/2011 GW Conc. (RL)
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1,1,1-Trichloroethane	ND (1.0)	ND (1.0)
1,1-Dichloroethylene	ND (1.0)	ND (1.0)
Benzene	ND (1.0)	ND (1.0)
Chlorobenzene	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethylene	ND (0.50)	ND (0.50)
Ethylbenzene	ND (1.0)	ND (1.0)
m/p-Xylene	ND (1.5)	ND (1.5)
o-Xylene	ND (1.0)	ND (1.0)
Tetrachloroethylene	ND (1.0)	ND (1.0)
Toluene	ND (0.50)	ND (0.50)
Trans-1,2-Dichloroethylene	ND (1.0)	ND (1.0)
Trichloroethylene	ND (1.0)	ND (1.0)

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Sample ID: AB21007

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
1,1,1-Trichloroethane	ND	ND	ND	50
1,1-Dichloroethylene	ND	ND	ND	50
Benzene	ND	ND	ND	50
Chlorobenzene	ND	ND	ND	50
Ethylbenzene	ND	ND	ND	50
Tetrachloroethylene	ND	ND	ND	50
Toluene	ND	ND	ND	50
Trans-1,2-Dichloroethylene	ND	ND	ND	50
Trichloroethylene	ND	ND	ND	50
cis-1,2-Dichloroethylene	ND	ND	ND	50
m/p-Xylene	ND	ND	ND	50
o-Xylene	ND	ND	ND	50



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

August 26, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080063
Project: Commerce Street Plume - Williston, VT
Analysis: VOC Analysis of Water by Headspace
Analyst: Dan Curran

Analytical Procedure:

Sample preparation and analysis was done following the EPA Region I SOP, EIA-VOCSCREEN0.

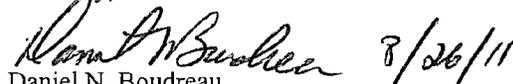
Aqueous samples were collected in 40 mL vials. The samples were analyzed using a Shimadzu GC 2014 gas chromatograph equipped with a 30 meter, 0.53 mm id. RTX-624 column and detected using electron capture and photoionization detectors. Concentrations of volatile organics were calculated using the external standard technique.

Date Samples Received by the Laboratory: 8/25/11

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8340.

Sincerely,


Daniel N. Boudreau
Chemistry Team Leader

VOC Analysis of Water by Headspace

US ENVIRONMENTAL PROTECTION AGENCY NEW ENGLAND LABORATORY Commerce Street Plume - Williston, VT					
Client Sample ID	EP0427	EP0428	EP0429	EP0430	EP0432
Lab Sample ID	AB21081	AB21082	AB21083	AB21084	AB21085
Date of Collection	8/25/2011	8/25/2011	8/25/2011	8/25/2011	8/25/2011
Date of Extraction	8/25/2011	8/25/2011	8/25/2011	8/25/2011	8/25/2011
Date of Analysis	8/25/2011	8/25/2011	8/25/2011	8/25/2011	8/25/2011
Matrix	GW	GW	GW	GW	GW
Compound	Conc. (RL)				
1,1,1-Trichloroethane	ND (1.0)				
1,1-Dichloroethylene	ND (1.0)				
Benzene	ND (1.0)				
Chlorobenzene	ND (1.0)				
cis-1,2-Dichloroethylene	ND (0.50)				
Ethylbenzene	ND (1.0)				
m/p-Xylene	ND (1.5)				
o-Xylene	ND (1.0)				
Tetrachloroethylene	ND (1.0)				
Toluene	ND (0.50)				
Trans-1,2-Dichloroethylene	ND (1.0)				
Trichloroethylene	ND (1.0)				

**US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY
Commerce Street Plume - Williston, VT**

EP0433 AB21086 8/25/2011 8/25/2011 8/25/2011 GW Conc. (RL)	EP0434 AB21087 8/25/2011 8/25/2011 8/25/2011 GW Conc. (RL)	EP0435 AB21088 8/25/2011 8/25/2011 8/25/2011 GW Conc. (RL)	EP0436 AB21089 8/25/2011 8/25/2011 8/25/2011 GW Conc. (RL)	EP0437 AB21090 8/25/2011 8/25/2011 8/25/2011 GW Conc. (RL)
--	--	--	--	--

1,1,1-Trichloroethane	ND (1.0)				
1,1-Dichloroethylene	ND (1.0)				
Benzene	ND (1.0)				
Chlorobenzene	ND (1.0)				
cis-1,2-Dichloroethylene	ND (0.50)				
Ethylbenzene	ND (1.0)				
m/p-Xylene	ND (1.5)				
o-Xylene	ND (1.0)				
Tetrachloroethylene	ND (1.0)				
Toluene	ND (0.50)				
Trans-1,2-Dichloroethylene	ND (1.0)				
Trichloroethylene	ND (1.0)				

**US ENVIRONMENTAL
PROTECTION AGENCY
NEW ENGLAND LABORATORY**

EP0438 AB21091 8/25/2011 8/25/2011 8/25/2011 GW Conc. (RL)	EP0440 AB21092 8/25/2011 8/25/2011 8/25/2011 GW Conc. (RL)
--	--

1,1,1-Trichloroethane	ND (1.0)	ND (1.0)
1,1-Dichloroethylene	ND (1.0)	ND (1.0)
Benzene	ND (1.0)	ND (1.0)
Chlorobenzene	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethylene	ND (0.50)	ND (0.50)
Ethylbenzene	ND (1.0)	ND (1.0)
m/p-Xylene	ND (1.5)	ND (1.5)
o-Xylene	ND (1.0)	ND (1.0)
Tetrachloroethylene	ND (1.0)	ND (1.0)
Toluene	ND (0.50)	ND (0.50)
Trans-1,2-Dichloroethylene	ND (1.0)	ND (1.0)
Trichloroethylene	70 (1.0)	100 (1.0)

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Sample ID: AB21089

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
1,1,1-Trichloroethane	ND	ND	ND	50
1,1-Dichloroethylene	ND	ND	ND	50
Benzene	ND	ND	ND	50
Chlorobenzene	ND	ND	ND	50
Ethylbenzene	ND	ND	ND	50
Tetrachloroethylene	ND	ND	ND	50
Toluene	ND	ND	ND	50
Trans-1,2-Dichloroethylene	ND	ND	ND	50
Trichloroethylene	ND	ND	ND	50
cis-1,2-Dichloroethylene	ND	ND	ND	50
m/p-Xylene	ND	ND	ND	50
o-Xylene	ND	ND	ND	50



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

August 29, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080068
Project: Commerce Street Plume - Williston, VT
Analysis: VOC Analysis of Water by Headspace
Analyst: Dan Curran *D- 8/24/11*

Analytical Procedure:

Sample preparation and analysis was done following the EPA Region I SOP, EIA-VOCSCREEN0.

Aqueous samples were collected in 40 mL vials. The samples were analyzed using a Shimadzu GC 2014 gas chromatograph equipped with a 30 meter, 0.53 mm id. RTX-624 column and detected using electron capture and photoionization detectors. Concentrations of volatile organics were calculated using the external standard technique.

Date Samples Received by the Laboratory: 8/26/11

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8340.

Sincerely,

Daniel N. Boudreau 8/30/11
Daniel N. Boudreau
Chemistry Team Leader

VOC Analysis of Water by Headspace

US ENVIRONMENTAL PROTECTION AGENCY NEW ENGLAND LABORATORY Commerce Street Plume - Williston, VT					
Client Sample ID	EP-0441	EP-0442	EP-0443	EP-0444	EP-0446
Lab Sample ID	AB21157	AB21158	AB21159	AB21160	AB21161
Date of Collection	8/25/2011	8/25/2011	8/25/2011	8/25/2011	8/25/2011
Date of Extraction	8/29/2011	8/29/2011	8/29/2011	8/29/2011	8/29/2011
Date of Analysis	8/29/2011	8/29/2011	8/29/2011	8/29/2011	8/29/2011
Matrix	GW	GW	GW	GW	GW
Compound	Conc. (RL)				
1,1,1-Trichloroethane	ND (1.0)				
1,1-Dichloroethylene	ND (1.0)				
Benzene	ND (1.0)				
Chlorobenzene	ND (1.0)				
cis-1,2-Dichloroethylene	ND (0.50)				
Ethylbenzene	ND (1.0)				
m/p-Xylene	ND (1.5)				
o-Xylene	ND (1.0)				
Tetrachloroethylene	ND (1.0)				
Toluene	ND (0.50)				
Trans-1,2-Dichloroethylene	ND (1.0)				
Trichloroethylene	ND (1.0)				

**US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY
Commerce Street Plume - Williston, VT**

EP-0447 AB21162 8/25/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP-0448 AB21163 8/25/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP-0449 AB21164 8/25/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP-0450 AB21165 8/25/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP-0451 AB21166 8/25/2011 8/29/2011 8/29/2011 GW Conc. (RL)
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1,1,1-Trichloroethane	ND (1.0)				
1,1-Dichloroethylene	ND (1.0)	ND (1.0)	6.2 (1.0)	26 (1.0)	ND (1.0)
Benzene	ND (1.0)	ND (1.0)	ND (1.0)	13 (1.0)	ND (1.0)
Chlorobenzene	ND (1.0)	ND (1.0)	47 (1.0)	52 (1.0)	ND (1.0)
cis-1,2-Dichloroethylene	ND (0.50)	ND (0.50)	24 (0.50)	27 (0.50)	ND (0.50)
Ethylbenzene	ND (1.0)	ND (1.0)	24 (1.0)	32 (1.0)	ND (1.0)
m/p-Xylene	ND (1.5)				
o-Xylene	ND (1.0)				
Tetrachloroethylene	ND (1.0)	ND (1.0)	15 (1.0)	19 (1.0)	ND (1.0)
Toluene	ND (0.50)	ND (0.50)	23 (0.50)	26 (0.50)	ND (0.50)
Trans-1,2-Dichloroethylene	ND (1.0)				
Trichloroethylene	ND (1.0)	ND (1.0)	14 (1.0)	16 (1.0)	ND (1.0)

**US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY
Commerce Street Plume - Williston, VT**

EP-0452 AB21167 8/25/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP-0453 AB21168 8/25/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP-0455 AB21169 8/25/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP-0456 AB21170 8/25/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP-0457 AB21171 8/25/2011 8/29/2011 8/29/2011 GW Conc. (RL)
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1,1,1-Trichloroethane	ND (1.0)				
1,1-Dichloroethylene	ND (1.0)				
Benzene	ND (1.0)				
Chlorobenzene	ND (1.0)				
cis-1,2-Dichloroethylene	ND (0.50)				
Ethylbenzene	ND (1.0)				
m/p-Xylene	ND (1.5)				
o-Xylene	ND (1.0)				
Tetrachloroethylene	ND (1.0)				
Toluene	ND (0.50)				
Trans-1,2-Dichloroethylene	ND (1.0)				
Trichloroethylene	ND (1.0)				

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Sample ID: AB21171

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
1,1,1-Trichloroethane	ND	ND	ND	50
1,1-Dichloroethylene	ND	ND	ND	50
Benzene	ND	ND	ND	50
Chlorobenzene	ND	ND	ND	50
Ethylbenzene	ND	ND	ND	50
Tetrachloroethylene	ND	ND	ND	50
Toluene	ND	ND	ND	50
Trans-1,2-Dichloroethylene	ND	ND	ND	50
Trichloroethylene	ND	ND	ND	50
cis-1,2-Dichloroethylene	ND	ND	ND	50
m/p-Xylene	ND	ND	ND	50
o-Xylene	ND	ND	ND	50



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

August 30, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080072
Project: Commerce Street Plume - Williston, VT
Analysis: VOC Analysis of Water by Headspace
Analyst: Dan Curran

Analytical Procedure:

Sample preparation and analysis was done following the EPA Region I SOP, EIA-VOCSCREEN0.

Aqueous samples were collected in 40 mL vials. The samples were analyzed using a Shimadzu GC 2014 gas chromatograph equipped with a 30 meter, 0.53 mm id. RTX-624 column and detected using electron capture and photoionization detectors. Concentrations of volatile organics were calculated using the external standard technique.

Date Samples Received by the Laboratory: 8/29/11

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

If you have any questions please call me at 617-918-8340.

Sincerely,


Daniel N. Boudreau 8/30/11
Chemistry Team Leader

VOC Analysis of Water by Headspace

US ENVIRONMENTAL PROTECTION AGENCY NEW ENGLAND LABORATORY Commerce Street Plume - Williston, VT					
Client Sample ID	EP0457	EP0459	EP0460	EP0461	EP0462
Lab Sample ID	AB21205	AB21206	AB21207	AB21208	AB21209
Date of Collection	8/26/2011	8/26/2011	8/26/2011	8/26/2011	8/26/2011
Date of Extraction	8/29/2011	8/29/2011	8/29/2011	8/29/2011	8/29/2011
Date of Analysis	8/29/2011	8/29/2011	8/29/2011	8/29/2011	8/29/2011
Matrix	GW	GW	GW	GW	GW
Compound	Conc. (RL)				
1,1,1-Trichloroethane	ND (1.0)				
1,1-Dichloroethylene	12 (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Benzene	ND (1.0)				
Chlorobenzene	ND (1.0)				
cis-1,2-Dichloroethylene	ND (0.50)				
Ethylbenzene	ND (1.0)				
m/p-Xylene	32 (1.5)	ND (1.5)	ND (1.5)	ND (1.5)	ND (1.5)
o-Xylene	34 (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethylene	ND (1.0)				
Toluene	36 (0.50)	ND (0.50)	ND (0.50)	ND (0.50)	ND (0.50)
Trans-1,2-Dichloroethylene	ND (1.0)				
Trichloroethylene	ND (1.0)				

**US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY
Commerce Street Plume - Williston, VT**

EP0468 AB21215 8/26/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP0469 AB21216 8/26/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP0470 AB21217 8/26/2011 8/30/2011 8/30/2011 GW Conc. (RL)
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1,1,1-Trichloroethane	ND (1.0)	ND (1.0)	ND (1.0)
1,1-Dichloroethylene	ND (1.0)	ND (1.0)	ND (1.0)
Benzene	ND (1.0)	ND (1.0)	ND (1.0)
Chlorobenzene	ND (1.0)	ND (1.0)	ND (1.0)
cis-1,2-Dichloroethylene	2.4 (0.50)	4.8 (0.50)	ND (0.50)
Ethylbenzene	ND (1.0)	ND (1.0)	ND (1.0)
m/p-Xylene	ND (1.5)	ND (1.5)	ND (1.5)
o-Xylene	ND (1.0)	ND (1.0)	ND (1.0)
Tetrachloroethylene	ND (1.0)	ND (1.0)	1.4 (1.0)
Toluene	ND (0.50)	ND (0.50)	ND (0.50)
Trans-1,2-Dichloroethylene	ND (1.0)	ND (1.0)	ND (1.0)
Trichloroethylene	130 (1.0)	18 (1.0)	ND (1.0)

**US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY
Commerce Street Plume - Williston, VT**

	EP0463 AB21210 8/26/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP0464 AB21211 8/26/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP0465 AB21212 8/26/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP0466 AB21213 8/26/2011 8/29/2011 8/29/2011 GW Conc. (RL)	EP0467 AB21214 8/26/2011 8/29/2011 8/29/2011 GW Conc. (RL)
1,1,1-Trichloroethane	ND (1.0)				
1,1-Dichloroethylene	ND (1.0)				
Benzene	ND (1.0)				
Chlorobenzene	ND (1.0)				
cis-1,2-Dichloroethylene	ND (0.50)	ND (0.50)	6.3 (0.50)	5.7 (0.50)	2.9 (0.50)
Ethylbenzene	ND (1.0)				
m/p-Xylene	ND (1.5)				
o-Xylene	ND (1.0)				
Tetrachloroethylene	4.1 (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Toluene	ND (0.50)				
Trans-1,2-Dichloroethylene	ND (1.0)				
Trichloroethylene	2.7 (1.0)	ND (1.0)	950 (1.0)	790 (1.0)	400 (1.0)

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Sample ID: AB21216

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
1,1,1-Trichloroethane	ND	ND	ND	50
1,1-Dichloroethylene	ND	ND	ND	50
Benzene	ND	ND	ND	50
Chlorobenzene	ND	ND	ND	50
Ethylbenzene	ND	ND	ND	50
Tetrachloroethylene	ND	ND	ND	50
Toluene	ND	ND	ND	50
Trans-1,2-Dichloroethylene	ND	ND	ND	50
Trichloroethylene	18	13	32	50
cis-1,2-Dichloroethylene	4.8	ND	ND	50
m/p-Xylene	ND	ND	ND	50
o-Xylene	ND	ND	ND	50



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

September 28, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080045

Project: Commerce Street Plume - Williston, VT

Analysis: Dissolved Metals in Water by ICP

Analysts: Mike Dowling, Zach Bonin

ND 9/30/11 ND for ZB 9/30/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

Samples were analyzed using a Perkin Elmer Optima4300 Dual View Inductively Coupled Plasma instrument. The SOP's are based on " Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods, SW-846, 3rd ed., Rev. 2, Final Update III, Methods 3005A and 6010B," respectively

Date Samples Received by the Laboratory: 08/19/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N. Boudreau 10/5/11

Daniel N. Boudreau
Chemistry Team Leader

Laboratory Qualifiers:

- RL** Reporting limit
- ND** Not Detected above reporting limit
- NA** Not Applicable
- NC** Not calculated since analyte concentration is ND
- J1** Estimated value due to MS recovery outside acceptance criteria
- J2** Estimated value due to LFB result outside acceptance criteria
- J3** Estimated value due to RPD result outside acceptance criteria
- J4** Estimated value due to LCS result outside acceptance criteria
- B** Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
- R** No recovery was calculated since the analyte concentration is greater than four times the spike level.

Comments:

Commerce dissolved metals projects 11080045, 51, 56, 63, and 68 were batched together. See project 11080045 report for the lab reagent blank and lab fortified blank results. See project 11080056 report for the lab duplicate results, and 11080063 report for the matrix spike results.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID:	EP0372	Lab Sample ID:	AB20843
Date of Collection:	8/16/2011	Matrix:	Water
Date of Preparation:	8/26/2011	Final Volume:	44.8 mL
Date of Analysis:	9/27/2011	Sample Dilution:	1.12
Volume Prepared:	40 mL	pH:	<2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	ND	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	23000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	2600	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	8800	110	
7439-96-5	Manganese	220	22	
7440-02-0	Nickel	49	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	24	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID: EP0375
Date of Collection: 8/16/2011
Date of Preparation: 8/26/2011
Date of Analysis: 9/27/2011
Volume Prepared: 40 mL

Lab Sample ID: AB20845
Matrix: Water
Final Volume: 44.8 mL
Sample Dilution: 1.12
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	ND	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	81000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	2500	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	14000	110	
7439-96-5	Manganese	700	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID:	EP0377	Lab Sample ID:	AB20847
Date of Collection:	8/17/2011	Matrix:	Water
Date of Preparation:	8/26/2011	Final Volume:	44.8 mL
Date of Analysis:	9/27/2011	Sample Dilution:	1.12
Volume Prepared:	40 mL	pH:	<2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	ND	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	24000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	320	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	4100	110	
7439-96-5	Manganese	140	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID:	EP0382	Lab Sample ID:	AB20849
Date of Collection:	8/17/2011	Matrix:	Water
Date of Preparation:	8/26/2011	Final Volume:	44.8 mL
Date of Analysis:	9/27/2011	Sample Dilution:	1.12
Volume Prepared:	40 mL	pH:	<2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	160	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	ND	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	11000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	450	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	2900	110	
7439-96-5	Manganese	330	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID: EP0385
Date of Collection: 8/18/2011
Date of Preparation: 8/26/2011
Date of Analysis: 9/27/2011
Volume Prepared: 40 mL

Lab Sample ID: AB20851
Matrix: Water
Final Volume: 44.8 mL
Sample Dilution: 1.12
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	28	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	18000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	3200	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	3800	110	
7439-96-5	Manganese	550	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Reagent Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	Water
Date of Preparation:	8/26/2011	Final Volume:	44.8 mL
Date of Analysis:	9/27/2011	Sample Dilution:	1.12
Volume Prepared:	40 mL	pH:	<2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	ND	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	ND	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	ND	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	ND	110	
7439-96-5	Manganese	ND	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) RECOVERY

Commerce Street Plume - Williston, VT

COMPOUND	SPIKE ADDED ug/L	LFB CONCENTRATION ug/L	LFB RECOVERY %	QC LIMITS (% REC)
Aluminum	500	500	100	85 - 115
Antimony	500	500	100	85 - 115
Arsenic	500	500	100	85 - 115
Barium	500	480	96	85 - 115
Beryllium	200	190	95	85 - 115
Cadmium	250	240	97	85 - 115
Calcium	5000	4800	95	85 - 115
Chromium	500	500	100	85 - 115
Cobalt	500	480	97	85 - 115
Copper	500	480	97	85 - 115
Iron	500	500	99	85 - 115
Lead	500	490	97	85 - 115
Magnesium	5000	4900	99	85 - 115
Manganese	500	490	97	85 - 115
Nickel	500	480	97	85 - 115
Selenium	500	490	97	85 - 115
Silver	100	98	98	85 - 115
Thallium	500	480	97	85 - 115
Vanadium	500	490	99	85 - 115
Zinc	500	500	99	85 - 115

Comments:



Laboratory Report

September 28, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England RI

Project Number: 11080051

Project: Commerce Street Plume - Williston, VT

Analysis: Dissolved Metals in Water by ICP

Analysts: Mike Dowling, Zach Bonin

NTD 9/30/11 NTD for Z.B 9/30/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

Samples were analyzed using a Perkin Elmer Optima4300 Dual View Inductively Coupled Plasma instrument. The SOP's are based on " Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods, SW-846, 3rd ed., Rev. 2, Final Update III, Methods 3005A and 6010B," respectively

Date Samples Received by the Laboratory: 08/23/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N. Boudreau 10/5/11

Daniel N. Boudreau
Chemistry Team Leader

Laboratory Qualifiers:

- RL** Reporting limit
- ND** Not Detected above reporting limit
- NA** Not Applicable
- NC** Not calculated since analyte concentration is ND
- J1** Estimated value due to MS recovery outside acceptance criteria
- J2** Estimated value due to LFB result outside acceptance criteria
- J3** Estimated value due to RPD result outside acceptance criteria
- J4** Estimated value due to LCS result outside acceptance criteria
- B** Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
- R** No recovery was calculated since the analyte concentration is greater than four times the spike level.

Comments:

Commerce dissolved metals projects 11080045, 51, 56, 63, and 68 were batched together. See project 11080045 report for the lab reagent blank and lab fortified blank results. See project 11080056 report for the lab duplicate results, and 11080063 report for the matrix spike results.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID: EP0388
Date of Collection: 8/19/2011
Date of Preparation: 8/26/2011
Date of Analysis: 9/27/2011
Volume Prepared: 40 mL

Lab Sample ID: AB20952
Matrix: Water
Final Volume: 44.8 mL
Sample Dilution: 1.12
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	ND	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	75000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	13000	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	17000	110	
7439-96-5	Manganese	940	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID: EP0392
Date of Collection: 8/22/2011
Date of Preparation: 8/26/2011
Date of Analysis: 9/27/2011
Volume Prepared: 40 mL

Lab Sample ID: AB20953
Matrix: Water
Final Volume: 44.8 mL
Sample Dilution: 1.12
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	41	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	68000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	17000	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	8300	110	
7439-96-5	Manganese	550	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID: EP0406
Date of Collection: 8/22/2011
Date of Preparation: 8/26/2011
Date of Analysis: 9/27/2011
Volume Prepared: 40 mL

Lab Sample ID: AB20954
Matrix: Water
Final Volume: 44.8 mL
Sample Dilution: 1.12
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	31	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	71000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	8400	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	18000	110	
7439-96-5	Manganese	770	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

PN 11030051

USEPA NERL Inorganics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 1-082211-131358-0005

Date Shipped: 8/22/2011

Lab: New England Regional Laboratory

Carrier Name: FedEx

Case# EP009S

Lab Contact: Dan Boudreau

Airbill No: 875722301281

Cooler #: 1

Lab Phone: 617-918-8340

TM
TM
TM
TM
NOT USE
TM

Inorganic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Organic Sample #	For Lab Use Only
EP0389	Ground Water/ Josh Stewart	Grab	ICP-OES_DM(21), ICP-OES_TM(21)	90 (HNO3 pH<2), 91 (HNO3 pH<2) (2)	VP-3930A	08/19/2011		
EP0393	Ground Water/ Josh Stewart	Grab	ICP-OES_DM(21), ICP-OES_TM(21)	108 (HNO3 pH<2), 109 (HNO3 pH<2) (2)	VP-3625A	08/22/2011 08:55		
EP0399	PE Water/ Corey Rousseau		PE_ICP/MS(21)	132 (4 C) (1)	MS03474	08/22/2011 08:00		
EP0400	PE Water/ Corey Rousseau		PE_ICP/AES(21)	133 (4 C) (1)	IS1247	08/22/2011 08:05		
EP0401	PE Water/ Corey Rousseau		PE_Hg(Aq)(21)	134 (4 C) (1)	HG5947	08/22/2011 08:10		
EP0407	Ground Water/ Josh Stewart	Grab	ICP-OES_DM(21), ICP-OES_TM(21)	166 (HNO3 pH<2), 167 (HNO3 pH<2) (2)	VP-5430A	08/22/2011 13:30		
EPO388			DM			8/19/11		
EPO392			DM			8/22/11		
EPO406			DM			8/22/11		

(initials)

Special Instructions:	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #

Analysis Key: ICP-OES_DM=Dissolved Metals/ICP-OES, ICP-OES_TM=Total Metals/ICP-OES, PE_ICP/MS=PE L/M ICP-MS Metals Aqueous QATS, PE_ICP/AES=PE L/M ICP-AES Metals Aqueous QATS, PE_Hg(Aq)=PE L/M Mercury Aqueous

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
GW Samples	J. Franco	8/22/11	[Signature]	8/23/11	10:00						
			FedEx								

cooler 4°C



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

September 28, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England RI

Project Number: 11080056

Project: Commerce Street Plume - Williston, VT

Analysis: Dissolved Metals in Water by ICP

Analysts: Mike Dowling, Zach Bonin

MD 9/30/11 MD for ZB 9/30/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

Samples were analyzed using a Perkin Elmer Optima4300 Dual View Inductively Coupled Plasma instrument. The SOP's are based on " Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods, SW-846, 3rd ed., Rev. 2, Final Update III, Methods 3005A and 6010B," respectively

Date Samples Received by the Laboratory: 08/24/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N. Boudreau 10/5/11

Daniel N. Boudreau
Chemistry Team Leader

Laboratory Qualifiers:

RL	Reporting limit
ND	Not Detected above reporting limit
NA	Not Applicable
NC	Not calculated since analyte concentration is ND
J1	Estimated value due to MS recovery outside acceptance criteria
J2	Estimated value due to LFB result outside acceptance criteria
J3	Estimated value due to RPD result outside acceptance criteria
J4	Estimated value due to LCS result outside acceptance criteria
B	Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
R	No recovery was calculated since the analyte concentration is greater than four times the spike level.

Comments:

Commerce dissolved metals projects 11080045, 51, 56, 63, and 68 were batched together. See project 11080045 report for the lab reagent blank and lab fortified blank results. See project 11080056 report for the lab duplicate results, and 11080063 report for the matrix spike results.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID: VP-3830A
Date of Collection: 8/23/2011
Date of Preparation: 8/26/2011
Date of Analysis: 9/27/2011
Volume Prepared: 40 mL

Lab Sample ID: AB21009
Matrix: Water
Final Volume: 44.8 mL
Sample Dilution: 1.12
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	ND	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	24000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	450	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	5200	110	
7439-96-5	Manganese	280	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID:	DUP04-0823A	Lab Sample ID:	AB21010
Date of Collection:	8/23/2011	Matrix:	Water
Date of Preparation:	8/26/2011	Final Volume:	44.8 mL
Date of Analysis:	9/27/2011	Sample Dilution:	1.12
Volume Prepared:	40 mL	pH:	<2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	ND	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	24000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	490	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	5300	110	
7439-96-5	Manganese	280	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID: VP-3725A
Date of Collection: 8/23/2011
Date of Preparation: 8/26/2011
Date of Analysis: 9/27/2011
Volume Prepared: 40 mL

Lab Sample ID: AB21011
Matrix: Water
Final Volume: 44.8 mL
Sample Dilution: 1.12
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	82	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	96000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	12000	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	16000	110	
7439-96-5	Manganese	1800	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

Laboratory Duplicate Results

Sample ID: AB21011

PARAMETER	SAMPLE	SAMPLE DUPLICATE	PRECISION	QC LIMITS
	RESULT ug/L	RESULT ug/L	RPD %	
Aluminum	ND	ND	NC	20
Antimony	ND	ND	NC	20
Arsenic	ND	ND	NC	20
Barium	82	82	0	20
Beryllium	ND	ND	NC	20
Cadmium	ND	ND	NC	20
Calcium	96000	97000	1	20
Chromium	ND	ND	NC	20
Cobalt	ND	ND	NC	20
Copper	ND	ND	NC	20
Iron	12000	12000	0	20
Lead	ND	ND	NC	20
Magnesium	16000	16000	0	20
Manganese	1800	1800	0	20
Nickel	ND	ND	NC	20
Selenium	ND	ND	NC	20
Silver	ND	ND	NC	20
Thallium	ND	ND	NC	20
Vanadium	ND	ND	NC	20
Zinc	ND	ND	NC	20

Comments:

PN 11080056

USEPA NERL Inorganics COC (LAB COPY)

Date Shipped: 8/23/2011
Carrier Name: FedEx
Airbill No: 875722301329

CHAIN OF CUSTODY RECORD

Site #: 80036.03
Contact Name: Gail DeRuzzo
Contact Phone: 978-683-0891

No: 1-082311-083942-0007

Cooler #: 1
Lab: New England Regional Laboratory
Lab Phone: 617-918-8340

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	MS/MS D
#1	VP-3830A	VP-38	EP0414	210	Dissolved Metals/ICP-AES	Ground Water	8/23/2011	1	250 mL Poly	HNO3 pH<2	
	VP-3830A	VP-38	EP0415	211	Total Metals/ICP-AES	Ground Water	8/23/2011	1	250 mL Poly	HNO3 pH<2	
#2	DUP04-0823A	VP-38	EP0416	220	Dissolved Metals/ICP-AES	Ground Water	8/23/2011	1	250 mL Poly	HNO3 pH<2	
	DUP04-0823A	VP-38	EP0417	221	Total Metals/ICP-AES	Ground Water	8/23/2011	1	250 mL Poly	HNO3 pH<2	
#3	VP-3725A	VP-37	EP0423	268	Dissolved Metals/ICP-AES	Ground Water	8/23/2011	1	250 mL Poly	HNO3 pH<2	Y
	VP-3725A	VP-37	EP0423	278	Dissolved Metals/ICP-AES	Ground Water	8/23/2011	1	250 mL Poly	HNO3 pH<2	Y
	VP-3725A	VP-37	EP0423	279	Dissolved Metals/ICP-AES	Ground Water	8/23/2011	1	250 mL Poly	HNO3 pH<2	Y
	VP-3725A	VP-37	EP0424	269	Total Metals/ICP-AES	Ground Water	8/23/2011	1	250 mL Poly	HNO3 pH<2	Y
	VP-3725A	VP-37	EP0424	280	Total Metals/ICP-AES	Ground Water	8/23/2011	1	250 mL Poly	HNO3 pH<2	Y
	VP-3725A	VP-37	EP0424	281	Total Metals/ICP-AES	Ground Water	8/23/2011	1	250 mL Poly	HNO3 pH<2	Y

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Special Instructions:

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
Shipping	[Signature]	8/23/11	[Signature]	8/24/11	09:45						
			FEDEX								

40C



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

September 28, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080063

Project: Commerce Street Plume - Williston, VT

Analysis: Dissolved Metals in Water by ICP

Analysts: Mike Dowling, Zach Bonin

MD 9/30/11 MD for ZB 9/30/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

Samples were analyzed using a Perkin Elmer Optima4300 Dual View Inductively Coupled Plasma instrument. The SOP's are based on " Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods, SW-846, 3rd ed., Rev. 2, Final Update III, Methods 3005A and 6010B," respectively

Date Samples Received by the Laboratory: 08/25/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N. Boudreau 10/5/11

Daniel N. Boudreau
Chemistry Team Leader

Laboratory Qualifiers:

- RL** Reporting limit
- ND** Not Detected above reporting limit
- NA** Not Applicable
- NC** Not calculated since analyte concentration is ND
- J1** Estimated value due to MS recovery outside acceptance criteria
- J2** Estimated value due to LFB result outside acceptance criteria
- J3** Estimated value due to RPD result outside acceptance criteria
- J4** Estimated value due to LCS result outside acceptance criteria
- B** Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
- R** No recovery was calculated since the analyte concentration is greater than four times the spike level.

Comments:

Commerce dissolved metals projects 11080045, 51, 56, 63, and 68 were batched together. See project 11080045 report for the lab reagent blank and lab fortified blank results. See project 11080056 report for the lab duplicate results, and 11080063 report for the matrix spike results.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID: VP-5325A
Date of Collection: 8/24/2011
Date of Preparation: 8/26/2011
Date of Analysis: 9/27/2011
Volume Prepared: 40 mL

Lab Sample ID: AB21093
Matrix: Water
Final Volume: 44.8 mL
Sample Dilution: 1.12
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	ND	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	7700	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	390	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	3900	110	
7439-96-5	Manganese	500	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID: VP-4025A
Date of Collection: 8/24/2011
Date of Preparation: 8/26/2011
Date of Analysis: 9/27/2011
Volume Prepared: 40 mL

Lab Sample ID: AB21094
Matrix: Water
Final Volume: 44.8 mL
Sample Dilution: 1.12
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	42	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	88000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	2200	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	14000	110	
7439-96-5	Manganese	610	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

METALS MATRIX SPIKE (MS) RESULTS

Commerce Street Plume - Williston, VT

Sample ID: AB21093

COMPOUND	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
Aluminum	500	ND	500	100	75 - 125
Antimony	500	ND	503	101	75 - 125
Arsenic	500	ND	500	100	75 - 125
Barium	500	ND	480	96	75 - 125
Beryllium	200	ND	189	95	75 - 125
Cadmium	250	ND	238	95	75 - 125
Chromium	500	ND	485	97	75 - 125
Cobalt	500	ND	482	96	75 - 125
Copper	500	ND	496	99	75 - 125
Iron	500	390	880	98	75 - 125
Lead	500	ND	474	95	75 - 125
Manganese	500	500	973	95	75 - 125
Nickel	500	ND	484	97	75 - 125
Selenium	500	ND	484	97	75 - 125
Silver	100	ND	96.7	97	75 - 125
Thallium	500	ND	469	94	75 - 125
Vanadium	500	ND	489	98	75 - 125
Zinc	500	ND	489	98	75 - 125

PN 11080063

USEPA NERL Inorganics COC (LAB COPY)

Date Shipped: 8/24/2011
 Carrier Name: FedEx
 Airbill No: 875722301340

CHAIN OF CUSTODY RECORD

Site #: 80036.03
 Contact Name: Gail DeRuzzo
 Contact Phone: 978-683-0891

No: 1-082411-095736-0010

Cooler #: 1
 Lab: New England Regional Laboratory
 Lab Phone: 617-918-8340

Lab #	Sample #	Location	CLP Sample #	Tag	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	MS/MS D
	VP-5325A	VP-53	EP0430	406	Dissolved Metals/ICP-AES	Ground Water	8/24/2011	1	250 mL Poly	HNO3 pH<2	
	VP-5325A	VP-53	EP0431	407	Total Metals/ICP-AES	Ground Water	8/24/2011	1	250 mL Poly	HNO3 pH<2	
	VP-4025A	VP-40	EP0438	320	Dissolved Metals/ICP-AES	Ground Water	8/24/2011	1	250 mL Poly	HNO3 pH<2	
	VP-4025A	VP-40	EP0439	321	Total Metals/ICP-AES	Ground Water	8/24/2011	1	250 mL Poly	HNO3 pH<2	

Special Instructions: Please return cooler at your earliest convenience using the included FedEx Airbill, Thank you.	SAMPLES TRANSFERRED FROM
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
Shipping	<i>[Signature]</i>	8/24/11	<i>[Signature]</i>	8/25/11	10:50						

30C



Laboratory Report

September 28, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England RI

Project Number: 11080068

Project: Commerce Street Plume - Williston, VT

Analysis: Dissolved Metals in Water by ICP

Analysts: Mike Dowling, Zach Bonin

MD 9/30/11 MD for ZB 9/30/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

Samples were analyzed using a Perkin Elmer Optima4300 Dual View Inductively Coupled Plasma instrument. The SOP's are based on " Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods, SW-846, 3rd ed., Rev. 2, Final Update III, Methods 3005A and 6010B," respectively

Date Samples Received by the Laboratory: 08/26/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N. Boudreau 10/5/11

Daniel N. Boudreau
Chemistry Team Leader

Laboratory Qualifiers:

- RL** Reporting limit
- ND** Not Detected above reporting limit
- NA** Not Applicable
- NC** Not calculated since analyte concentration is ND
- J1** Estimated value due to MS recovery outside acceptance criteria
- J2** Estimated value due to LFB result outside acceptance criteria
- J3** Estimated value due to RPD result outside acceptance criteria
- J4** Estimated value due to LCS result outside acceptance criteria
- B** Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
- R** No recovery was calculated since the analyte concentration is greater than four times the spike level.

Comments:

Commerce dissolved metals projects 11080045, 51, 56, 63, and 68 were batched together. See project 11080045 report for the lab reagent blank and lab fortified blank results. See project 11080056 report for the lab duplicate results, and 11080063 report for the matrix spike results.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID: VP-3525A
Date of Collection: 8/25/2011
Date of Preparation: 8/29/2011
Date of Analysis: 9/27/2011
Volume Prepared: 40 mL

Lab Sample ID: AB21172
Matrix: Water
Final Volume: 44.8 mL
Sample Dilution: 1.12
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	520	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	34	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	83000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	8700	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	22000	110	
7439-96-5	Manganese	480	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID: VP-3425A
Date of Collection: 8/25/2011
Date of Preparation: 8/29/2011
Date of Analysis: 9/27/2011
Volume Prepared: 40 mL

Lab Sample ID: AB21173
Matrix: Water
Final Volume: 44.8 mL
Sample Dilution: 1.12
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	92	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	59000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	37	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	2400	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	26000	110	
7439-96-5	Manganese	1000	22	
7440-02-0	Nickel	71	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

October 12, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080075

Project: Commerce Street Plume - Williston, VT

Analysis: Dissolved Metals in Water by ICP

Analysts: Mike Dowling, Janet Paquin

MD 10/13/11 JP 10/12/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

Samples were analyzed using a Perkin Elmer Optima 4300 Dual View Inductively Coupled Plasma instrument. The SOP's are based on " Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods, SW-846, 3rd ed., Rev. 2, Final Update III, Methods 3005A and 6010B," respectively

Date Samples Received by the Laboratory: 08/31/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,

Daniel N. Boudreau 10/19/11

Daniel N. Boudreau
Chemistry Team Leader

Laboratory Qualifiers:

RL	Reporting limit
ND	Not Detected above reporting limit
NA	Not Applicable
NC	Not calculated since analyte concentration is ND
J1	Estimated value due to MS recovery outside acceptance criteria
J2	Estimated value due to LFB result outside acceptance criteria
J3	Estimated value due to RPD result outside acceptance criteria
J4	Estimated value due to LCS result outside acceptance criteria
B	Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
R	No recovery was calculated since the analyte concentration is greater than four times the spike level.

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Dissolved Metals in Water by ICP

Client Sample ID: VP-4925A
Date of Collection: 8/29/2011
Date of Preparation: 9/26/2011
Date of Analysis: 10/4/2011
Volume Prepared: 40 mL

Lab Sample ID: AB21287
Matrix: GW
Final Volume: 44.8 mL
Digestate Dilution: 1.12
pH: <2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	180	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	150000	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	11000	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	26000	110	
7439-96-5	Manganese	2100	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Reagent Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	Water
Date of Preparation:	9/26/2011	Final Volume:	44.8 mL
Date of Analysis:	10/4/2011	Digestate Dilution:	1.12
Volume Prepared:	40 mL	pH:	<2

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	120	
7440-36-0	Antimony	ND	22	
7440-38-2	Arsenic	ND	22	
7440-39-3	Barium	ND	22	
7440-41-7	Beryllium	ND	9.0	
7440-43-9	Cadmium	ND	11	
7440-70-2	Calcium	ND	110	
7440-47-3	Chromium	ND	22	
7440-48-4	Cobalt	ND	22	
7440-50-8	Copper	ND	22	
7439-89-6	Iron	ND	45	
7439-92-1	Lead	ND	22	
7439-95-4	Magnesium	ND	110	
7439-96-5	Manganese	ND	22	
7440-02-0	Nickel	ND	22	
7782-49-2	Selenium	ND	22	
7440-22-4	Silver	ND	11	
7440-28-0	Thallium	ND	22	
7440-62-2	Vanadium	ND	22	
7440-66-6	Zinc	ND	22	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

METALS MATRIX SPIKE (MS) RESULTS

Commerce Street Plume - Williston, VT

Sample ID: AB21287

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
Aluminum	500	ND	528	106	75 - 125
Antimony	500	ND	501	100	75 - 125
Arsenic	500	ND	517	103	75 - 125
Barium	500	180	664	97	75 - 125
Beryllium	200	ND	197	99	75 - 125
Cadmium	250	ND	242	97	75 - 125
Chromium	500	ND	490	98	75 - 125
Cobalt	500	ND	478	96	75 - 125
Copper	500	ND	530	106	75 - 125
Iron	500	11000	11600	R	75 - 125
Lead	500	ND	486	97	75 - 125
Manganese	500	2100	2580	R	75 - 125
Nickel	500	ND	482	96	75 - 125
Selenium	500	ND	523	105	75 - 125
Silver	100	ND	105	105	75 - 125
Thallium	500	ND	479	96	75 - 125
Vanadium	500	ND	519	104	75 - 125
Zinc	500	ND	490	98	75 - 125

Comments:

Samples in Batch: AB21287

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21287

PARAMETER	SAMPLE	SAMPLE DUPLICATE	PRECISION	QC LIMITS
	RESULT ug/L	RESULT ug/L	RPD %	
Aluminum	ND	ND	NC	20
Antimony	ND	ND	NC	20
Arsenic	ND	ND	NC	20
Barium	180	180	0	20
Beryllium	ND	ND	NC	20
Cadmium	ND	ND	NC	20
Calcium	150000	150000	0	20
Chromium	ND	ND	NC	20
Cobalt	ND	ND	NC	20
Copper	ND	ND	NC	20
Iron	11000	11000	0	20
Lead	ND	ND	NC	20
Magnesium	26000	26000	0	20
Manganese	2100	2100	0	20
Nickel	ND	ND	NC	20
Selenium	ND	ND	NC	20
Silver	ND	ND	NC	20
Thallium	ND	ND	NC	20
Vanadium	ND	ND	NC	20
Zinc	ND	ND	NC	20

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Fortified Blank (LFB) Results

Commerce Street Plume - Williston, VT

PARAMETER	LFB AMOUNT SPIKED ug/L	LFB RESULT ug/L	LFB RECOVERY %	QC LIMITS %
Aluminum	500	532	106	85 - 115
Antimony	500	511	102	85 - 115
Arsenic	500	508	102	85 - 115
Barium	500	509	102	85 - 115
Beryllium	200	205	102	85 - 115
Cadmium	250	257	103	85 - 115
Calcium	5000	5110	102	85 - 115
Chromium	500	521	104	85 - 115
Cobalt	500	516	103	85 - 115
Copper	500	516	103	85 - 115
Iron	500	520	104	85 - 115
Lead	500	517	103	85 - 115
Magnesium	5000	5160	103	85 - 115
Manganese	500	518	104	85 - 115
Nickel	500	514	103	85 - 115
Selenium	500	515	103	85 - 115
Silver	100	105	105	85 - 115
Thallium	500	527	105	85 - 115
Vanadium	500	518	104	85 - 115
Zinc	500	522	104	85 - 115

Comments:



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

August 23, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080045

Project: Commerce Street Plume - Williston, VT

Analysis: VOAs in Water

Analyst: Joseph Montanaro

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-VOAGCMS9.

Samples were analyzed by GC/MS. Samples were introduced to the GC via a Tekmar pre-concentrator and an Archon autosampler. The analysis SOP is based on US EPA Method 8260B, method 5030B, rev 2.0 SW-846, Rev 2.0, 1996. Method 624, 40CFR Part 136 Appendix A, July 1, 1992, and USEPA CLP SOW for Organic Analysis OLM04.2, 1999.

Date Samples Received by the Laboratory: 08/19/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0372	Lab Sample ID:	AB20833
Date of Collection:	8/16/2011	Matrix:	GW
Date of Extraction:	8/19/11	Volume Purged:	5 mL
Date of Analysis:	8/19/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-1	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	64	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	114	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Blank for SVOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	8/19/11	Volume Purged:	5.0 mL
Date of Analysis:	8/19/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	~6

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-1	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	110	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	96	78 - 111

Comments: Laboratory blank is associated with all samples in this project.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0374	Lab Sample ID:	AB20834
Date of Collection:	8/16/2011	Matrix	PE water
Date of Extraction:	8/19/11	Volume Purged:	5 mL
Date of Analysis:	8/19/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	17	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	21	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	24	1.0	
79-00-5	1,1,2-Trichloroethane	23	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	45	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	46	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	27	1.0	
106-93-4	1,2-Dibromoethane	36	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	35	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	27	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	87	10	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	9.9	1.0	
75-15-0	Carbon Disulfide	27	1.0	
56-23-5	Carbon tetrachloride	43	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	37	1.0
74-87-3	Chloromethane	35	1.0
124-48-1	Dibromochloromethane	43	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	14	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	30	2.0
1634-04-4	Methyl-t-Butyl Ether	86	10
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	33	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	43	1.0
156-60-5	Trans-1,2-Dichloroethylene	45	1.0
79-01-6	Trichloroethylene	1.0	1.0
75-69-4	Trichlorofluoromethane	25	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	29	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	118	74 - 136
Toluene-D8	102	85 - 118
1,4-Bromofluorobenzene	97	78 - 111

Comments: The concentrations for MIBK and methyl-t-butyl ether are derived from a ten-fold dilution.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0375	Lab Sample ID:	AB20835
Date of Collection:	8/16/2011	Matrix:	GW
Date of Extraction:	8/19/11	Volume Purged:	5 mL
Date of Analysis:	8/19/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	51	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	114	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0377	Lab Sample ID:	AB20836
Date of Collection:	8/17/2011	Matrix:	GW
Date of Extraction:	8/19/11	Volume Purged:	5 mL
Date of Analysis:	8/19/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	1.4	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	116	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0379	Lab Sample ID:	AB20837
Date of Collection:	8/17/2011	Matrix:	GW
Date of Extraction:	8/19/11	Volume Purged:	5 mL
Date of Analysis:	8/19/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	20
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	20	
71-55-6	1,1,1-Trichloroethane	ND	20	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	20	
79-00-5	1,1,2-Trichloroethane	ND	20	
75-35-4	1,1-Dichloroethylene	ND	20	
563-58-6	1,1-Dichloropropene	ND	20	
75-34-3	1,1-dichloroethane	ND	20	
87-61-6	1,2,3-Trichlorobenzene	ND	20	
96-18-4	1,2,3-Trichloropropane	ND	20	
120-82-1	1,2,4-Trichlorobenzene	ND	20	
95-63-6	1,2,4-Trimethylbenzene	ND	20	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	20	
106-93-4	1,2-Dibromoethane	ND	20	
95-50-1	1,2-Dichlorobenzene	ND	20	
107-06-2	1,2-Dichloroethane	ND	20	
78-87-5	1,2-Dichloropropane	ND	20	
108-67-8	1,3,5-Trimethylbenzene	ND	20	
541-73-1	1,3-Dichlorobenzene	ND	20	
142-28-9	1,3-Dichloropropane	ND	20	
106-46-7	1,4-Dichlorobenzene	ND	20	
594-20-7	2,2-Dichloropropane	ND	20	
78-93-3	2-Butanone (MEK)	ND	20	
95-49-8	2-Chlorotoluene	ND	20	
591-78-6	2-Hexanone	ND	20	
67-64-1	2-Propanone (acetone)	ND	20	
106-43-4	4-Chlorotoluene	ND	20	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	20	
107-13-1	Acrylonitrile	ND	20	
71-43-2	Benzene	ND	20	
108-86-1	Bromobenzene	ND	20	
74-97-5	Bromochloromethane	ND	20	
75-27-4	Bromodichloromethane	ND	20	
75-25-2	Bromoform	ND	20	
74-83-9	Bromomethane	ND	20	
75-15-0	Carbon Disulfide	ND	20	
56-23-5	Carbon tetrachloride	ND	20	
108-90-7	Chlorobenzene	ND	20	
75-00-3	Chloroethane	ND	20	

67-66-3	Chloroform	ND	20
74-87-3	Chloromethane	ND	20
124-48-1	Dibromochloromethane	ND	20
74-95-3	Dibromomethane	ND	20
75-71-8	Dichlorodifluoromethane	ND	20
60-29-7	Ethyl Ether	ND	20
100-41-4	Ethylbenzene	ND	20
87-68-3	Hexachlorobutadiene	ND	20
98-82-8	Isopropylbenzene	ND	20
108-38-3/106-42-	M/P Xylene	ND	40
1634-04-4	Methyl-t-Butyl Ether	ND	20
75-09-2	Methylene Chloride	ND	20
104-51-8	N-Butylbenzene	ND	20
103-65-1	N-Propylbenzene	ND	20
91-20-3	Naphthalene	ND	20
95-47-6	Ortho Xylene	ND	20
99-87-6	Para-Isopropyltoluene	ND	20
135-98-8	Sec-Butylbenzene	ND	20
100-42-5	Styrene	ND	20
98-06-6	Tert-Butylbenzene	ND	20
127-18-4	Tetrachloroethylene	ND	20
109-99-9	Tetrahydrofuran	ND	20
108-88-3	Toluene	ND	20
156-60-5	Trans-1,2-Dichloroethylene	ND	20
79-01-6	Trichloroethylene	730	20
75-69-4	Trichlorofluoromethane	ND	20
108-05-4	Vinyl Acetate	ND	20
75-01-4	Vinyl Chloride	ND	20
10061-01-5	c-1,3-dichloropropene	ND	20
156-59-2	cis-1,2-Dichloroethylene	ND	20
10061-02-6	t-1,3-Dichloropropene	ND	20

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	114	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments: The concentration reported is derived from a twenty-fold dilution.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0380	Lab Sample ID:	AB20838
Date of Collection:	8/17/2011	Matrix:	GW
Date of Extraction:	8/19/11	Volume Purged:	5 mL
Date of Analysis:	8/19/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	20
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	20	
71-55-6	1,1,1-Trichloroethane	ND	20	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	20	
79-00-5	1,1,2-Trichloroethane	ND	20	
75-35-4	1,1-Dichloroethylene	ND	20	
563-58-6	1,1-Dichloropropene	ND	20	
75-34-3	1,1-dichloroethane	ND	20	
87-61-6	1,2,3-Trichlorobenzene	ND	20	
96-18-4	1,2,3-Trichloropropane	ND	20	
120-82-1	1,2,4-Trichlorobenzene	ND	20	
95-63-6	1,2,4-Trimethylbenzene	ND	20	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	20	
106-93-4	1,2-Dibromoethane	ND	20	
95-50-1	1,2-Dichlorobenzene	ND	20	
107-06-2	1,2-Dichloroethane	ND	20	
78-87-5	1,2-Dichloropropane	ND	20	
108-67-8	1,3,5-Trimethylbenzene	ND	20	
541-73-1	1,3-Dichlorobenzene	ND	20	
142-28-9	1,3-Dichloropropane	ND	20	
106-46-7	1,4-Dichlorobenzene	ND	20	
594-20-7	2,2-Dichloropropane	ND	20	
78-93-3	2-Butanone (MEK)	ND	20	
95-49-8	2-Chlorotoluene	ND	20	
591-78-6	2-Hexanone	ND	20	
67-64-1	2-Propanone (acetone)	ND	20	
106-43-4	4-Chlorotoluene	ND	20	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	20	
107-13-1	Acrylonitrile	ND	20	
71-43-2	Benzene	ND	20	
108-86-1	Bromobenzene	ND	20	
74-97-5	Bromochloromethane	ND	20	
75-27-4	Bromodichloromethane	ND	20	
75-25-2	Bromoform	ND	20	
74-83-9	Bromomethane	ND	20	
75-15-0	Carbon Disulfide	ND	20	
56-23-5	Carbon tetrachloride	ND	20	
108-90-7	Chlorobenzene	ND	20	
75-00-3	Chloroethane	ND	20	

67-66-3	Chloroform	ND	20
74-87-3	Chloromethane	ND	20
124-48-1	Dibromochloromethane	ND	20
74-95-3	Dibromomethane	ND	20
75-71-8	Dichlorodifluoromethane	ND	20
60-29-7	Ethyl Ether	ND	20
100-41-4	Ethylbenzene	ND	20
87-68-3	Hexachlorobutadiene	ND	20
98-82-8	Isopropylbenzene	ND	20
108-38-3/106-42-	M/P Xylene	ND	40
1634-04-4	Methyl-t-Butyl Ether	ND	20
75-09-2	Methylene Chloride	ND	20
104-51-8	N-Butylbenzene	ND	20
103-65-1	N-Propylbenzene	ND	20
91-20-3	Naphthalene	ND	20
95-47-6	Ortho Xylene	ND	20
99-87-6	Para-Isopropyltoluene	ND	20
135-98-8	Sec-Butylbenzene	ND	20
100-42-5	Styrene	ND	20
98-06-6	Tert-Butylbenzene	ND	20
127-18-4	Tetrachloroethylene	ND	20
109-99-9	Tetrahydrofuran	ND	20
108-88-3	Toluene	ND	20
156-60-5	Trans-1,2-Dichloroethylene	ND	20
79-01-6	Trichloroethylene	720	20
75-69-4	Trichlorofluoromethane	ND	20
108-05-4	Vinyl Acetate	ND	20
75-01-4	Vinyl Chloride	ND	20
10061-01-5	c-1,3-dichloropropene	ND	20
156-59-2	cis-1,2-Dichloroethylene	ND	20
10061-02-6	t-1,3-Dichloropropene	ND	20

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	113	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments: The concentration reported is derived from a twenty-fold dilution.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0381	Lab Sample ID:	AB20839
Date of Collection:	8/17/2011	Matrix:	GW
Date of Extraction:	8/19/11	Volume Purged:	5 mL
Date of Analysis:	8/19/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	1.3	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	32	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	115	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0384	Lab Sample ID:	AB20840
Date of Collection:	8/18/2011	Matrix:	GW
Date of Extraction:	8/19/11	Volume Purged:	5 mL
Date of Analysis:	8/19/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	1.7	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	115	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0387	Lab Sample ID:	AB20842
Date of Collection:	8/18/2011	Matrix:	GW
Date of Extraction:	8/19/11	Volume Purged:	5 mL
Date of Analysis:	8/19/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	14	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	11	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	120	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	96	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

VOA MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB20837

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
1,1,1,2-Tetrachloroethane	400	ND	380	95	67 - 129
1,1,1-Trichloroethane	400	ND	360	90	75 - 139
1,1,2,2-Tetrachloroethane	400	ND	380	95	50 - 142
1,1,2-Trichloro-1,2,2-Trifluoroethane	400	ND	380	95	55 - 135
1,1,2-Trichloroethane	400	ND	380	95	62 - 142
1,1-Dichloroethylene	400	ND	380	95	80 - 138
1,1-Dichloropropene	400	ND	370	93	73 - 131
1,1-dichloroethane	400	ND	390	98	61 - 152
1,2,3-Trichlorobenzene	400	ND	390	98	49 - 143
1,2,3-Trichloropropane	400	ND	390	98	53 - 135
1,2,4-Trichlorobenzene	400	ND	390	98	63 - 131
1,2,4-Trimethylbenzene	400	ND	400	100	79 - 142
1,2-Dibromo-3-Chloropropane	400	ND	390	98	28 - 122
1,2-Dibromoethane	400	ND	380	95	53 - 139
1,2-Dichlorobenzene	400	ND	390	98	74 - 129
1,2-Dichloroethane	400	ND	370	93	61 - 142
1,2-Dichloropropane	400	ND	380	95	71 - 126
1,3,5-Trimethylbenzene	400	ND	390	98	77 - 140
1,3-Dichlorobenzene	400	ND	380	95	78 - 127
1,3-Dichloropropane	400	ND	380	95	63 - 130
1,4-Dichlorobenzene	400	ND	380	95	72 - 131
2,2-Dichloropropane	400	ND	380	95	50 - 139
2-Butanone (MEK)	400	ND	350	88	29 - 163
2-Chlorotoluene	400	ND	370	93	74 - 134
2-Hexanone	400	ND	390	98	36 - 141
2-Propanone (acetone)	400	ND	290	73	29 - 164
4-Chlorotoluene	400	ND	390	98	68 - 141
4-Methyl-2-Pentanone(MIBK)	400	ND	420	105	35 - 139
Acrylonitrile	400	ND	410	102	42 - 150
Benzene	400	ND	370	93	78 - 134
Bromobenzene	400	ND	380	95	76 - 126
Bromochloromethane	400	ND	380	95	62 - 140
Bromodichloromethane	400	ND	360	90	62 - 133
Bromoform	400	ND	350	88	31 - 133
Bromomethane	400	ND	390	98	58 - 148
Carbon Disulfide	400	ND	390	98	66 - 135
Carbon tetrachloride	400	ND	360	90	62 - 146
Chlorobenzene	400	ND	380	95	74 - 139
Chloroethane	400	ND	380	95	65 - 145
Chloroform	400	ND	380	95	60 - 144
Chloromethane	400	ND	380	95	58 - 134
Dibromochloromethane	400	ND	380	95	34 - 140
Dibromomethane	400	ND	370	93	67 - 125
Dichlorodifluoromethane	400	ND	390	98	30 - 132
Ethyl Ether	400	ND	410	102	58 - 145
Ethylbenzene	400	ND	380	95	73 - 143
Hexachlorobutadiene	400	ND	380	95	56 - 144
Isopropylbenzene	400	ND	400	100	73 - 139
M/P Xylene	800	ND	750	94	79 - 136

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Methyl-t-Butyl Ether	400	ND	400	100	50 - 144
Methylene Chloride	400	ND	390	98	70 - 144
N-Butylbenzene	400	ND	400	100	68 - 143
N-Propylbenzene	400	ND	390	98	72 - 149
Naphthalene	400	ND	410	102	33 - 154
Ortho Xylene	400	ND	380	95	80 - 129
Para-Isopropyltoluene	400	ND	400	100	71 - 140
Sec-Butylbenzene	400	ND	400	100	75 - 148
Styrene	400	ND	380	95	61 - 148
Tert-Butylbenzene	400	ND	390	98	71 - 139
Tetrachloroethylene	400	ND	360	90	45 - 145
Tetrahydrofuran	400	ND	400	100	37 - 143
Toluene	400	ND	370	93	77 - 142
Trans-1,2-Dichloroethylene	400	ND	380	95	79 - 139
Trichloroethylene	400	730	1000	68	65 - 143
Trichlorofluoromethane	400	ND	380	95	58 - 161
Vinyl Acetate	400	ND	680	170	22 - 173
Vinyl Chloride	400	ND	400	100	68 - 139
c-1,3-dichloropropene	400	ND	380	95	51 - 144
cis-1,2-Dichloroethylene	400	ND	380	95	59 - 154
t-1,3-Dichloropropene	400	ND	370	93	47 - 145

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sample ID: AB20837

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	400	380	95	0	40
1,1,1-Trichloroethane	400	380	95	5	16
1,1,2,2-Tetrachloroethane	400	380	95	0	40
1,1,2-Trichloro-1,2,2-Trifluoroetha	400	390	98	3	40
1,1,2-Trichloroethane	400	370	93	3	40
1,1-Dichloroethylene	400	380	95	0	35
1,1-Dichloropropene	400	380	95	3	40
1,1-dichloroethane	400	390	98	0	40
1,2,3-Trichlorobenzene	400	390	98	0	40
1,2,3-Trichloropropane	400	380	95	3	40
1,2,4-Trichlorobenzene	400	400	100	3	40
1,2,4-Trimethylbenzene	400	400	100	0	40
1,2-Dibromo-3-Chloropropane	400	390	98	0	40
1,2-Dibromoethane	400	380	95	0	40
1,2-Dichlorobenzene	400	380	95	3	40
1,2-Dichloroethane	400	370	93	0	23
1,2-Dichloropropane	400	380	95	0	40
1,3,5-Trimethylbenzene	400	380	95	3	40
1,3-Dichlorobenzene	400	380	95	0	40
1,3-Dichloropropane	400	380	95	0	40
1,4-Dichlorobenzene	400	380	95	0	21
2,2-Dichloropropane	400	390	98	3	40
2-Butanone (MEK)	400	360	90	3	40
2-Chlorotoluene	400	370	93	0	40
2-Hexanone	400	400	100	3	40
2-Propanone (acetone)	400	260	65	11	40
4-Chlorotoluene	400	380	95	3	40
4-Methyl-2-Pentanone(MIBK)	400	420	105	0	40
Acrylonitrile	400	410	102	0	40
Benzene	400	370	93	0	14
Bromobenzene	400	370	93	3	40
Bromochloromethane	400	380	95	0	40
Bromodichloromethane	400	370	93	3	21
Bromoform	400	340	85	3	40
Bromomethane	400	390	98	0	40
Carbon Disulfide	400	400	100	3	40
Carbon tetrachloride	400	370	93	3	19
Chlorobenzene	400	380	95	0	40
Chloroethane	400	390	98	3	40
Chloroform	400	380	95	0	16
Chloromethane	400	380	95	0	40
Dibromochloromethane	400	370	93	3	36
Dibromomethane	400	370	93	0	40
Dichlorodifluoromethane	400	390	98	0	40
Ethyl Ether	400	400	100	2	40
Ethylbenzene	400	390	98	3	40
Hexachlorobutadiene	400	390	98	3	40
Isopropylbenzene	400	400	100	0	40
M/P Xylene	800	760	95	1	40
Methyl-t-Butyl Ether	400	400	100	0	40
Methylene Chloride	400	390	98	0	40
N-Butylbenzene	400	410	102	2	40
N-Propylbenzene	400	400	100	3	40
Naphthalene	400	410	102	0	40

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Ortho Xylene	400	380	95	0	40
Para-Isopropyltoluene	400	400	100	0	40
Sec-Butylbenzene	400	400	100	0	40
Styrene	400	390	98	3	40
Tert-Butylbenzene	400	400	100	3	40
Tetrachloroethylene	400	360	90	0	40
Tetrahydrofuran	400	400	100	0	40
Toluene	400	370	93	0	40
Trans-1,2-Dichloroethylene	400	380	95	0	40
Trichloroethylene	400	1000	68	0	22
Trichlorofluoromethane	400	390	98	3	40
Vinyl Acetate	400	700	175	3	40
Vinyl Chloride	400	390	98	3	19
c-1,3-dichloropropene	400	380	95	0	40
cis-1,2-Dichloroethylene	400	380	95	0	40
t-1,3-Dichloropropene	400	370	93	0	40

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB20833

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
1,1,1,2-Tetrachloroethane	ND	ND	ND	30
1,1,1-Trichloroethane	ND	ND	ND	30
1,1,2,2-Tetrachloroethane	ND	ND	ND	30
1,1,2-Trichloro-1,2,2-Trifluoroeth:	ND	ND	ND	30
1,1,2-Trichloroethane	ND	ND	ND	30
1,1-Dichloroethylene	ND	ND	ND	30
1,1-Dichloropropene	ND	ND	ND	30
1,1-dichloroethane	ND	ND	ND	30
1,2,3-Trichlorobenzene	ND	ND	ND	30
1,2,3-Trichloropropane	ND	ND	ND	30
1,2,4-Trichlorobenzene	ND	ND	ND	30
1,2,4-Trimethylbenzene	ND	ND	ND	30
1,2-Dibromo-3-Chloropropane	ND	ND	ND	30
1,2-Dibromoethane	ND	ND	ND	30
1,2-Dichlorobenzene	ND	ND	ND	30
1,2-Dichloroethane	ND	ND	ND	30
1,2-Dichloropropane	ND	ND	ND	30
1,3,5-Trimethylbenzene	ND	ND	ND	30
1,3-Dichlorobenzene	ND	ND	ND	30
1,3-Dichloropropane	ND	ND	ND	30
1,4-Dichlorobenzene	ND	ND	ND	30
2,2-Dichloropropane	ND	ND	ND	30
2-Butanone (MEK)	ND	ND	ND	30
2-Chlorotoluene	ND	ND	ND	30
2-Hexanone	ND	ND	ND	30
2-Propanone (acetone)	ND	ND	ND	30
4-Chlorotoluene	ND	ND	ND	30
4-Methyl-2-Pentanone(MIBK)	ND	ND	ND	30
Acrylonitrile	ND	ND	ND	30
Benzene	ND	ND	ND	30
Bromobenzene	ND	ND	ND	30
Bromochloromethane	ND	ND	ND	30
Bromodichloromethane	ND	ND	ND	30
Bromoform	ND	ND	ND	30
Bromomethane	ND	ND	ND	30
Carbon Disulfide	ND	ND	ND	30
Carbon tetrachloride	ND	ND	ND	30
Chlorobenzene	ND	ND	ND	30
Chloroethane	ND	ND	ND	30
Chloroform	ND	ND	ND	30
Chloromethane	ND	ND	ND	30
Dibromochloromethane	ND	ND	ND	30
Dibromomethane	ND	ND	ND	30
Dichlorodifluoromethane	ND	ND	ND	30
Ethyl Ether	ND	ND	ND	30
Ethylbenzene	ND	ND	ND	30
Hexachlorobutadiene	ND	ND	ND	30
Isopropylbenzene	ND	ND	ND	30
M/P Xylene	ND	ND	ND	30
Methyl-t-Butyl Ether	ND	ND	ND	30

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Methylene Chloride	ND	ND	ND	30
N-Butylbenzene	ND	ND	ND	30
N-Propylbenzene	ND	ND	ND	30
Naphthalene	ND	ND	ND	30
Ortho Xylene	ND	ND	ND	30
Para-Isopropyltoluene	ND	ND	ND	30
Sec-Butylbenzene	ND	ND	ND	30
Styrene	ND	ND	ND	30
Tert-Butylbenzene	ND	ND	ND	30
Tetrachloroethylene	ND	ND	ND	30
Tetrahydrofuran	ND	ND	ND	30
Toluene	ND	ND	ND	30
Trans-1,2-Dichloroethylene	ND	ND	ND	30
Trichloroethylene	64	65	1.55	30
Trichlorofluoromethane	ND	ND	ND	30
Vinyl Acetate	ND	ND	ND	30
Vinyl Chloride	ND	ND	ND	30
c-1,3-dichloropropene	ND	ND	ND	30
cis-1,2-Dichloroethylene	ND	ND	ND	30
t-1,3-Dichloropropene	ND	ND	ND	30

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Fortified Blank (LFB) Results

Commerce Street Plume - Williston, VT

PARAMETER	LFB AMOUNT SPIKED ug/mL	LFB RESULT ug/mL	LFB RECOVERY %	QC LIMITS %
1,1,1,2-Tetrachloroethane	20	19	95	79 - 136
1,1,1-Trichloroethane	20	19	95	75 - 146
1,1,2,2-Tetrachloroethane	20	19	95	62 - 141
1,1,2-Trichloro-1,2,2-Trifluoroeth	20	18	90	56 - 130
1,1,2-Trichloroethane	20	19	95	75 - 138
1,1-Dichloroethylene	20	19	95	75 - 136
1,1-Dichloropropene	20	19	95	77 - 137
1,1-dichloroethane	20	19	95	76 - 142
1,2,3-Trichlorobenzene	20	20	100	64 - 143
1,2,3-Trichloropropane	20	19	95	66 - 133
1,2,4-Trichlorobenzene	20	20	100	80 - 131
1,2,4-Trimethylbenzene	20	20	100	74 - 155
1,2-Dibromo-3-Chloropropane	20	20	100	37 - 139
1,2-Dibromoethane	20	19	95	72 - 135
1,2-Dichlorobenzene	20	20	100	85 - 128
1,2-Dichloroethane	20	19	95	74 - 138
1,2-Dichloropropane	20	19	95	83 - 124
1,3,5-Trimethylbenzene	20	20	100	80 - 145
1,3-Dichlorobenzene	20	19	95	84 - 130
1,3-Dichloropropane	20	19	95	77 - 129
1,4-Dichlorobenzene	20	19	95	82 - 128
2,2-Dichloropropane	20	21	105	32 - 171
2-Butanone (MEK)	20	22	110	38 - 179
2-Chlorotoluene	20	19	95	78 - 134
2-Hexanone	20	22	110	45 - 158
2-Propanone (acetone)	20	22	110	14 - 209
4-Chlorotoluene	20	19	95	75 - 144
4-Methyl-2-Pentanone(MIBK)	20	22	110	40 - 144
Acrylonitrile	20	19	95	52 - 154
Benzene	20	19	95	83 - 130
Bromobenzene	20	19	95	85 - 126
Bromochloromethane	20	19	95	69 - 137
Bromodichloromethane	20	19	95	70 - 143
Bromoform	20	18	90	51 - 136
Bromomethane	20	20	100	65 - 140
Carbon Disulfide	20	20	100	68 - 140
Carbon tetrachloride	20	18	90	70 - 144
Chlorobenzene	20	19	95	84 - 131
Chloroethane	20	19	95	70 - 134
Chloroform	20	19	95	76 - 141
Chloromethane	20	19	95	63 - 123
Dibromochloromethane	20	19	95	39 - 154
Dibromomethane	20	19	95	79 - 124
Dichlorodifluoromethane	20	18	90	37 - 117
Ethyl Ether	20	20	100	67 - 140
Ethylbenzene	20	19	95	81 - 133
Hexachlorobutadiene	20	20	100	68 - 146
Isopropylbenzene	20	20	100	78 - 137
M/P Xylene	20	39	195	68 - 155
Methyl-t-Butyl Ether	20	21	105	63 - 144
Methylene Chloride	20	19	95	75 - 140
N-Butylbenzene	20	21	105	69 - 147
N-Propylbenzene	20	20	100	76 - 138

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NEW ENGLAND LABORATORY

Naphthalene	20	21	105	53 - 155
Ortho Xylene	20	20	100	85 - 135
Para-Isopropyltoluene	20	20	100	77 - 141
Sec-Butylbenzene	20	20	100	80 - 141
Styrene	20	20	100	82 - 139
Tert-Butylbenzene	20	20	100	75 - 144
Tetrachloroethylene	20	18	90	32 - 173
Tetrahydrofuran	20	19	95	47 - 149
Toluene	20	19	95	85 - 134
Trans-1,2-Dichloroethylene	20	19	95	80 - 138
Trichloroethylene	20	19	95	76 - 135
Trichlorofluoromethane	20	19	95	60 - 149
Vinyl Acetate	20	37	185	38 - 187
Vinyl Chloride	20	20	100	66 - 133
c-1,3-dichloropropene	20	20	100	68 - 149
cis-1,2-Dichloroethylene	20	19	95	76 - 143
t-1,3-Dichloropropene	20	20	100	62 - 160

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED DUPLICATE (LFB Dup) RECOVERY

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	20	100	5	50
1,1,1-Trichloroethane	19	95	0	50
1,1,2,2-Tetrachloroethane	20	100	5	50
1,1,2-Trichloro-1,2,2-Trifluoroetha	20	100	11	50
1,1,2-Trichloroethane	20	100	5	50
1,1-Dichloroethylene	20	100	5	52
1,1-Dichloropropene	19	95	0	50
1,1-dichloroethane	20	100	5	50
1,2,3-Trichlorobenzene	21	105	5	50
1,2,3-Trichloropropane	21	105	10	50
1,2,4-Trichlorobenzene	20	100	0	50
1,2,4-Trimethylbenzene	20	100	0	50
1,2-Dibromo-3-Chloropropane	21	105	5	50
1,2-Dibromoethane	20	100	5	50
1,2-Dichlorobenzene	20	100	0	50
1,2-Dichloroethane	19	95	0	50
1,2-Dichloropropane	19	95	0	50
1,3,5-Trimethylbenzene	20	100	0	50
1,3-Dichlorobenzene	19	95	0	50
1,3-Dichloropropane	19	95	0	50
1,4-Dichlorobenzene	19	95	0	50
2,2-Dichloropropane	19	95	10	50
2-Butanone (MEK)	30	150	31	50
2-Chlorotoluene	19	95	0	50
2-Hexanone	28	140	24	50
2-Propanone (acetone)	30	150	31	50
4-Chlorotoluene	20	100	5	50
4-Methyl-2-Pentanone(MIBK)	23	115	4	50
Acrylonitrile	22	110	15	50
Benzene	19	95	0	50
Bromobenzene	19	95	0	50
Bromochloromethane	20	100	5	50
Bromodichloromethane	19	95	0	50
Bromoform	18	90	0	50
Bromomethane	20	100	0	50
Carbon Disulfide	21	105	5	50
Carbon tetrachloride	19	95	5	50
Chlorobenzene	20	100	5	34
Chloroethane	20	100	5	50
Chloroform	20	100	5	50
Chloromethane	20	100	5	50
Dibromochloromethane	20	100	5	50
Dibromomethane	20	100	5	50
Dichlorodifluoromethane	20	100	11	50
Ethyl Ether	22	110	10	50
Ethylbenzene	19	95	0	50
Hexachlorobutadiene	20	100	0	50
Isopropylbenzene	20	100	0	50
M/P Xylene	39	195	0	50
Methyl-t-Butyl Ether	21	105	0	50
Methylene Chloride	21	105	10	50
N-Butylbenzene	21	105	0	50
N-Propylbenzene	20	100	0	50
Naphthalene	22	110	5	50
Ortho Xylene	20	100	0	50
Para-Isopropyltoluene	21	105	5	50

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sec-Butylbenzene	21	105	5	50
Styrene	20	100	0	50
Tert-Butylbenzene	20	100	0	50
Tetrachloroethylene	20	100	11	50
Tetrahydrofuran	23	115	19	50
Toluene	19	95	0	50
Trans-1,2-Dichloroethylene	20	100	5	50
Trichloroethylene	19	95	0	27
Trichlorofluoromethane	21	105	10	50
Vinyl Acetate	32	160	15	50
Vinyl Chloride	20	100	0	50
c-1,3-dichloropropene	19	95	5	50
cis-1,2-Dichloroethylene	20	100	5	50
t-1,3-Dichloropropene	19	95	5	50

Samples in Batch: AB20833, AB20834, AB20835, AB20836, AB20837, AB20838, AB20839,
AB20840, AB20842



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

September 06, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080051

Project: Commerce Street Plume - Williston, VT

Analysis: VOAs in Water

Analyst: Dan Curran *DC 9/6/11*

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region 1 SOP, EIASOP-VOAGCMS9.

Samples were analyzed by GC/MS. Samples were introduced to the GC via a Tekmar pre-concentrator and an Archon autosampler. The analysis SOP is based on US EPA Method 8260B, method 5030B, rev 2.0 SW-846, Rev 2.0, 1996. Method 624, 40CFR Part 136 Appendix A, July 1, 1992, and USEPA CLP SOW for Organic Analysis OLM04.2, 1999.

Date Samples Received by the Laboratory: 08/23/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau 9/8/11

Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0388
Date of Collection: 8/19/2011
Date of Extraction: 8/24/11
Date of Analysis: 8/24/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20930
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 20
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	20	
71-55-6	1,1,1-Trichloroethane	ND	20	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	20	
79-00-5	1,1,2-Trichloroethane	ND	20	
75-35-4	1,1-Dichloroethylene	ND	20	
563-58-6	1,1-Dichloropropene	ND	20	
75-34-3	1,1-dichloroethane	ND	20	
87-61-6	1,2,3-Trichlorobenzene	ND	20	
96-18-4	1,2,3-Trichloropropane	ND	20	
120-82-1	1,2,4-Trichlorobenzene	ND	20	
95-63-6	1,2,4-Trimethylbenzene	ND	20	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	20	
106-93-4	1,2-Dibromoethane	ND	20	
95-50-1	1,2-Dichlorobenzene	ND	20	
107-06-2	1,2-Dichloroethane	ND	20	
78-87-5	1,2-Dichloropropane	ND	20	
108-67-8	1,3,5-Trimethylbenzene	ND	20	
541-73-1	1,3-Dichlorobenzene	ND	20	
142-28-9	1,3-Dichloropropane	ND	20	
106-46-7	1,4-Dichlorobenzene	ND	20	
594-20-7	2,2-Dichloropropane	ND	20	
78-93-3	2-Butanone (MEK)	ND	20	
95-49-8	2-Chlorotoluene	ND	20	
591-78-6	2-Hexanone	ND	20	
67-64-1	2-Propanone (acetone)	ND	20	
106-43-4	4-Chlorotoluene	ND	20	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	20	
107-13-1	Acrylonitrile	ND	20	
71-43-2	Benzene	ND	20	
108-86-1	Bromobenzene	ND	20	
74-97-5	Bromochloromethane	ND	20	
75-27-4	Bromodichloromethane	ND	20	
75-25-2	Bromoform	ND	20	
74-83-9	Bromomethane	ND	20	
75-15-0	Carbon Disulfide	ND	20	
56-23-5	Carbon tetrachloride	ND	20	
108-90-7	Chlorobenzene	ND	20	
75-00-3	Chloroethane	ND	20	

67-66-3	Chloroform	ND	20
74-87-3	Chloromethane	ND	20
124-48-1	Dibromochloromethane	ND	20
74-95-3	Dibromomethane	ND	20
75-71-8	Dichlorodifluoromethane	ND	20
60-29-7	Ethyl Ether	ND	20
100-41-4	Ethylbenzene	ND	20
87-68-3	Hexachlorobutadiene	ND	20
98-82-8	Isopropylbenzene	ND	20
108-38-3/106-42-	M/P Xylene	ND	40
1634-04-4	Methyl-t-Butyl Ether	ND	20
75-09-2	Methylene Chloride	ND	20
104-51-8	N-Butylbenzene	ND	20
103-65-1	N-Propylbenzene	ND	20
91-20-3	Naphthalene	ND	20
95-47-6	Ortho Xylene	ND	20
99-87-6	Para-Isopropyltoluene	ND	20
135-98-8	Sec-Butylbenzene	ND	20
100-42-5	Styrene	ND	20
98-06-6	Tert-Butylbenzene	ND	20
127-18-4	Tetrachloroethylene	ND	20
109-99-9	Tetrahydrofuran	ND	20
108-88-3	Toluene	ND	20
156-60-5	Trans-1,2-Dichloroethylene	ND	20
79-01-6	Trichloroethylene	1300	20
75-69-4	Trichlorofluoromethane	ND	20
108-05-4	Vinyl Acetate	ND	20
75-01-4	Vinyl Chloride	ND	20
10061-01-5	c-1,3-dichloropropene	ND	20
156-59-2	cis-1,2-Dichloroethylene	ND	20
10061-02-6	t-1,3-Dichloropropene	ND	20

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	110	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0390
Date of Collection: 8/22/2011
Date of Extraction: 8/24/11
Date of Analysis: 8/24/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20931
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 10
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	10	
71-55-6	1,1,1-Trichloroethane	ND	10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	
79-00-5	1,1,2-Trichloroethane	ND	10	
75-35-4	1,1-Dichloroethylene	ND	10	
563-58-6	1,1-Dichloropropene	ND	10	
75-34-3	1,1-dichloroethane	ND	10	
87-61-6	1,2,3-Trichlorobenzene	ND	10	
96-18-4	1,2,3-Trichloropropane	ND	10	
120-82-1	1,2,4-Trichlorobenzene	ND	10	
95-63-6	1,2,4-Trimethylbenzene	ND	10	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	10	
106-93-4	1,2-Dibromoethane	ND	10	
95-50-1	1,2-Dichlorobenzene	ND	10	
107-06-2	1,2-Dichloroethane	ND	10	
78-87-5	1,2-Dichloropropane	ND	10	
108-67-8	1,3,5-Trimethylbenzene	ND	10	
541-73-1	1,3-Dichlorobenzene	ND	10	
142-28-9	1,3-Dichloropropane	ND	10	
106-46-7	1,4-Dichlorobenzene	ND	10	
594-20-7	2,2-Dichloropropane	ND	10	
78-93-3	2-Butanone (MEK)	ND	10	
95-49-8	2-Chlorotoluene	ND	10	
591-78-6	2-Hexanone	ND	10	
67-64-1	2-Propanone (acetone)	ND	10	
106-43-4	4-Chlorotoluene	ND	10	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	10	
107-13-1	Acrylonitrile	ND	10	
71-43-2	Benzene	ND	10	
108-86-1	Bromobenzene	ND	10	
74-97-5	Bromochloromethane	ND	10	
75-27-4	Bromodichloromethane	ND	10	
75-25-2	Bromoform	ND	10	
74-83-9	Bromomethane	ND	10	
75-15-0	Carbon Disulfide	ND	10	
56-23-5	Carbon tetrachloride	ND	10	
108-90-7	Chlorobenzene	ND	10	
75-00-3	Chloroethane	ND	10	

67-66-3	Chloroform	ND	10
74-87-3	Chloromethane	ND	10
124-48-1	Dibromochloromethane	ND	10
74-95-3	Dibromomethane	ND	10
75-71-8	Dichlorodifluoromethane	ND	10
60-29-7	Ethyl Ether	ND	10
100-41-4	Ethylbenzene	ND	10
87-68-3	Hexachlorobutadiene	ND	10
98-82-8	Isopropylbenzene	ND	10
108-38-3/106-42-	M/P Xylene	ND	20
1634-04-4	Methyl-t-Butyl Ether	ND	10
75-09-2	Methylene Chloride	ND	10
104-51-8	N-Butylbenzene	ND	10
103-65-1	N-Propylbenzene	ND	10
91-20-3	Naphthalene	ND	10
95-47-6	Ortho Xylene	ND	10
99-87-6	Para-Isopropyltoluene	ND	10
135-98-8	Sec-Butylbenzene	ND	10
100-42-5	Styrene	ND	10
98-06-6	Tert-Butylbenzene	ND	10
127-18-4	Tetrachloroethylene	ND	10
109-99-9	Tetrahydrofuran	ND	10
108-88-3	Toluene	ND	10
156-60-5	Trans-1,2-Dichloroethylene	ND	10
79-01-6	Trichloroethylene	380	10
75-69-4	Trichlorofluoromethane	ND	10
108-05-4	Vinyl Acetate	ND	10
75-01-4	Vinyl Chloride	ND	10
10061-01-5	c-1,3-dichloropropene	ND	10
156-59-2	cis-1,2-Dichloroethylene	ND	10
10061-02-6	t-1,3-Dichloropropene	ND	10

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	109	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Blank for \$VOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	8/24/11	Volume Purged:	5.0 mL
Date of Analysis:	8/24/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	106	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments: Blank associated with samples AB20930, AB20931, AB20933, AB20935, AB20936, AB20937, AB20941, AB20942 and AB20939.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0391
Date of Collection: 8/22/2011
Date of Extraction: 8/24/11
Date of Analysis: 8/24/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20932
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	1.4	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	11	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	1.0	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	107	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	96	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0392	Lab Sample ID:	AB20933
Date of Collection:	8/22/2011	Matrix:	GW
Date of Extraction:	8/24/11	Volume Purged:	5 mL
Date of Analysis:	8/24/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	20
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	20	
71-55-6	1,1,1-Trichloroethane	ND	20	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	20	
79-00-5	1,1,2-Trichloroethane	ND	20	
75-35-4	1,1-Dichloroethylene	ND	20	
563-58-6	1,1-Dichloropropene	ND	20	
75-34-3	1,1-dichloroethane	ND	20	
87-61-6	1,2,3-Trichlorobenzene	ND	20	
96-18-4	1,2,3-Trichloropropane	ND	20	
120-82-1	1,2,4-Trichlorobenzene	ND	20	
95-63-6	1,2,4-Trimethylbenzene	ND	20	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	20	
106-93-4	1,2-Dibromoethane	ND	20	
95-50-1	1,2-Dichlorobenzene	ND	20	
107-06-2	1,2-Dichloroethane	ND	20	
78-87-5	1,2-Dichloropropane	ND	20	
108-67-8	1,3,5-Trimethylbenzene	ND	20	
541-73-1	1,3-Dichlorobenzene	ND	20	
142-28-9	1,3-Dichloropropane	ND	20	
106-46-7	1,4-Dichlorobenzene	ND	20	
594-20-7	2,2-Dichloropropane	ND	20	
78-93-3	2-Butanone (MEK)	ND	20	
95-49-8	2-Chlorotoluene	ND	20	
591-78-6	2-Hexanone	ND	20	
67-64-1	2-Propanone (acetone)	ND	20	
106-43-4	4-Chlorotoluene	ND	20	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	20	
107-13-1	Acrylonitrile	ND	20	
71-43-2	Benzene	ND	20	
108-86-1	Bromobenzene	ND	20	
74-97-5	Bromochloromethane	ND	20	
75-27-4	Bromodichloromethane	ND	20	
75-25-2	Bromoform	ND	20	
74-83-9	Bromomethane	ND	20	
75-15-0	Carbon Disulfide	ND	20	
56-23-5	Carbon tetrachloride	ND	20	
108-90-7	Chlorobenzene	ND	20	
75-00-3	Chloroethane	ND	20	

67-66-3	Chloroform	ND	20
74-87-3	Chloromethane	ND	20
124-48-1	Dibromochloromethane	ND	20
74-95-3	Dibromomethane	ND	20
75-71-8	Dichlorodifluoromethane	ND	20
60-29-7	Ethyl Ether	ND	20
100-41-4	Ethylbenzene	ND	20
87-68-3	Hexachlorobutadiene	ND	20
98-82-8	Isopropylbenzene	ND	20
108-38-3/106-42-	M/P Xylene	ND	40
1634-04-4	Methyl-t-Butyl Ether	ND	20
75-09-2	Methylene Chloride	ND	20
104-51-8	N-Butylbenzene	ND	20
103-65-1	N-Propylbenzene	ND	20
91-20-3	Naphthalene	ND	20
95-47-6	Ortho Xylene	ND	20
99-87-6	Para-Isopropyltoluene	ND	20
135-98-8	Sec-Butylbenzene	ND	20
100-42-5	Styrene	ND	20
98-06-6	Tert-Butylbenzene	ND	20
127-18-4	Tetrachloroethylene	ND	20
109-99-9	Tetrahydrofuran	ND	20
108-88-3	Toluene	ND	20
156-60-5	Trans-1,2-Dichloroethylene	ND	20
79-01-6	Trichloroethylene	740	20
75-69-4	Trichlorofluoromethane	ND	20
108-05-4	Vinyl Acetate	ND	20
75-01-4	Vinyl Chloride	ND	20
10061-01-5	c-1,3-dichloropropene	ND	20
156-59-2	cis-1,2-Dichloroethylene	ND	20
10061-02-6	t-1,3-Dichloropropene	ND	20

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	110	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0394	Lab Sample ID:	AB20934
Date of Collection:	8/22/2011	Matrix:	GW
Date of Extraction:	9/1/11	Volume Purged:	5 mL
Date of Analysis:	9/1/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	250
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	250	
71-55-6	1,1,1-Trichloroethane	ND	250	
79-34-5	1,1,2,2-Tetrachloroethane	ND	250	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	250	
79-00-5	1,1,2-Trichloroethane	ND	250	
75-35-4	1,1-Dichloroethylene	ND	250	
563-58-6	1,1-Dichloropropene	ND	250	
75-34-3	1,1-dichloroethane	ND	250	
87-61-6	1,2,3-Trichlorobenzene	ND	250	
96-18-4	1,2,3-Trichloropropane	ND	250	
120-82-1	1,2,4-Trichlorobenzene	ND	250	
95-63-6	1,2,4-Trimethylbenzene	ND	250	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	250	
106-93-4	1,2-Dibromoethane	ND	250	
95-50-1	1,2-Dichlorobenzene	ND	250	
107-06-2	1,2-Dichloroethane	ND	250	
78-87-5	1,2-Dichloropropane	ND	250	
108-67-8	1,3,5-Trimethylbenzene	ND	250	
541-73-1	1,3-Dichlorobenzene	ND	250	
142-28-9	1,3-Dichloropropane	ND	250	
106-46-7	1,4-Dichlorobenzene	ND	250	
594-20-7	2,2-Dichloropropane	ND	250	
78-93-3	2-Butanone (MEK)	ND	250	
95-49-8	2-Chlorotoluene	ND	250	
591-78-6	2-Hexanone	ND	250	
67-64-1	2-Propanone (acetone)	ND	250	
106-43-4	4-Chlorotoluene	ND	250	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	250	
107-13-1	Acrylonitrile	ND	250	
71-43-2	Benzene	ND	250	
108-86-1	Bromobenzene	ND	250	
74-97-5	Bromochloromethane	ND	250	
75-27-4	Bromodichloromethane	ND	250	
75-25-2	Bromoform	ND	250	
74-83-9	Bromomethane	ND	250	
75-15-0	Carbon Disulfide	ND	250	
56-23-5	Carbon tetrachloride	ND	250	
108-90-7	Chlorobenzene	ND	250	
75-00-3	Chloroethane	ND	250	

67-66-3	Chloroform	ND	250
74-87-3	Chloromethane	ND	250
124-48-1	Dibromochloromethane	ND	250
74-95-3	Dibromomethane	ND	250
75-71-8	Dichlorodifluoromethane	ND	250
60-29-7	Ethyl Ether	ND	250
100-41-4	Ethylbenzene	ND	250
87-68-3	Hexachlorobutadiene	ND	250
98-82-8	Isopropylbenzene	ND	250
108-38-3/106-42-	M/P Xylene	ND	500
1634-04-4	Methyl-t-Butyl Ether	ND	250
75-09-2	Methylene Chloride	ND	250
104-51-8	N-Butylbenzene	ND	250
103-65-1	N-Propylbenzene	ND	250
91-20-3	Naphthalene	ND	250
95-47-6	Ortho Xylene	ND	250
99-87-6	Para-Isopropyltoluene	ND	250
135-98-8	Sec-Butylbenzene	ND	250
100-42-5	Styrene	ND	250
98-06-6	Tert-Butylbenzene	ND	250
127-18-4	Tetrachloroethylene	ND	250
109-99-9	Tetrahydrofuran	ND	250
108-88-3	Toluene	ND	250
156-60-5	Trans-1,2-Dichloroethylene	ND	250
79-01-6	Trichloroethylene	13000	250
75-69-4	Trichlorofluoromethane	ND	250
108-05-4	Vinyl Acetate	ND	250
75-01-4	Vinyl Chloride	ND	250
10061-01-5	c-1,3-dichloropropene	ND	250
156-59-2	cis-1,2-Dichloroethylene	ND	250
10061-02-6	t-1,3-Dichloropropene	ND	250

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	110	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Blank for \$VOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	9/1/11	Volume Purged:	5.0 mL
Date of Analysis:	9/1/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	108	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments: Blank associated with samples AB20934, AB20943, AB20944, AB20945, AB20946.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0395
Date of Collection: 8/22/2011
Date of Extraction: 8/24/11
Date of Analysis: 8/24/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20935
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 50
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	
71-55-6	1,1,1-Trichloroethane	ND	50	
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	
79-00-5	1,1,2-Trichloroethane	ND	50	
75-35-4	1,1-Dichloroethylene	ND	50	
563-58-6	1,1-Dichloropropene	ND	50	
75-34-3	1,1-dichloroethane	ND	50	
87-61-6	1,2,3-Trichlorobenzene	ND	50	
96-18-4	1,2,3-Trichloropropane	ND	50	
120-82-1	1,2,4-Trichlorobenzene	ND	50	
95-63-6	1,2,4-Trimethylbenzene	ND	50	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	50	
106-93-4	1,2-Dibromoethane	ND	50	
95-50-1	1,2-Dichlorobenzene	ND	50	
107-06-2	1,2-Dichloroethane	ND	50	
78-87-5	1,2-Dichloropropane	ND	50	
108-67-8	1,3,5-Trimethylbenzene	ND	50	
541-73-1	1,3-Dichlorobenzene	ND	50	
142-28-9	1,3-Dichloropropane	ND	50	
106-46-7	1,4-Dichlorobenzene	ND	50	
594-20-7	2,2-Dichloropropane	ND	50	
78-93-3	2-Butanone (MEK)	ND	50	
95-49-8	2-Chlorotoluene	ND	50	
591-78-6	2-Hexanone	ND	50	
67-64-1	2-Propanone (acetone)	ND	50	
106-43-4	4-Chlorotoluene	ND	50	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	50	
107-13-1	Acrylonitrile	ND	50	
71-43-2	Benzene	ND	50	
108-86-1	Bromobenzene	ND	50	
74-97-5	Bromochloromethane	ND	50	
75-27-4	Bromodichloromethane	ND	50	
75-25-2	Bromoform	ND	50	
74-83-9	Bromomethane	ND	50	
75-15-0	Carbon Disulfide	ND	50	
56-23-5	Carbon tetrachloride	ND	50	
108-90-7	Chlorobenzene	ND	50	
75-00-3	Chloroethane	ND	50	

67-66-3	Chloroform	ND	50
74-87-3	Chloromethane	ND	50
124-48-1	Dibromochloromethane	ND	50
74-95-3	Dibromomethane	ND	50
75-71-8	Dichlorodifluoromethane	ND	50
60-29-7	Ethyl Ether	ND	50
100-41-4	Ethylbenzene	ND	50
87-68-3	Hexachlorobutadiene	ND	50
98-82-8	Isopropylbenzene	ND	50
108-38-3/106-42-	M/P Xylene	ND	100
1634-04-4	Methyl-t-Butyl Ether	ND	50
75-09-2	Methylene Chloride	ND	50
104-51-8	N-Butylbenzene	ND	50
103-65-1	N-Propylbenzene	ND	50
91-20-3	Naphthalene	ND	50
95-47-6	Ortho Xylene	ND	50
99-87-6	Para-Isopropyltoluene	ND	50
135-98-8	Sec-Butylbenzene	ND	50
100-42-5	Styrene	ND	50
98-06-6	Tert-Butylbenzene	ND	50
127-18-4	Tetrachloroethylene	ND	50
109-99-9	Tetrahydrofuran	ND	50
108-88-3	Toluene	ND	50
156-60-5	Trans-1,2-Dichloroethylene	ND	50
79-01-6	Trichloroethylene	3600	50
75-69-4	Trichlorofluoromethane	ND	50
108-05-4	Vinyl Acetate	ND	50
75-01-4	Vinyl Chloride	ND	50
10061-01-5	c-1,3-dichloropropene	ND	50
156-59-2	cis-1,2-Dichloroethylene	ND	50
10061-02-6	t-1,3-Dichloropropene	ND	50

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	111	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0396	Lab Sample ID:	AB20936
Date of Collection:	8/22/2011	Matrix:	GW
Date of Extraction:	8/24/11	Volume Purged:	5 mL
Date of Analysis:	8/24/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	20
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	20	
71-55-6	1,1,1-Trichloroethane	ND	20	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	20	
79-00-5	1,1,2-Trichloroethane	ND	20	
75-35-4	1,1-Dichloroethylene	ND	20	
563-58-6	1,1-Dichloropropene	ND	20	
75-34-3	1,1-dichloroethane	ND	20	
87-61-6	1,2,3-Trichlorobenzene	ND	20	
96-18-4	1,2,3-Trichloropropane	ND	20	
120-82-1	1,2,4-Trichlorobenzene	ND	20	
95-63-6	1,2,4-Trimethylbenzene	ND	20	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	20	
106-93-4	1,2-Dibromoethane	ND	20	
95-50-1	1,2-Dichlorobenzene	ND	20	
107-06-2	1,2-Dichloroethane	ND	20	
78-87-5	1,2-Dichloropropane	ND	20	
108-67-8	1,3,5-Trimethylbenzene	ND	20	
541-73-1	1,3-Dichlorobenzene	ND	20	
142-28-9	1,3-Dichloropropane	ND	20	
106-46-7	1,4-Dichlorobenzene	ND	20	
594-20-7	2,2-Dichloropropane	ND	20	
78-93-3	2-Butanone (MEK)	ND	20	
95-49-8	2-Chlorotoluene	ND	20	
591-78-6	2-Hexanone	ND	20	
67-64-1	2-Propanone (acetone)	ND	20	
106-43-4	4-Chlorotoluene	ND	20	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	20	
107-13-1	Acrylonitrile	ND	20	
71-43-2	Benzene	ND	20	
108-86-1	Bromobenzene	ND	20	
74-97-5	Bromochloromethane	ND	20	
75-27-4	Bromodichloromethane	ND	20	
75-25-2	Bromoform	ND	20	
74-83-9	Bromomethane	ND	20	
75-15-0	Carbon Disulfide	ND	20	
56-23-5	Carbon tetrachloride	ND	20	
108-90-7	Chlorobenzene	ND	20	
75-00-3	Chloroethane	ND	20	

67-66-3	Chloroform	ND	20
74-87-3	Chloromethane	ND	20
124-48-1	Dibromochloromethane	ND	20
74-95-3	Dibromomethane	ND	20
75-71-8	Dichlorodifluoromethane	ND	20
60-29-7	Ethyl Ether	ND	20
100-41-4	Ethylbenzene	ND	20
87-68-3	Hexachlorobutadiene	ND	20
98-82-8	Isopropylbenzene	ND	20
108-38-3/106-42-	M/P Xylene	ND	40
1634-04-4	Methyl-t-Butyl Ether	ND	20
75-09-2	Methylene Chloride	ND	20
104-51-8	N-Butylbenzene	ND	20
103-65-1	N-Propylbenzene	ND	20
91-20-3	Naphthalene	ND	20
95-47-6	Ortho Xylene	ND	20
99-87-6	Para-Isopropyltoluene	ND	20
135-98-8	Sec-Butylbenzene	ND	20
100-42-5	Styrene	ND	20
98-06-6	Tert-Butylbenzene	ND	20
127-18-4	Tetrachloroethylene	ND	20
109-99-9	Tetrahydrofuran	ND	20
108-88-3	Toluene	ND	20
156-60-5	Trans-1,2-Dichloroethylene	ND	20
79-01-6	Trichloroethylene	770	20
75-69-4	Trichlorofluoromethane	ND	20
108-05-4	Vinyl Acetate	ND	20
75-01-4	Vinyl Chloride	ND	20
10061-01-5	c-1,3-dichloropropene	ND	20
156-59-2	cis-1,2-Dichloroethylene	ND	20
10061-02-6	t-1,3-Dichloropropene	ND	20

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0397
Date of Collection: 8/22/2011
Date of Extraction: 8/24/11
Date of Analysis: 8/24/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20937
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	3.0	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	96	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0402
Date of Collection: 8/22/2011
Date of Extraction: 8/25/11
Date of Analysis: 8/25/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20939
Matrix: PE Water
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	27	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	44	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	81	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	51	1.0	
120-82-1	1,2,4-Trichlorobenzene	42	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	17	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	26	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	52	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	37	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	84	1.0	
67-64-1	2-Propanone (acetone)	43	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	16	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	45	1.0	
75-27-4	Bromodichloromethane	43	1.0	
75-25-2	Bromoform	23	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	50	1.0	
75-00-3	Chloroethane	82	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	30	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	45	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	54	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	20	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	31	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	19	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	51	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	27	1.0
10061-02-6	t-1,3-Dichloropropene	18	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	96	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0403
Date of Collection: 8/18/2011
Date of Extraction: 8/24/11
Date of Analysis: 8/24/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20940
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	11	1.0	J
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	7.4	1.0	J
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	104	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments: Acetone and MEK did not meet the acceptable QC criteria for continuous calibration and are qualified with a J.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Blank for \$VOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	8/24/11	Volume Purged:	5.0 mL
Date of Analysis:	8/24/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	102	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	96	78 - 111

Comments: Blank associated with samples AB20940, AB20932, AB20932 Dup and AB20932 MS/MSD.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0404
Date of Collection: 8/22/2011
Date of Extraction: 8/24/11
Date of Analysis: 8/24/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20941
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	113	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	93	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0405	Lab Sample ID:	AB20942
Date of Collection:	8/22/2011	Matrix:	GW
Date of Extraction:	8/24/11	Volume Purged:	5 mL
Date of Analysis:	8/24/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	4.8	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	93	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0406
Date of Collection: 8/22/2011
Date of Extraction: 9/1/11
Date of Analysis: 9/1/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20943
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 100
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	
71-55-6	1,1,1-Trichloroethane	ND	100	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	100	
79-00-5	1,1,2-Trichloroethane	ND	100	
75-35-4	1,1-Dichloroethylene	ND	100	
563-58-6	1,1-Dichloropropene	ND	100	
75-34-3	1,1-dichloroethane	ND	100	
87-61-6	1,2,3-Trichlorobenzene	ND	100	
96-18-4	1,2,3-Trichloropropane	ND	100	
120-82-1	1,2,4-Trichlorobenzene	ND	100	
95-63-6	1,2,4-Trimethylbenzene	ND	100	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	100	
106-93-4	1,2-Dibromoethane	ND	100	
95-50-1	1,2-Dichlorobenzene	ND	100	
107-06-2	1,2-Dichloroethane	ND	100	
78-87-5	1,2-Dichloropropane	ND	100	
108-67-8	1,3,5-Trimethylbenzene	ND	100	
541-73-1	1,3-Dichlorobenzene	ND	100	
142-28-9	1,3-Dichloropropane	ND	100	
106-46-7	1,4-Dichlorobenzene	ND	100	
594-20-7	2,2-Dichloropropane	ND	100	
78-93-3	2-Butanone (MEK)	ND	100	
95-49-8	2-Chlorotoluene	ND	100	
591-78-6	2-Hexanone	ND	100	
67-64-1	2-Propanone (acetone)	ND	100	
106-43-4	4-Chlorotoluene	ND	100	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	100	
107-13-1	Acrylonitrile	ND	100	
71-43-2	Benzene	ND	100	
108-86-1	Bromobenzene	ND	100	
74-97-5	Bromochloromethane	ND	100	
75-27-4	Bromodichloromethane	ND	100	
75-25-2	Bromoform	ND	100	
74-83-9	Bromomethane	ND	100	
75-15-0	Carbon Disulfide	ND	100	
56-23-5	Carbon tetrachloride	ND	100	
108-90-7	Chlorobenzene	ND	100	
75-00-3	Chloroethane	ND	100	

67-66-3	Chloroform	ND	100
74-87-3	Chloromethane	ND	100
124-48-1	Dibromochloromethane	ND	100
74-95-3	Dibromomethane	ND	100
75-71-8	Dichlorodifluoromethane	ND	100
60-29-7	Ethyl Ether	ND	100
100-41-4	Ethylbenzene	ND	100
87-68-3	Hexachlorobutadiene	ND	100
98-82-8	Isopropylbenzene	ND	100
108-38-3/106-42-	M/P Xylene	ND	200
1634-04-4	Methyl-t-Butyl Ether	ND	100
75-09-2	Methylene Chloride	ND	100
104-51-8	N-Butylbenzene	ND	100
103-65-1	N-Propylbenzene	ND	100
91-20-3	Naphthalene	ND	100
95-47-6	Ortho Xylene	ND	100
99-87-6	Para-Isopropyltoluene	ND	100
135-98-8	Sec-Butylbenzene	ND	100
100-42-5	Styrene	ND	100
98-06-6	Tert-Butylbenzene	ND	100
127-18-4	Tetrachloroethylene	ND	100
109-99-9	Tetrahydrofuran	ND	100
108-88-3	Toluene	ND	100
156-60-5	Trans-1,2-Dichloroethylene	ND	100
79-01-6	Trichloroethylene	2600	100
75-69-4	Trichlorofluoromethane	ND	100
108-05-4	Vinyl Acetate	ND	100
75-01-4	Vinyl Chloride	ND	100
10061-01-5	c-1,3-dichloropropene	ND	100
156-59-2	cis-1,2-Dichloroethylene	ND	100
10061-02-6	t-1,3-Dichloropropene	ND	100

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0408	Lab Sample ID:	AB20944
Date of Collection:	8/22/2011	Matrix:	GW
Date of Extraction:	9/1/11	Volume Purged:	5 mL
Date of Analysis:	9/1/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	100	
71-55-6	1,1,1-Trichloroethane	ND	100	
79-34-5	1,1,2,2-Tetrachloroethane	ND	100	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	100	
79-00-5	1,1,2-Trichloroethane	ND	100	
75-35-4	1,1-Dichloroethylene	ND	100	
563-58-6	1,1-Dichloropropene	ND	100	
75-34-3	1,1-dichloroethane	ND	100	
87-61-6	1,2,3-Trichlorobenzene	ND	100	
96-18-4	1,2,3-Trichloropropane	ND	100	
120-82-1	1,2,4-Trichlorobenzene	ND	100	
95-63-6	1,2,4-Trimethylbenzene	ND	100	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	100	
106-93-4	1,2-Dibromoethane	ND	100	
95-50-1	1,2-Dichlorobenzene	ND	100	
107-06-2	1,2-Dichloroethane	ND	100	
78-87-5	1,2-Dichloropropane	ND	100	
108-67-8	1,3,5-Trimethylbenzene	ND	100	
541-73-1	1,3-Dichlorobenzene	ND	100	
142-28-9	1,3-Dichloropropane	ND	100	
106-46-7	1,4-Dichlorobenzene	ND	100	
594-20-7	2,2-Dichloropropane	ND	100	
78-93-3	2-Butanone (MEK)	ND	100	
95-49-8	2-Chlorotoluene	ND	100	
591-78-6	2-Hexanone	ND	100	
67-64-1	2-Propanone (acetone)	ND	100	
106-43-4	4-Chlorotoluene	ND	100	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	100	
107-13-1	Acrylonitrile	ND	100	
71-43-2	Benzene	ND	100	
108-86-1	Bromobenzene	ND	100	
74-97-5	Bromochloromethane	ND	100	
75-27-4	Bromodichloromethane	ND	100	
75-25-2	Bromoform	ND	100	
74-83-9	Bromomethane	ND	100	
75-15-0	Carbon Disulfide	ND	100	
56-23-5	Carbon tetrachloride	ND	100	
108-90-7	Chlorobenzene	ND	100	
75-00-3	Chloroethane	ND	100	

67-66-3	Chloroform	ND	100
74-87-3	Chloromethane	ND	100
124-48-1	Dibromochloromethane	ND	100
74-95-3	Dibromomethane	ND	100
75-71-8	Dichlorodifluoromethane	ND	100
60-29-7	Ethyl Ether	ND	100
100-41-4	Ethylbenzene	ND	100
87-68-3	Hexachlorobutadiene	ND	100
98-82-8	Isopropylbenzene	ND	100
108-38-3/106-42-	M/P Xylene	ND	200
1634-04-4	Methyl-t-Butyl Ether	ND	100
75-09-2	Methylene Chloride	ND	100
104-51-8	N-Butylbenzene	ND	100
103-65-1	N-Propylbenzene	ND	100
91-20-3	Naphthalene	ND	100
95-47-6	Ortho Xylene	ND	100
99-87-6	Para-Isopropyltoluene	ND	100
135-98-8	Sec-Butylbenzene	ND	100
100-42-5	Styrene	ND	100
98-06-6	Tert-Butylbenzene	ND	100
127-18-4	Tetrachloroethylene	ND	100
109-99-9	Tetrahydrofuran	ND	100
108-88-3	Toluene	ND	100
156-60-5	Trans-1,2-Dichloroethylene	ND	100
79-01-6	Trichloroethylene	2500	100
75-69-4	Trichlorofluoromethane	ND	100
108-05-4	Vinyl Acetate	ND	100
75-01-4	Vinyl Chloride	ND	100
10061-01-5	c-1,3-dichloropropene	ND	100
156-59-2	cis-1,2-Dichloroethylene	ND	100
10061-02-6	t-1,3-Dichloropropene	ND	100

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	91	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0409
Date of Collection: 8/22/2011
Date of Extraction: 9/1/11
Date of Analysis: 9/1/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20945
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 250
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	250	
71-55-6	1,1,1-Trichloroethane	ND	250	
79-34-5	1,1,2,2-Tetrachloroethane	ND	250	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	250	
79-00-5	1,1,2-Trichloroethane	ND	250	
75-35-4	1,1-Dichloroethylene	ND	250	
563-58-6	1,1-Dichloropropene	ND	250	
75-34-3	1,1-dichloroethane	ND	250	
87-61-6	1,2,3-Trichlorobenzene	ND	250	
96-18-4	1,2,3-Trichloropropane	ND	250	
120-82-1	1,2,4-Trichlorobenzene	ND	250	
95-63-6	1,2,4-Trimethylbenzene	ND	250	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	250	
106-93-4	1,2-Dibromoethane	ND	250	
95-50-1	1,2-Dichlorobenzene	ND	250	
107-06-2	1,2-Dichloroethane	ND	250	
78-87-5	1,2-Dichloropropane	ND	250	
108-67-8	1,3,5-Trimethylbenzene	ND	250	
541-73-1	1,3-Dichlorobenzene	ND	250	
142-28-9	1,3-Dichloropropane	ND	250	
106-46-7	1,4-Dichlorobenzene	ND	250	
594-20-7	2,2-Dichloropropane	ND	250	
78-93-3	2-Butanone (MEK)	ND	250	
95-49-8	2-Chlorotoluene	ND	250	
591-78-6	2-Hexanone	ND	250	
67-64-1	2-Propanone (acetone)	ND	250	
106-43-4	4-Chlorotoluene	ND	250	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	250	
107-13-1	Acrylonitrile	ND	250	
71-43-2	Benzene	ND	250	
108-86-1	Bromobenzene	ND	250	
74-97-5	Bromochloromethane	ND	250	
75-27-4	Bromodichloromethane	ND	250	
75-25-2	Bromoform	ND	250	
74-83-9	Bromomethane	ND	250	
75-15-0	Carbon Disulfide	ND	250	
56-23-5	Carbon tetrachloride	ND	250	
108-90-7	Chlorobenzene	ND	250	
75-00-3	Chloroethane	ND	250	

67-66-3	Chloroform	ND	250
74-87-3	Chloromethane	ND	250
124-48-1	Dibromochloromethane	ND	250
74-95-3	Dibromomethane	ND	250
75-71-8	Dichlorodifluoromethane	ND	250
60-29-7	Ethyl Ether	ND	250
100-41-4	Ethylbenzene	ND	250
87-68-3	Hexachlorobutadiene	ND	250
98-82-8	Isopropylbenzene	ND	250
108-38-3/106-42-	M/P Xylene	ND	500
1634-04-4	Methyl-t-Butyl Ether	ND	250
75-09-2	Methylene Chloride	ND	250
104-51-8	N-Butylbenzene	ND	250
103-65-1	N-Propylbenzene	ND	250
91-20-3	Naphthalene	ND	250
95-47-6	Ortho Xylene	ND	250
99-87-6	Para-Isopropyltoluene	ND	250
135-98-8	Sec-Butylbenzene	ND	250
100-42-5	Styrene	ND	250
98-06-6	Tert-Butylbenzene	ND	250
127-18-4	Tetrachloroethylene	ND	250
109-99-9	Tetrahydrofuran	ND	250
108-88-3	Toluene	ND	250
156-60-5	Trans-1,2-Dichloroethylene	ND	250
79-01-6	Trichloroethylene	10000	250
75-69-4	Trichlorofluoromethane	ND	250
108-05-4	Vinyl Acetate	ND	250
75-01-4	Vinyl Chloride	ND	250
10061-01-5	c-1,3-dichloropropene	ND	250
156-59-2	cis-1,2-Dichloroethylene	ND	250
10061-02-6	t-1,3-Dichloropropene	ND	250

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	114	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	92	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0410
Date of Collection: 8/22/2011
Date of Extraction: 9/1/11
Date of Analysis: 9/1/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20946
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 20
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	20	
71-55-6	1,1,1-Trichloroethane	ND	20	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	20	
79-00-5	1,1,2-Trichloroethane	ND	20	
75-35-4	1,1-Dichloroethylene	ND	20	
563-58-6	1,1-Dichloropropene	ND	20	
75-34-3	1,1-dichloroethane	ND	20	
87-61-6	1,2,3-Trichlorobenzene	ND	20	
96-18-4	1,2,3-Trichloropropane	ND	20	
120-82-1	1,2,4-Trichlorobenzene	ND	20	
95-63-6	1,2,4-Trimethylbenzene	ND	20	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	20	
106-93-4	1,2-Dibromoethane	ND	20	
95-50-1	1,2-Dichlorobenzene	ND	20	
107-06-2	1,2-Dichloroethane	ND	20	
78-87-5	1,2-Dichloropropane	ND	20	
108-67-8	1,3,5-Trimethylbenzene	ND	20	
541-73-1	1,3-Dichlorobenzene	ND	20	
142-28-9	1,3-Dichloropropane	ND	20	
106-46-7	1,4-Dichlorobenzene	ND	20	
594-20-7	2,2-Dichloropropane	ND	20	
78-93-3	2-Butanone (MEK)	ND	20	
95-49-8	2-Chlorotoluene	ND	20	
591-78-6	2-Hexanone	ND	20	
67-64-1	2-Propanone (acetone)	ND	20	
106-43-4	4-Chlorotoluene	ND	20	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	20	
107-13-1	Acrylonitrile	ND	20	
71-43-2	Benzene	ND	20	
108-86-1	Bromobenzene	ND	20	
74-97-5	Bromochloromethane	ND	20	
75-27-4	Bromodichloromethane	ND	20	
75-25-2	Bromoform	ND	20	
74-83-9	Bromomethane	ND	20	
75-15-0	Carbon Disulfide	ND	20	
56-23-5	Carbon tetrachloride	ND	20	
108-90-7	Chlorobenzene	ND	20	
75-00-3	Chloroethane	ND	20	

67-66-3	Chloroform	ND	20
74-87-3	Chloromethane	ND	20
124-48-1	Dibromochloromethane	ND	20
74-95-3	Dibromomethane	ND	20
75-71-8	Dichlorodifluoromethane	ND	20
60-29-7	Ethyl Ether	ND	20
100-41-4	Ethylbenzene	ND	20
87-68-3	Hexachlorobutadiene	ND	20
98-82-8	Isopropylbenzene	ND	20
108-38-3/106-42-	M/P Xylene	ND	40
1634-04-4	Methyl-t-Butyl Ether	ND	20
75-09-2	Methylene Chloride	ND	20
104-51-8	N-Butylbenzene	ND	20
103-65-1	N-Propylbenzene	ND	20
91-20-3	Naphthalene	ND	20
95-47-6	Ortho Xylene	ND	20
99-87-6	Para-Isopropyltoluene	ND	20
135-98-8	Sec-Butylbenzene	ND	20
100-42-5	Styrene	ND	20
98-06-6	Tert-Butylbenzene	ND	20
127-18-4	Tetrachloroethylene	ND	20
109-99-9	Tetrahydrofuran	ND	20
108-88-3	Toluene	ND	20
156-60-5	Trans-1,2-Dichloroethylene	ND	20
79-01-6	Trichloroethylene	530	20
75-69-4	Trichlorofluoromethane	ND	20
108-05-4	Vinyl Acetate	ND	20
75-01-4	Vinyl Chloride	ND	20
10061-01-5	c-1,3-dichloropropene	ND	20
156-59-2	cis-1,2-Dichloroethylene	ND	20
10061-02-6	t-1,3-Dichloropropene	ND	20

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

VOA MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB20932

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
1,1,1,2-Tetrachloroethane	20.0	ND	20	100	67 - 129
1,1,1-Trichloroethane	20.0	ND	20	100	75 - 139
1,1,2,2-Tetrachloroethane	20.0	ND	20	100	50 - 142
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	ND	24	120	55 - 135
1,1,2-Trichloroethane	20.0	ND	20	100	62 - 142
1,1-Dichloroethylene	20.0	ND	19	95	80 - 138
1,1-Dichloropropene	20.0	ND	20	100	73 - 131
1,1-dichloroethane	20.0	ND	20	100	61 - 152
1,2,3-Trichlorobenzene	20.0	ND	20	100	49 - 143
1,2,3-Trichloropropane	20.0	ND	20	100	53 - 135
1,2,4-Trichlorobenzene	20.0	ND	20	100	63 - 131
1,2,4-Trimethylbenzene	20.0	ND	20	100	79 - 142
1,2-Dibromo-3-Chloropropane	20.0	ND	20	100	28 - 122
1,2-Dibromoethane	20.0	ND	20	100	53 - 139
1,2-Dichlorobenzene	20.0	ND	20	100	74 - 129
1,2-Dichloroethane	20.0	ND	20	100	61 - 142
1,2-Dichloropropane	20.0	ND	19	95	71 - 126
1,3,5-Trimethylbenzene	20.0	ND	20	100	77 - 140
1,3-Dichlorobenzene	20.0	ND	20	100	78 - 127
1,3-Dichloropropane	20.0	ND	20	100	63 - 130
1,4-Dichlorobenzene	20.0	ND	20	100	72 - 131
2,2-Dichloropropane	20.0	ND	21	105	50 - 139
2-Butanone (MEK)	20.0	ND	14	70	29 - 163
2-Chlorotoluene	20.0	ND	20	100	74 - 134
2-Hexanone	20.0	ND	16	80	36 - 141
2-Propanone (acetone)	20.0	ND	11	55	29 - 164
4-Chlorotoluene	20.0	ND	20	100	68 - 141
4-Methyl-2-Pentanone(MIBK)	20.0	ND	20	100	35 - 139
Acrylonitrile	20.0	ND	22	110	42 - 150
Benzene	20.0	ND	20	100	78 - 134
Bromobenzene	20.0	ND	20	100	76 - 126
Bromochloromethane	20.0	ND	20	100	62 - 140
Bromodichloromethane	20.0	ND	20	100	62 - 133
Bromoform	20.0	ND	20	100	31 - 133
Bromomethane	20.0	ND	12	60	58 - 148
Carbon Disulfide	20.0	ND	21	105	66 - 135
Carbon tetrachloride	20.0	ND	19	95	62 - 146
Chlorobenzene	20.0	ND	20	100	74 - 139
Chloroethane	20.0	ND	21	105	65 - 145
Chloroform	20.0	ND	20	100	60 - 144
Chloromethane	20.0	ND	19	95	58 - 134
Dibromochloromethane	20.0	ND	20	100	34 - 140
Dibromomethane	20.0	ND	20	100	67 - 125
Dichlorodifluoromethane	20.0	ND	24	120	30 - 132
Ethyl Ether	20.0	ND	23	115	58 - 145
Ethylbenzene	20.0	ND	20	100	73 - 143
Hexachlorobutadiene	20.0	ND	19	95	56 - 144
Isopropylbenzene	20.0	ND	21	105	73 - 139

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

M/P Xylene	40.0	ND	40	100	79 - 136
Methyl-t-Butyl Ether	20.0	1.4	22	103	50 - 144
Methylene Chloride	20.0	ND	20	100	70 - 144
N-Butylbenzene	20.0	ND	20	100	68 - 143
N-Propylbenzene	20.0	ND	20	100	72 - 149
Naphthalene	20.0	ND	19	95	33 - 154
Ortho Xylene	20.0	ND	20	100	80 - 129
Para-Isopropyltoluene	20.0	ND	21	105	71 - 140
Sec-Butylbenzene	20.0	ND	20	100	75 - 148
Styrene	20.0	ND	20	100	61 - 148
Tert-Butylbenzene	20.0	ND	20	100	71 - 139
Tetrachloroethylene	20.0	ND	18	90	45 - 145
Tetrahydrofuran	20.0	ND	20	100	37 - 143
Toluene	20.0	ND	19	95	77 - 142
Trans-1,2-Dichloroethylene	20.0	ND	20	100	79 - 139
Trichloroethylene	20.0	11	28	85	65 - 143
Trichlorofluoromethane	20.0	ND	23	115	58 - 161
Vinyl Acetate	20.0	ND	44	220	22 - 173
Vinyl Chloride	20.0	ND	21	105	68 - 139
c-1,3-dichloropropene	20.0	ND	21	105	51 - 144
cis-1,2-Dichloroethylene	20.0	1.0	21	100	59 - 154
t-1,3-Dichloropropene	20.0	ND	18	90	47 - 145

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sample ID: AB20932

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	20.0	21	105	5	40
1,1,1-Trichloroethane	20.0	22	110	10	16
1,1,2,2-Tetrachloroethane	20.0	20	100	0	40
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	25	125	4	40
1,1,2-Trichloroethane	20.0	21	105	5	40
1,1-Dichloroethylene	20.0	21	105	10	35
1,1-Dichloropropene	20.0	21	105	5	40
1,1-dichloroethane	20.0	22	110	10	40
1,2,3-Trichlorobenzene	20.0	21	105	5	40
1,2,3-Trichloropropane	20.0	20	100	0	40
1,2,4-Trichlorobenzene	20.0	22	110	10	40
1,2,4-Trimethylbenzene	20.0	22	110	10	40
1,2-Dibromo-3-Chloropropane	20.0	19	95	5	40
1,2-Dibromoethane	20.0	21	105	5	40
1,2-Dichlorobenzene	20.0	21	105	5	40
1,2-Dichloroethane	20.0	20	100	0	23
1,2-Dichloropropane	20.0	21	105	10	40
1,3,5-Trimethylbenzene	20.0	22	110	10	40
1,3-Dichlorobenzene	20.0	21	105	5	40
1,3-Dichloropropane	20.0	21	105	5	40
1,4-Dichlorobenzene	20.0	22	110	10	21
2,2-Dichloropropane	20.0	22	110	5	40
2-Butanone (MEK)	20.0	14	70	0	40
2-Chlorotoluene	20.0	21	105	5	40
2-Hexanone	20.0	16	80	0	40
2-Propanone (acetone)	20.0	11	55	0	40
4-Chlorotoluene	20.0	21	105	5	40
4-Methyl-2-Pentanone(MIBK)	20.0	20	100	0	40
Acrylonitrile	20.0	22	110	0	40
Benzene	20.0	21	105	5	14
Bromobenzene	20.0	22	110	10	40
Bromochloromethane	20.0	21	105	5	40
Bromodichloromethane	20.0	21	105	5	21
Bromoform	20.0	20	100	0	40
Bromomethane	20.0	13	65	8	40
Carbon Disulfide	20.0	23	115	9	40
Carbon tetrachloride	20.0	21	105	10	19
Chlorobenzene	20.0	21	105	5	40
Chloroethane	20.0	22	110	5	40
Chloroform	20.0	21	105	5	16
Chloromethane	20.0	20	100	5	40
Dibromochloromethane	20.0	21	105	5	36
Dibromomethane	20.0	21	105	5	40
Dichlorodifluoromethane	20.0	26	130	8	40
Ethyl Ether	20.0	25	125	8	40
Ethylbenzene	20.0	21	105	5	40
Hexachlorobutadiene	20.0	21	105	10	40
Isopropylbenzene	20.0	22	110	5	40
M/P Xylene	40.0	42	105	5	40
Methyl-t-Butyl Ether	20.0	23	108	5	40
Methylene Chloride	20.0	21	105	5	40
N-Butylbenzene	20.0	22	110	10	40
N-Propylbenzene	20.0	22	110	10	40
Naphthalene	20.0	19	95	0	40

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Ortho Xylene	20.0	22	110	10	40
Para-Isopropyltoluene	20.0	22	110	5	40
Sec-Butylbenzene	20.0	22	110	10	40
Styrene	20.0	22	110	10	40
Tert-Butylbenzene	20.0	22	110	10	40
Tetrachloroethylene	20.0	20	100	11	40
Tetrahydrofuran	20.0	20	100	0	40
Toluene	20.0	20	100	5	40
Trans-1,2-Dichloroethylene	20.0	21	105	5	40
Trichloroethylene	20.0	29	90	6	22
Trichlorofluoromethane	20.0	24	120	4	40
Vinyl Acetate	20.0	45	225	2	40
Vinyl Chloride	20.0	23	115	9	19
c-1,3-dichloropropene	20.0	22	110	5	40
cis-1,2-Dichloroethylene	20.0	22	105	5	40
t-1,3-Dichloropropene	20.0	19	95	5	40

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB20932

PARAMETER	SAMPLE RESULT	SAMPLE DUPLICATE RESULT	PRECISION RPD	QC LIMITS
	ug/L	ug/L	%	
1,1,1,2-Tetrachloroethane	ND	ND	ND	30
1,1,1-Trichloroethane	ND	ND	ND	30
1,1,2,2-Tetrachloroethane	ND	ND	ND	30
1,1,2-Trichloro-1,2,2-Trifluoroeth:	ND	ND	ND	30
1,1,2-Trichloroethane	ND	ND	ND	30
1,1-Dichloroethylene	ND	ND	ND	30
1,1-Dichloropropene	ND	ND	ND	30
1,1-dichloroethane	ND	ND	ND	30
1,2,3-Trichlorobenzene	ND	ND	ND	30
1,2,3-Trichloropropane	ND	ND	ND	30
1,2,4-Trichlorobenzene	ND	ND	ND	30
1,2,4-Trimethylbenzene	ND	ND	ND	30
1,2-Dibromo-3-Chloropropane	ND	ND	ND	30
1,2-Dibromoethane	ND	ND	ND	30
1,2-Dichlorobenzene	ND	ND	ND	30
1,2-Dichloroethane	ND	ND	ND	30
1,2-Dichloropropane	ND	ND	ND	30
1,3,5-Trimethylbenzene	ND	ND	ND	30
1,3-Dichlorobenzene	ND	ND	ND	30
1,3-Dichloropropane	ND	ND	ND	30
1,4-Dichlorobenzene	ND	ND	ND	30
2,2-Dichloropropane	ND	ND	ND	30
2-Butanone (MEK)	ND	ND	ND	30
2-Chlorotoluene	ND	ND	ND	30
2-Hexanone	ND	ND	ND	30
2-Propanone (acetone)	ND	ND	ND	30
4-Chlorotoluene	ND	ND	ND	30
4-Methyl-2-Pentanone(MIBK)	ND	ND	ND	30
Acrylonitrile	ND	ND	ND	30
Benzene	ND	ND	ND	30
Bromobenzene	ND	ND	ND	30
Bromochloromethane	ND	ND	ND	30
Bromodichloromethane	ND	ND	ND	30
Bromoform	ND	ND	ND	30
Bromomethane	ND	ND	ND	30
Carbon Disulfide	ND	ND	ND	30
Carbon tetrachloride	ND	ND	ND	30
Chlorobenzene	ND	ND	ND	30
Chloroethane	ND	ND	ND	30
Chloroform	ND	ND	ND	30
Chloromethane	ND	ND	ND	30
Dibromochloromethane	ND	ND	ND	30
Dibromomethane	ND	ND	ND	30
Dichlorodifluoromethane	ND	ND	ND	30
Ethyl Ether	ND	ND	ND	30
Ethylbenzene	ND	ND	ND	30
Hexachlorobutadiene	ND	ND	ND	30
Isopropylbenzene	ND	ND	ND	30
M/P Xylene	ND	ND	ND	30
Methyl-t-Butyl Ether	1.4	1.4	0.00	30

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Methylene Chloride	ND	ND	ND	30
N-Butylbenzene	ND	ND	ND	30
N-Propylbenzene	ND	ND	ND	30
Naphthalene	ND	ND	ND	30
Ortho Xylene	ND	ND	ND	30
Para-Isopropyltoluene	ND	ND	ND	30
Sec-Butylbenzene	ND	ND	ND	30
Styrene	ND	ND	ND	30
Tert-Butylbenzene	ND	ND	ND	30
Tetrachloroethylene	ND	ND	ND	30
Tetrahydrofuran	ND	ND	ND	30
Toluene	ND	ND	ND	30
Trans-1,2-Dichloroethylene	ND	ND	ND	30
Trichloroethylene	11	11	0.00	30
Trichlorofluoromethane	ND	ND	ND	30
Vinyl Acetate	ND	ND	ND	30
Vinyl Chloride	ND	ND	ND	30
c-1,3-dichloropropene	ND	ND	ND	30
cis-1,2-Dichloroethylene	1.0	ND	ND	30
t-1,3-Dichloropropene	ND	ND	ND	30

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Fortified Blank (LFB) Results

Commerce Street Plume - Williston, VT

PARAMETER	LFB AMOUNT SPIKED ug/mL	LFB RESULT ug/mL	LFB RECOVERY %	QC LIMITS %
1,1,1,2-Tetrachloroethane	20	18	90	79 - 136
1,1,1-Trichloroethane	20	19	95	75 - 146
1,1,2,2-Tetrachloroethane	20	16	80	62 - 141
1,1,2-Trichloro-1,2,2-Trifluoroeth	20	19	95	56 - 130
1,1,2-Trichloroethane	20	18	90	75 - 138
1,1-Dichloroethylene	20	18	90	75 - 136
1,1-Dichloropropene	20	18	90	77 - 137
1,1-dichloroethane	20	18	90	76 - 142
1,2,3-Trichlorobenzene	20	17	85	64 - 143
1,2,3-Trichloropropane	20	17	85	66 - 133
1,2,4-Trichlorobenzene	20	18	90	80 - 131
1,2,4-Trimethylbenzene	20	18	90	74 - 155
1,2-Dibromo-3-Chloropropane	20	16	80	37 - 139
1,2-Dibromoethane	20	17	85	72 - 135
1,2-Dichlorobenzene	20	18	90	85 - 128
1,2-Dichloroethane	20	17	85	74 - 138
1,2-Dichloropropane	20	18	90	83 - 124
1,3,5-Trimethylbenzene	20	18	90	80 - 145
1,3-Dichlorobenzene	20	18	90	84 - 130
1,3-Dichloropropane	20	17	85	77 - 129
1,4-Dichlorobenzene	20	18	90	82 - 128
2,2-Dichloropropane	20	20	100	32 - 171
2-Butanone (MEK)	20	14	70	38 - 179
2-Chlorotoluene	20	18	90	78 - 134
2-Hexanone	20	15	75	45 - 158
2-Propanone (acetone)	20	14	70	14 - 209
4-Chlorotoluene	20	18	90	75 - 144
4-Methyl-2-Pentanone(MIBK)	20	17	85	40 - 144
Acrylonitrile	20	18	90	52 - 154
Benzene	20	18	90	83 - 130
Bromobenzene	20	18	90	85 - 126
Bromochloromethane	20	18	90	69 - 137
Bromodichloromethane	20	18	90	70 - 143
Bromoform	20	18	90	51 - 136
Bromomethane	20	19	95	65 - 140
Carbon Disulfide	20	18	90	68 - 140
Carbon tetrachloride	20	18	90	70 - 144
Chlorobenzene	20	18	90	84 - 131
Chloroethane	20	19	95	70 - 134
Chloroform	20	18	90	76 - 141
Chloromethane	20	18	90	63 - 123
Dibromochloromethane	20	18	90	39 - 154
Dibromomethane	20	18	90	79 - 124
Dichlorodifluoromethane	20	19	95	37 - 117
Ethyl Ether	20	17	85	67 - 140
Ethylbenzene	20	18	90	81 - 133
Hexachlorobutadiene	20	18	90	68 - 146
Isopropylbenzene	20	19	95	78 - 137
M/P Xylene	40	36	90	68 - 155
Methyl-t-Butyl Ether	20	18	90	63 - 144
Methylene Chloride	20	18	90	75 - 140
N-Butylbenzene	20	19	95	69 - 147
N-Propylbenzene	20	18	90	76 - 138

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Naphthalene	20	16	80	53 - 155
Ortho Xylene	20	18	90	85 - 135
Para-Isopropyltoluene	20	19	95	77 - 141
Sec-Butylbenzene	20	19	95	80 - 141
Styrene	20	18	90	82 - 139
Tert-Butylbenzene	20	19	95	75 - 144
Tetrachloroethylene	20	17	85	32 - 173
Tetrahydrofuran	20	18	90	47 - 149
Toluene	20	17	85	85 - 134
Trans-1,2-Dichloroethylene	20	18	90	80 - 138
Trichloroethylene	20	18	90	76 - 135
Trichlorofluoromethane	20	18	90	60 - 149
Vinyl Acetate	20	37	185	38 - 187
Vinyl Chloride	20	18	90	66 - 133
c-1,3-dichloropropene	20	19	95	68 - 149
cis-1,2-Dichloroethylene	20	18	90	76 - 143
t-1,3-Dichloropropene	20	16	80	62 - 160

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED DUPLICATE (LFB Dup) RECOVERY

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	21	105	15	50
1,1,1-Trichloroethane	22	110	15	50
1,1,2,2-Tetrachloroethane	20	100	22	50
1,1,2-Trichloro-1,2,2-Trifluoroetha	25	125	27	50
1,1,2-Trichloroethane	21	105	15	50
1,1-Dichloroethylene	21	105	15	52
1,1-Dichloropropene	21	105	15	50
1,1-dichloroethane	22	110	20	50
1,2,3-Trichlorobenzene	21	105	21	50
1,2,3-Trichloropropane	20	100	16	50
1,2,4-Trichlorobenzene	22	110	20	50
1,2,4-Trimethylbenzene	22	110	20	50
1,2-Dibromo-3-Chloropropane	19	95	17	50
1,2-Dibromoethane	21	105	21	50
1,2-Dichlorobenzene	21	105	15	50
1,2-Dichloroethane	20	100	16	50
1,2-Dichloropropane	21	105	15	50
1,3,5-Trimethylbenzene	22	110	20	50
1,3-Dichlorobenzene	22	110	20	50
1,3-Dichloropropane	21	105	21	50
1,4-Dichlorobenzene	22	110	20	50
2,2-Dichloropropane	22	110	10	50
2-Butanone (MEK)	14	70	0	50
2-Chlorotoluene	21	105	15	50
2-Hexanone	16	80	7	50
2-Propanone (acetone)	11	55	24	50
4-Chlorotoluene	21	105	15	50
4-Methyl-2-Pentanone(MIBK)	20	100	16	50
Acrylonitrile	22	110	20	50
Benzene	21	105	15	50
Bromobenzene	22	110	20	50
Bromochloromethane	21	105	15	50
Bromodichloromethane	21	105	15	50
Bromoform	20	100	11	50
Bromomethane	13	65	38	50
Carbon Disulfide	23	115	24	50
Carbon tetrachloride	21	105	15	50
Chlorobenzene	21	105	15	34
Chloroethane	22	110	15	50
Chloroform	21	105	15	50
Chloromethane	20	100	11	50
Dibromochloromethane	21	105	15	50
Dibromomethane	21	105	15	50
Dichlorodifluoromethane	26	130	31	50
Ethyl Ether	25	125	38	50
Ethylbenzene	21	105	15	50
Hexachlorobutadiene	21	105	15	50
Isopropylbenzene	22	110	15	50
M/P Xylene	42	105	15	50
Methyl-t-Butyl Ether	23	115	24	50
Methylene Chloride	21	105	15	50
N-Butylbenzene	22	110	15	50
N-Propylbenzene	22	110	20	50
Naphthalene	19	95	17	50
Ortho Xylene	22	110	20	50
Para-Isopropyltoluene	22	110	15	50

US ENVIRONMENTAL PROTECTION AGENCY
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Sec-Butylbenzene	22	110	15	50
Styrene	22	110	20	50
Tert-Butylbenzene	22	110	15	50
Tetrachloroethylene	19	95	11	50
Tetrahydrofuran	20	100	11	50
Toluene	20	100	16	50
Trans-1,2-Dichloroethylene	21	105	15	50
Trichloroethylene	29	145	47	27
Trichlorofluoromethane	24	120	29	50
Vinyl Acetate	45	225	20	50
Vinyl Chloride	23	115	24	50
c-1,3-dichloropropene	22	110	15	50
cis-1,2-Dichloroethylene	22	110	20	50
t-1,3-Dichloropropene	19	95	17	50

Samples in Batch: AB20930, AB20931, AB20932, AB20933, AB20934, AB20935, AB20936,
AB20937, AB20939, AB20940, AB20941, AB20942, AB20943, AB20944,
AB20945, AB20946

PN: 11080051

USEPA NERL Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 1-082211-131134-0004

Date Shipped: 8/22/2011

Lab: New England Regional Laboratory

Carrier Name: FedEx

Case# EP009S

Lab Contact: Dan Boudreau

Airbill No: 875722301281

Cooler #: 1

Lab Phone: 617-918-8340

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
✓ EP0388	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	82 (HCl), 83 (HCl), 84 (HCl), 85 (HCl), 86 (4 C), 87 (4 C), 88 (4 C), 89 (4 C) (8)	VP-3930A	08/19/2011		
✓ EP0390	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	92 (HCl), 93 (HCl), 94 (HCl), 95 (HCl) (4)	VP-3615A	08/22/2011 08:00		
✗ EP0391	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), DIOX VOA(14)	96 (HCl), 97 (HCl), 98 (HCl), 99 (HCl) (4)	VP-3620A	08/22/2011 08:30		
✗ EP0392	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), NO DIOX 1,4DIOX(7)	100 (HCl), 101 (HCl), 102 (HCl), 103 (HCl), 104 (4 C), 105 (4 C), 106 (4 C), 107 (4 C) (8)	VP-3625A	08/22/2011 08:55		
✓ EP0394	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	110 (HCl), 111 (HCl), 112 (HCl), 113 (HCl) (4)	VP-3630A	08/22/2011 09:40		
✓ EP0395	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	120 (HCl), 121 (HCl), 122 (HCl), 123 (HCl) (4)	VP-3635A	08/22/2011 10:00		
✓ EP0396	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	124 (HCl), 125 (HCl), 126 (HCl), 127 (HCl) (4)	VP-3638A	08/22/2011 10:45		
✓ EP0397	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	128 (HCl), 129 (HCl), 130 (HCl), 131 (HCl) (4)	VP-5415A	08/22/2011 11:45		
✓ EP0398	PE Water/ Corey Rousseau		PE_1,4DIOX(7)	135 (4 C) (1)	DX01283	08/22/2011 08:15		

Special Instructions:	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #

Analysis Key: VOA=Volatiles, 1,4DIOX=1,4-dioxane, PE_1,4DIOX=PE 1,4-dioxane, PE_VOA=PE L/M Volatiles in Water QATS

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
GW Samples	J Toppano	8/22/11	[Signature]	8/23/11	10:00						
	FEDEx										

cooler 4°C

PN: 11080051

USEPA NERL Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 1-082211-131134-0004

Date Shipped: 8/22/2011

Lab: New England Regional Laboratory

Carrier Name: FedEx

Case# EP009S

Lab Contact: Dan Boudreau

Airbill No: 875722301281

Cooler #: |

Lab Phone: 617-918-8340

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
✓ EP0402	PE Water/ Corey Rousseau		PE_VOA(7)	136 (4 C) (1)	VLM0322	08/22/2011 08:20		
✓ EP0403	Blank/ Jason Fopiano	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	137 (HCl), 138 (HCl), 139 (HCl), 140 (HCl) (4)	TBO2-0822A	08/18/2011 11:00		
✓ EP0404	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	141 (HCl), 142 (HCl), 143 (HCl), 144 (HCl) (4)	VP-5420A	08/22/2011 12:20		
✓ EP0405	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	145 (HCl), 146 (HCl), 147 (HCl), 148 (HCl) (4)	VP-5425A	08/22/2011 12:40		
✓ EP0406	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	158 (HCl), 159 (HCl), 160 (HCl), 161 (HCl), 162 (4 C), 163 (4 C), 164 (4 C), 165 (4 C) (8)	VP-5430A	08/22/2011 13:30		
✓ EP0408	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	168 (HCl), 169 (HCl), 170 (HCl), 171 (HCl) (4)	DUP03-0822A	08/22/2011 13:35		
✓ EP0409	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	178 (HCl), 179 (HCl), 180 (HCl), 181 (HCl) (4)	VP-5435A	08/22/2011 14:10		
✓ EP0410	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	182 (HCl), 183 (HCl), 184 (HCl), 185 (HCl) (4)	VP-5440A	08/22/2011 14:45		

Special Instructions:	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #
Analysis Key: VOA=Volatiles, 1,4DIOX=1,4-dioxane, PE_1,4DIOX=PE 1,4-dioxane, PE_VOA=PE L/M Volatiles in Water QATS	

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
GW Samples	J Fopiano	8/22/11	A. F...	8/23/11	10:00						
		FedEx									

Cooler 4°C



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

September 01, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England RI

Project Number: 11080056
Project: Commerce Street Plume - Williston, VT
Analysis: VOAs in Water
Analyst: Dan Curran *DC 9/6/11*

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-VOAGCMS9.

Samples were analyzed by GC/MS. Samples were introduced to the GC via a Tekmar pre-concentrator and an Archon autosampler. The analysis SOP is based on US EPA Method 8260B, method 5030B, rev 2.0 SW-846, Rev 2.0, 1996. Method 624, 40CFR Part 136 Appendix A, July 1, 1992, and USEPA CLP SOW for Organic Analysis OLM04.2, 1999.

Date Samples Received by the Laboratory: 08/24/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP-0412	Lab Sample ID:	AB20998
Date of Collection:	8/23/2011	Matrix:	GW
Date of Extraction:	9/1/11	Volume Purged:	5 mL
Date of Analysis:	9/1/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	50
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	
71-55-6	1,1,1-Trichloroethane	ND	50	
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	
79-00-5	1,1,2-Trichloroethane	ND	50	
75-35-4	1,1-Dichloroethylene	ND	50	
563-58-6	1,1-Dichloropropene	ND	50	
75-34-3	1,1-dichloroethane	ND	50	
87-61-6	1,2,3-Trichlorobenzene	ND	50	
96-18-4	1,2,3-Trichloropropane	ND	50	
120-82-1	1,2,4-Trichlorobenzene	ND	50	
95-63-6	1,2,4-Trimethylbenzene	ND	50	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	50	
106-93-4	1,2-Dibromoethane	ND	50	
95-50-1	1,2-Dichlorobenzene	ND	50	
107-06-2	1,2-Dichloroethane	ND	50	
78-87-5	1,2-Dichloropropane	ND	50	
108-67-8	1,3,5-Trimethylbenzene	ND	50	
541-73-1	1,3-Dichlorobenzene	ND	50	
142-28-9	1,3-Dichloropropane	ND	50	
106-46-7	1,4-Dichlorobenzene	ND	50	
594-20-7	2,2-Dichloropropane	ND	50	
78-93-3	2-Butanone (MEK)	ND	50	
95-49-8	2-Chlorotoluene	ND	50	
591-78-6	2-Hexanone	ND	50	
67-64-1	2-Propanone (acetone)	ND	50	
106-43-4	4-Chlorotoluene	ND	50	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	50	
107-13-1	Acrylonitrile	ND	50	
71-43-2	Benzene	ND	50	
108-86-1	Bromobenzene	ND	50	
74-97-5	Bromochloromethane	ND	50	
75-27-4	Bromodichloromethane	ND	50	
75-25-2	Bromoform	ND	50	
74-83-9	Bromomethane	ND	50	
75-15-0	Carbon Disulfide	ND	50	
56-23-5	Carbon tetrachloride	ND	50	
108-90-7	Chlorobenzene	ND	50	
75-00-3	Chloroethane	ND	50	

67-66-3	Chloroform	ND	50
74-87-3	Chloromethane	ND	50
124-48-1	Dibromochloromethane	ND	50
74-95-3	Dibromomethane	ND	50
75-71-8	Dichlorodifluoromethane	ND	50
60-29-7	Ethyl Ether	ND	50
100-41-4	Ethylbenzene	ND	50
87-68-3	Hexachlorobutadiene	ND	50
98-82-8	Isopropylbenzene	ND	50
108-38-3/106-42-	M/P Xylene	ND	100
1634-04-4	Methyl-t-Butyl Ether	ND	50
75-09-2	Methylene Chloride	ND	50
104-51-8	N-Butylbenzene	ND	50
103-65-1	N-Propylbenzene	ND	50
91-20-3	Naphthalene	ND	50
95-47-6	Ortho Xylene	ND	50
99-87-6	Para-Isopropyltoluene	ND	50
135-98-8	Sec-Butylbenzene	ND	50
100-42-5	Styrene	ND	50
98-06-6	Tert-Butylbenzene	ND	50
127-18-4	Tetrachloroethylene	ND	50
109-99-9	Tetrahydrofuran	ND	50
108-88-3	Toluene	ND	50
156-60-5	Trans-1,2-Dichloroethylene	ND	50
79-01-6	Trichloroethylene	2300	50
75-69-4	Trichlorofluoromethane	ND	50
108-05-4	Vinyl Acetate	ND	50
75-01-4	Vinyl Chloride	ND	50
10061-01-5	c-1,3-dichloropropene	ND	50
156-59-2	cis-1,2-Dichloroethylene	ND	50
10061-02-6	t-1,3-Dichloropropene	ND	50

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	105	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	96	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP-0422
Date of Collection: 8/23/2011
Date of Extraction: 9/1/11
Date of Analysis: 9/1/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21005
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	108	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	97	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Blank for SVOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	9/1/11	Volume Purged:	5.0 mL
Date of Analysis:	9/1/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	-6

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	102	74 - 136
Toluene-D8	96	85 - 118
1,4-Bromofluorobenzene	92	78 - 111

Comments: Laboratory blank is associated with all samples in this project.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

VOA MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB21005

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
1,1,1,2-Tetrachloroethane	20.0	ND	19	95	67 - 129
1,1,1-Trichloroethane	20.0	ND	22	110	75 - 139
1,1,2,2-Tetrachloroethane	20.0	ND	18	90	50 - 142
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	ND	23	115	55 - 135
1,1,2-Trichloroethane	20.0	ND	19	95	62 - 142
1,1-Dichloroethylene	20.0	ND	20	100	80 - 138
1,1-Dichloropropene	20.0	ND	19	95	73 - 131
1,1-dichloroethane	20.0	ND	19	95	61 - 152
1,2,3-Trichlorobenzene	20.0	ND	17	85	49 - 143
1,2,3-Trichloropropane	20.0	ND	17	85	53 - 135
1,2,4-Trichlorobenzene	20.0	ND	18	90	63 - 131
1,2,4-Trimethylbenzene	20.0	ND	20	100	79 - 142
1,2-Dibromo-3-Chloropropane	20.0	ND	16	80	28 - 122
1,2-Dibromoethane	20.0	ND	18	90	53 - 139
1,2-Dichlorobenzene	20.0	ND	19	95	74 - 129
1,2-Dichloroethane	20.0	ND	21	105	61 - 142
1,2-Dichloropropane	20.0	ND	17	85	71 - 126
1,3,5-Trimethylbenzene	20.0	ND	20	100	77 - 140
1,3-Dichlorobenzene	20.0	ND	18	90	78 - 127
1,3-Dichloropropane	20.0	ND	18	90	63 - 130
1,4-Dichlorobenzene	20.0	ND	18	90	72 - 131
2,2-Dichloropropane	20.0	ND	22	110	50 - 139
2-Butanone (MEK)	20.0	ND	14	70	29 - 163
2-Chlorotoluene	20.0	ND	19	95	74 - 134
2-Hexanone	20.0	ND	14	70	36 - 141
2-Propanone (acetone)	20.0	ND	13	65	29 - 164
4-Chlorotoluene	20.0	ND	19	95	68 - 141
4-Methyl-2-Pentanone(MIBK)	20.0	ND	17	85	35 - 139
Acrylonitrile	20.0	ND	16	80	42 - 150
Benzene	20.0	ND	20	100	78 - 134
Bromobenzene	20.0	ND	18	90	76 - 126
Bromochloromethane	20.0	ND	21	105	62 - 140
Bromodichloromethane	20.0	ND	19	95	62 - 133
Bromoform	20.0	ND	18	90	31 - 133
Bromomethane	20.0	ND	19	95	58 - 148
Carbon Disulfide	20.0	ND	18	90	66 - 135
Carbon tetrachloride	20.0	ND	21	105	62 - 146
Chlorobenzene	20.0	ND	20	100	74 - 139
Chloroethane	20.0	ND	20	100	65 - 145
Chloroform	20.0	ND	21	105	60 - 144
Chloromethane	20.0	ND	17	85	58 - 134
Dibromochloromethane	20.0	ND	20	100	34 - 140
Dibromomethane	20.0	ND	17	85	67 - 125
Dichlorodifluoromethane	20.0	ND	16	80	30 - 132
Ethyl Ether	20.0	ND	21	105	58 - 145
Ethylbenzene	20.0	ND	19	95	73 - 143
Hexachlorobutadiene	20.0	ND	18	90	56 - 144
Isopropylbenzene	20.0	ND	19	95	73 - 139

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

M/P Xylene	40.0	ND	39	98	79 - 136
Methyl-t-Butyl Ether	20.0	ND	20	100	50 - 144
Methylene Chloride	20.0	ND	20	100	70 - 144
N-Butylbenzene	20.0	ND	20	100	68 - 143
N-Propylbenzene	20.0	ND	19	95	72 - 149
Naphthalene	20.0	ND	18	90	33 - 154
Ortho Xylene	20.0	ND	20	100	80 - 129
Para-Isopropyltoluene	20.0	ND	20	100	71 - 140
Sec-Butylbenzene	20.0	ND	20	100	75 - 148
Styrene	20.0	ND	20	100	61 - 148
Tert-Butylbenzene	20.0	ND	20	100	71 - 139
Tetrachloroethylene	20.0	ND	18	90	45 - 145
Tetrahydrofuran	20.0	ND	17	85	37 - 143
Toluene	20.0	ND	21	105	77 - 142
Trans-1,2-Dichloroethylene	20.0	ND	20	100	79 - 139
Trichloroethylene	20.0	ND	18	90	65 - 143
Trichlorofluoromethane	20.0	ND	22	110	58 - 161
Vinyl Acetate	20.0	ND	3.8	19	22 - 173
Vinyl Chloride	20.0	ND	18	90	68 - 139
c-1,3-dichloropropene	20.0	ND	20	100	51 - 144
cis-1,2-Dichloroethylene	20.0	ND	20	100	59 - 154
t-1,3-Dichloropropene	20.0	ND	20	100	47 - 145

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sample ID: AB21005

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	20.0	19	95	0	40
1,1,1-Trichloroethane	20.0	21	105	5	16
1,1,2,2-Tetrachloroethane	20.0	18	90	0	40
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	22	110	4	40
1,1,2-Trichloroethane	20.0	19	95	0	40
1,1-Dichloroethylene	20.0	20	100	0	35
1,1-Dichloropropene	20.0	18	90	5	40
1,1-dichloroethane	20.0	18	90	5	40
1,2,3-Trichlorobenzene	20.0	18	90	6	40
1,2,3-Trichloropropane	20.0	17	85	0	40
1,2,4-Trichlorobenzene	20.0	19	95	5	40
1,2,4-Trimethylbenzene	20.0	19	95	5	40
1,2-Dibromo-3-Chloropropane	20.0	17	85	6	40
1,2-Dibromoethane	20.0	18	90	0	40
1,2-Dichlorobenzene	20.0	19	95	0	40
1,2-Dichloroethane	20.0	20	100	5	23
1,2-Dichloropropane	20.0	16	80	6	40
1,3,5-Trimethylbenzene	20.0	19	95	5	40
1,3-Dichlorobenzene	20.0	19	95	5	40
1,3-Dichloropropane	20.0	18	90	0	40
1,4-Dichlorobenzene	20.0	18	90	0	21
2,2-Dichloropropane	20.0	20	100	10	40
2-Butanone (MEK)	20.0	14	70	0	40
2-Chlorotoluene	20.0	19	95	0	40
2-Hexanone	20.0	15	75	7	40
2-Propanone (acetone)	20.0	14	70	7	40
4-Chlorotoluene	20.0	19	95	0	40
4-Methyl-2-Pentanone(MIBK)	20.0	18	90	6	40
Acrylonitrile	20.0	17	85	6	40
Benzene	20.0	19	95	5	14
Bromobenzene	20.0	18	90	0	40
Bromochloromethane	20.0	20	100	5	40
Bromodichloromethane	20.0	18	90	5	21
Bromoform	20.0	18	90	0	40
Bromomethane	20.0	18	90	5	40
Carbon Disulfide	20.0	17	85	6	40
Carbon tetrachloride	20.0	20	100	5	19
Chlorobenzene	20.0	20	100	0	40
Chloroethane	20.0	19	95	5	40
Chloroform	20.0	20	100	5	16
Chloromethane	20.0	18	90	6	40
Dibromochloromethane	20.0	20	100	0	36
Dibromomethane	20.0	18	90	6	40
Dichlorodifluoromethane	20.0	15	75	6	40
Ethyl Ether	20.0	22	110	5	40
Ethylbenzene	20.0	19	95	0	40
Hexachlorobutadiene	20.0	19	95	5	40
Isopropylbenzene	20.0	19	95	0	40
M/P Xylene	40.0	39	98	0	40
Methyl-t-Butyl Ether	20.0	20	100	0	40
Methylene Chloride	20.0	19	95	5	40
N-Butylbenzene	20.0	20	100	0	40
N-Propylbenzene	20.0	19	95	0	40
Naphthalene	20.0	20	100	11	40

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Ortho Xylene	20.0	19	95	5	40
Para-Isopropyltoluene	20.0	20	100	0	40
Sec-Butylbenzene	20.0	19	95	5	40
Styrene	20.0	20	100	0	40
Tert-Butylbenzene	20.0	20	100	0	40
Tetrachloroethylene	20.0	17	85	6	40
Tetrahydrofuran	20.0	18	90	6	40
Toluene	20.0	20	100	5	40
Trans-1,2-Dichloroethylene	20.0	19	95	5	40
Trichloroethylene	20.0	18	90	0	22
Trichlorofluoromethane	20.0	20	100	10	40
Vinyl Acetate	20.0	4.0	20	5	40
Vinyl Chloride	20.0	19	95	5	19
c-1,3-dichloropropene	20.0	20	100	0	40
cis-1,2-Dichloroethylene	20.0	20	100	0	40
t-1,3-Dichloropropene	20.0	20	100	0	40

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21005

PARAMETER	SAMPLE RESULT	SAMPLE DUPLICATE RESULT	PRECISION RPD	QC LIMITS
	ug/L	ug/L	%	
1,1,1,2-Tetrachloroethane	ND	ND	ND	30
1,1,1-Trichloroethane	ND	ND	ND	30
1,1,2,2-Tetrachloroethane	ND	ND	ND	30
1,1,2-Trichloro-1,2,2-Trifluoroeth:	ND	ND	ND	30
1,1,2-Trichloroethane	ND	ND	ND	30
1,1-Dichloroethylene	ND	ND	ND	30
1,1-Dichloropropene	ND	ND	ND	30
1,1-dichloroethane	ND	ND	ND	30
1,2,3-Trichlorobenzene	ND	ND	ND	30
1,2,3-Trichloropropane	ND	ND	ND	30
1,2,4-Trichlorobenzene	ND	ND	ND	30
1,2,4-Trimethylbenzene	ND	ND	ND	30
1,2-Dibromo-3-Chloropropane	ND	ND	ND	30
1,2-Dibromoethane	ND	ND	ND	30
1,2-Dichlorobenzene	ND	ND	ND	30
1,2-Dichloroethane	ND	ND	ND	30
1,2-Dichloropropane	ND	ND	ND	30
1,3,5-Trimethylbenzene	ND	ND	ND	30
1,3-Dichlorobenzene	ND	ND	ND	30
1,3-Dichloropropane	ND	ND	ND	30
1,4-Dichlorobenzene	ND	ND	ND	30
2,2-Dichloropropane	ND	ND	ND	30
2-Butanone (MEK)	ND	ND	ND	30
2-Chlorotoluene	ND	ND	ND	30
2-Hexanone	ND	ND	ND	30
2-Propanone (acetone)	ND	ND	ND	30
4-Chlorotoluene	ND	ND	ND	30
4-Methyl-2-Pentanone(MIBK)	ND	ND	ND	30
Acrylonitrile	ND	ND	ND	30
Benzene	ND	ND	ND	30
Bromobenzene	ND	ND	ND	30
Bromochloromethane	ND	ND	ND	30
Bromodichloromethane	ND	ND	ND	30
Bromoform	ND	ND	ND	30
Bromomethane	ND	ND	ND	30
Carbon Disulfide	ND	ND	ND	30
Carbon tetrachloride	ND	ND	ND	30
Chlorobenzene	ND	ND	ND	30
Chloroethane	ND	ND	ND	30
Chloroform	ND	ND	ND	30
Chloromethane	ND	ND	ND	30
Dibromochloromethane	ND	ND	ND	30
Dibromomethane	ND	ND	ND	30
Dichlorodifluoromethane	ND	ND	ND	30
Ethyl Ether	ND	ND	ND	30
Ethylbenzene	ND	ND	ND	30
Hexachlorobutadiene	ND	ND	ND	30
Isopropylbenzene	ND	ND	ND	30
M/P Xylene	ND	ND	ND	30
Methyl-t-Butyl Ether	ND	ND	ND	30

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Methylene Chloride	ND	ND	ND	30
N-Butylbenzene	ND	ND	ND	30
N-Propylbenzene	ND	ND	ND	30
Naphthalene	ND	ND	ND	30
Ortho Xylene	ND	ND	ND	30
Para-Isopropyltoluene	ND	ND	ND	30
Sec-Butylbenzene	ND	ND	ND	30
Styrene	ND	ND	ND	30
Tert-Butylbenzene	ND	ND	ND	30
Tetrachloroethylene	ND	ND	ND	30
Tetrahydrofuran	ND	ND	ND	30
Toluene	ND	ND	ND	30
Trans-1,2-Dichloroethylene	ND	ND	ND	30
Trichloroethylene	ND	ND	ND	30
Trichlorofluoromethane	ND	ND	ND	30
Vinyl Acetate	ND	ND	ND	30
Vinyl Chloride	ND	ND	ND	30
c-1,3-dichloropropene	ND	ND	ND	30
cis-1,2-Dichloroethylene	ND	ND	ND	30
t-1,3-Dichloropropene	ND	ND	ND	30

US ENVIRONMENTAL PROTECTION AGENCY
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Laboratory Fortified Blank (LFB) Results

Commerce Street Plume - Williston, VT

PARAMETER	LFB AMOUNT SPIKED ug/mL	LFB RESULT ug/mL	LFB RECOVERY %	QC LIMITS %
1,1,1,2-Tetrachloroethane	20	19	95	79 - 136
1,1,1-Trichloroethane	20	21	105	75 - 146
1,1,2,2-Tetrachloroethane	20	16	80	62 - 141
1,1,2-Trichloro-1,2,2-Trifluoroeth	20	23	115	56 - 130
1,1,2-Trichloroethane	20	18	90	75 - 138
1,1-Dichloroethylene	20	20	100	75 - 136
1,1-Dichloropropene	20	19	95	77 - 137
1,1-dichloroethane	20	19	95	76 - 142
1,2,3-Trichlorobenzene	20	17	85	64 - 143
1,2,3-Trichloropropane	20	15	75	66 - 133
1,2,4-Trichlorobenzene	20	17	85	80 - 131
1,2,4-Trimethylbenzene	20	19	95	74 - 155
1,2-Dibromo-3-Chloropropane	20	15	75	37 - 139
1,2-Dibromoethane	20	17	85	72 - 135
1,2-Dichlorobenzene	20	18	90	85 - 128
1,2-Dichloroethane	20	19	95	74 - 138
1,2-Dichloropropane	20	17	85	83 - 124
1,3,5-Trimethylbenzene	20	19	95	80 - 145
1,3-Dichlorobenzene	20	18	90	84 - 130
1,3-Dichloropropane	20	17	85	77 - 129
1,4-Dichlorobenzene	20	18	90	82 - 128
2,2-Dichloropropane	20	22	110	32 - 171
2-Butanone (MEK)	20	16	80	38 - 179
2-Chlorotoluene	20	19	95	78 - 134
2-Hexanone	20	17	85	45 - 158
2-Propanone (acetone)	20	25	125	14 - 209
4-Chlorotoluene	20	18	90	75 - 144
4-Methyl-2-Pentanone(MIBK)	20	15	75	40 - 144
Acrylonitrile	20	15	75	52 - 154
Benzene	20	19	95	83 - 130
Bromobenzene	20	18	90	85 - 126
Bromochloromethane	20	20	100	69 - 137
Bromodichloromethane	20	19	95	70 - 143
Bromoform	20	18	90	51 - 136
Bromomethane	20	23	115	65 - 140
Carbon Disulfide	20	18	90	68 - 140
Carbon tetrachloride	20	20	100	70 - 144
Chlorobenzene	20	19	95	84 - 131
Chloroethane	20	19	95	70 - 134
Chloroform	20	20	100	76 - 141
Chloromethane	20	16	80	63 - 123
Dibromochloromethane	20	19	95	39 - 154
Dibromomethane	20	18	90	79 - 124
Dichlorodifluoromethane	20	17	85	37 - 117
Ethyl Ether	20	19	95	67 - 140
Ethylbenzene	20	19	95	81 - 133
Hexachlorobutadiene	20	17	85	68 - 146
Isopropylbenzene	20	19	95	78 - 137
M/P Xylene	40	37	93	68 - 155
Methyl-t-Butyl Ether	20	19	95	63 - 144
Methylene Chloride	20	19	95	75 - 140
N-Butylbenzene	20	19	95	69 - 147
N-Propylbenzene	20	18	90	76 - 138

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Naphthalene	20	17	85	53 - 155
Ortho Xylene	20	19	95	85 - 135
Para-Isopropyltoluene	20	19	95	77 - 141
Sec-Butylbenzene	20	19	95	80 - 141
Styrene	20	19	95	82 - 139
Tert-Butylbenzene	20	20	100	75 - 144
Tetrachloroethylene	20	18	90	32 - 173
Tetrahydrofuran	20	15	75	47 - 149
Toluene	20	19	95	85 - 134
Trans-1,2-Dichloroethylene	20	19	95	80 - 138
Trichloroethylene	20	19	95	76 - 135
Trichlorofluoromethane	20	22	110	60 - 149
Vinyl Acetate	20	3.6	18	38 - 187
Vinyl Chloride	20	20	100	66 - 133
c-1,3-dichloropropene	20	19	95	68 - 149
cis-1,2-Dichloroethylene	20	20	100	76 - 143
t-1,3-Dichloropropene	20	20	100	62 - 160

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED DUPLICATE (LFB Dup) RECOVERY

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	19	95	0	50
1,1,1-Trichloroethane	21	105	0	50
1,1,2,2-Tetrachloroethane	17	85	6	50
1,1,2-Trichloro-1,2,2-Trifluoroetha	23	115	0	50
1,1,2-Trichloroethane	19	95	5	50
1,1-Dichloroethylene	19	95	5	52
1,1-Dichloropropene	19	95	0	50
1,1-dichloroethane	18	90	5	50
1,2,3-Trichlorobenzene	17	85	0	50
1,2,3-Trichloropropane	16	80	7	50
1,2,4-Trichlorobenzene	18	90	6	50
1,2,4-Trimethylbenzene	20	100	5	50
1,2-Dibromo-3-Chloropropane	16	80	7	50
1,2-Dibromoethane	18	90	6	50
1,2-Dichlorobenzene	19	95	5	50
1,2-Dichloroethane	20	100	5	50
1,2-Dichloropropane	17	85	0	50
1,3,5-Trimethylbenzene	19	95	0	50
1,3-Dichlorobenzene	18	90	0	50
1,3-Dichloropropane	18	90	6	50
1,4-Dichlorobenzene	18	90	0	50
2,2-Dichloropropane	16	80	32	50
2-Butanone (MEK)	15	75	7	50
2-Chlorotoluene	19	95	0	50
2-Hexanone	14	70	19	50
2-Propanone (acetone)	19	95	27	50
4-Chlorotoluene	18	90	0	50
4-Methyl-2-Pentanone(MIBK)	16	80	7	50
Acrylonitrile	15	75	0	50
Benzene	19	95	0	50
Bromobenzene	18	90	0	50
Bromochloromethane	20	100	0	50
Bromodichloromethane	18	90	5	50
Bromoform	18	90	0	50
Bromomethane	10	50	79	50
Carbon Disulfide	16	80	12	50
Carbon tetrachloride	20	100	0	50
Chlorobenzene	20	100	5	34
Chloroethane	17	85	11	50
Chloroform	20	100	0	50
Chloromethane	17	85	6	50
Dibromochloromethane	20	100	5	50
Dibromomethane	18	90	0	50
Dichlorodifluoromethane	16	80	6	50
Ethyl Ether	18	90	5	50
Ethylbenzene	19	95	0	50
Hexachlorobutadiene	19	95	11	50
Isopropylbenzene	19	95	0	50
M/P Xylene	39	98	5	50
Methyl-t-Butyl Ether	18	90	5	50
Methylene Chloride	18	90	5	50
N-Butylbenzene	19	95	0	50
N-Propylbenzene	18	90	0	50
Naphthalene	18	90	6	50
Ortho Xylene	20	100	5	50
Para-Isopropyltoluene	20	100	5	50

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Sec-Butylbenzene	19	95	0	50
Styrene	19	95	0	50
Tert-Butylbenzene	20	100	0	50
Tetrachloroethylene	19	95	5	50
Tetrahydrofuran	17	85	13	50
Toluene	20	100	5	50
Trans-1,2-Dichloroethylene	19	95	0	50
Trichloroethylene	19	95	0	27
Trichlorofluoromethane	21	105	5	50
Vinyl Acetate	3.2	16	12	50
Vinyl Chloride	18	90	11	50
c-1,3-dichloropropene	19	95	0	50
cis-1,2-Dichloroethylene	19	95	5	50
t-1,3-Dichloropropene	19	95	5	50

Samples in Batch: AB20998, AB21005

PN 110 80056

USEPA NERL Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 1-082311-083936-0006

Date Shipped: 8/23/2011

Lab: New England Regional Laboratory

Carrier Name: FedEx

Case# EP009S

Lab Contact: Dan Boudreau

Airbill No: 875722301329

Cooler # 1

Lab Phone: 617-918-8340

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
EP0411	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	186 (HCl), 187 (HCl), 188 (HCl), 189 (HCl) (4)	VP-3815A	08/23/2011 08:00		
EP0412	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	190 (HCl), 191 (HCl), 192 (HCl), 193 (HCl) (4)	VP-3820A	08/23/2011 08:30		
EP0413	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	194 (HCl), 195 (HCl), 196 (HCl), 197 (HCl) (4)	VP-3825A	08/23/2011 09:00		
EP0414	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS, 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	202 (HCl), 203 (HCl), 204 (HCl), 205 (HCl), 206 (4 C), 207 (4 C), 208 (4 C), 209 (4 C) (8)	VP-3830A	08/23/2011 09:50		
EP0416	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS, 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	212 (HCl), 213 (HCl), 214 (HCl), 215 (HCl), 216 (4 C), 217 (4 C), 218 (4 C), 219 (4 C) (8)	DUP04-0823A	08/23/2011 09:55		
EP0418	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	226 (HCl), 227 (HCl), 228 (HCl), 229 (HCl) (4)	VP-3835A	08/23/2011 10:30		
EP0420	Blank/ Corey Rousseau	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	222 (HCl), 223 (HCl), 224 (HCl), 225 (HCl) (4)	TB03-0823A	08/23/2011 08:00		
EP0421	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	248 (HCl), 249 (HCl), 250 (HCl), 251 (HCl) (4)	VP-3715A	08/23/2011 12:50		
EP0422	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	252 (HCl), 253 (HCl), 254 (HCl), 255 (HCl) (4)	VP-3720A	08/23/2011 13:10		

Sample(s) to be used for Lab QC: EP0423	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #
Analysis Key: VOC-HS=VOC Headspace Screening, 1,4DIOX=1,4-dioxane	

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
Shipping	[Signature]	8/23/11	[Signature]	8/24/11	09:45						
		FedEx									

4°C

PN: 11080056

USEPA NERL Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 1-082311-083936-0006

DateShipped: 8/23/2011

Lab: New England Regional Laboratory

CarrierName: FedEx

Case#EP009S

Lab Contact: Dan Boudreau

AirbillNo: 875722301329

Cooler # 1

Lab Phone: 617-918-8340

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
EP0423	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS, 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	260 (HCl), 261 (HCl), 262 (HCl), 263 (HCl), 264 (4 C), 265 (4 C), 266 (4 C), 267 (4 C), 270 (4 C), 271 (4 C), 272 (4 C), 273 (4 C), 274 (4 C), 275 (4 C), 276 (4 C), 277 (4 C) (16)	VP-3725A	08/23/2011 14:00		
EP0425	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	282 (HCl), 283 (HCl), 284 (HCl), 285 (HCl) (4)	VP-3730A	08/23/2011 14:45		
EP0426	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	286 (HCl), 287 (HCl), 288 (HCl), 289 (HCl) (4)	VP-3735A	08/23/2011 15:25		

Sample(s) to be used for Lab QC: EP0423	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #

Analysis Key: VOC-HS=VOC Headspace Screening, 1,4DIOX=1,4-dioxane

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
Shipping	<i>[Signature]</i>	8/23/11	<i>[Signature]</i>	8/24/11	09:45						

4°C



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

August 31, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080063
Project: Commerce Street Plume - Williston, VT
Analysis: VOAs in Water
Analyst: Dan Curran DC 8/31/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, ELIASOP-VOAGCMS9.

Samples were analyzed by GC/MS. Samples were introduced to the GC via a Tekmar pre-concentrator and an Archon autosampler. The analysis SOP is based on US EPA Method 8260B, method 5030B, rev 2.0 SW-846, Rev 2.0, 1996. Method 624, 40CFR Part 136 Appendix A, July 1, 1992, and USEPA CLP SOW for Organic Analysis OLM04.2, 1999.

Date Samples Received by the Laboratory: 08/25/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

 9/1/11

Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0434
Date of Collection: 8/25/2011
Date of Extraction: 8/29/11
Date of Analysis: 8/29/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21087
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-1	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	95	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	93	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Blank for \$VOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	8/29/11	Volume Purged:	5.0 mL
Date of Analysis:	8/29/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	91	74 - 136
Toluene-D8	97	85 - 118
1,4-Bromofluorobenzene	96	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0438	Lab Sample ID:	AB21091
Date of Collection:	8/24/2011	Matrix:	GW
Date of Extraction:	8/29/11	Volume Purged:	5 mL
Date of Analysis:	8/29/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	1.2	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-1	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	100	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	102	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

VOA MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB21087

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
1,1,1,2-Tetrachloroethane	20.0	ND	21	105	67 - 129
1,1,1-Trichloroethane	20.0	ND	20	100	75 - 139
1,1,2,2-Tetrachloroethane	20.0	ND	18	90	50 - 142
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	ND	19	95	55 - 135
1,1,2-Trichloroethane	20.0	ND	19	95	62 - 142
1,1-Dichloroethylene	20.0	ND	19	95	80 - 138
1,1-Dichloropropene	20.0	ND	19	95	73 - 131
1,1-dichloroethane	20.0	ND	20	100	61 - 152
1,2,3-Trichlorobenzene	20.0	ND	23	115	49 - 143
1,2,3-Trichloropropane	20.0	ND	19	95	53 - 135
1,2,4-Trichlorobenzene	20.0	ND	24	120	63 - 131
1,2,4-Trimethylbenzene	20.0	ND	23	115	79 - 142
1,2-Dibromo-3-Chloropropane	20.0	ND	19	95	28 - 122
1,2-Dibromoethane	20.0	ND	19	95	53 - 139
1,2-Dichlorobenzene	20.0	ND	22	110	74 - 129
1,2-Dichloroethane	20.0	ND	19	95	61 - 142
1,2-Dichloropropane	20.0	ND	20	100	71 - 126
1,3,5-Trimethylbenzene	20.0	ND	23	115	77 - 140
1,3-Dichlorobenzene	20.0	ND	22	110	78 - 127
1,3-Dichloropropane	20.0	ND	19	95	63 - 130
1,4-Dichlorobenzene	20.0	ND	22	110	72 - 131
2,2-Dichloropropane	20.0	ND	20	100	50 - 139
2-Butanone (MEK)	20.0	ND	11	55	29 - 163
2-Chlorotoluene	20.0	ND	22	110	74 - 134
2-Hexanone	20.0	ND	13	65	36 - 141
2-Propanone (acetone)	20.0	ND	8.8	44	29 - 164
4-Chlorotoluene	20.0	ND	22	110	68 - 141
4-Methyl-2-Pentanone(MIBK)	20.0	ND	17	85	35 - 139
Acrylonitrile	20.0	ND	18	90	42 - 150
Benzene	20.0	ND	19	95	78 - 134
Bromobenzene	20.0	ND	22	110	76 - 126
Bromochloromethane	20.0	ND	21	105	62 - 140
Bromodichloromethane	20.0	ND	21	105	62 - 133
Bromoform	20.0	ND	19	95	31 - 133
Bromomethane	20.0	ND	16	80	58 - 148
Carbon Disulfide	20.0	ND	19	95	66 - 135
Carbon tetrachloride	20.0	ND	18	90	62 - 146
Chlorobenzene	20.0	ND	20	100	74 - 139
Chloroethane	20.0	ND	20	100	65 - 145
Chloroform	20.0	ND	21	105	60 - 144
Chloromethane	20.0	ND	17	85	58 - 134
Dibromochloromethane	20.0	ND	19	95	34 - 140
Dibromomethane	20.0	ND	19	95	67 - 125
Dichlorodifluoromethane	20.0	ND	17	85	30 - 132
Ethyl Ether	20.0	ND	23	115	58 - 145
Ethylbenzene	20.0	ND	20	100	73 - 143
Hexachlorobutadiene	20.0	ND	24	120	56 - 144
Isopropylbenzene	20.0	ND	23	115	73 - 139

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

M/P Xylene	40.0	ND	40	100	79 - 136
Methyl-t-Butyl Ether	20.0	ND	18	90	50 - 144
Methylene Chloride	20.0	ND	20	100	70 - 144
N-Butylbenzene	20.0	ND	26	130	68 - 143
N-Propylbenzene	20.0	ND	22	110	72 - 149
Naphthalene	20.0	ND	19	95	33 - 154
Ortho Xylene	20.0	ND	21	105	80 - 129
Para-Isopropyltoluene	20.0	ND	25	125	71 - 140
Sec-Butylbenzene	20.0	ND	24	120	75 - 148
Styrene	20.0	ND	21	105	61 - 148
Tert-Butylbenzene	20.0	ND	24	120	71 - 139
Tetrachloroethylene	20.0	ND	18	90	45 - 145
Tetrahydrofuran	20.0	ND	16	80	37 - 143
Toluene	20.0	ND	19	95	77 - 142
Trans-1,2-Dichloroethylene	20.0	ND	20	100	79 - 139
Trichloroethylene	20.0	ND	19	95	65 - 143
Trichlorofluoromethane	20.0	ND	19	95	58 - 161
Vinyl Acetate	20.0	ND	35	175	22 - 173
Vinyl Chloride	20.0	ND	18	90	68 - 139
c-1,3-dichloropropene	20.0	ND	21	105	51 - 144
cis-1,2-Dichloroethylene	20.0	ND	21	105	59 - 154
t-1,3-Dichloropropene	20.0	ND	18	90	47 - 145

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sample ID: AB21087

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	20.0	21	105	0.00	40
1,1,1-Trichloroethane	20.0	21	105	4.88	16
1,1,2,2-Tetrachloroethane	20.0	20	100	10.5	40
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	21	105	10.0	40
1,1,2-Trichloroethane	20.0	20	100	5.13	40
1,1-Dichloroethylene	20.0	20	100	5.13	35
1,1-Dichloropropene	20.0	21	105	10.0	40
1,1-dichloroethane	20.0	21	105	4.88	40
1,2,3-Trichlorobenzene	20.0	21	105	9.09	40
1,2,3-Trichloropropane	20.0	20	100	5.13	40
1,2,4-Trichlorobenzene	20.0	21	105	13.3	40
1,2,4-Trimethylbenzene	20.0	21	105	9.09	40
1,2-Dibromo-3-Chloropropane	20.0	19	95.0	0.00	40
1,2-Dibromoethane	20.0	21	105	10.0	40
1,2-Dichlorobenzene	20.0	21	105	4.65	40
1,2-Dichloroethane	20.0	20	100	5.13	23
1,2-Dichloropropane	20.0	21	105	4.88	40
1,3,5-Trimethylbenzene	20.0	21	105	9.09	40
1,3-Dichlorobenzene	20.0	21	105	4.65	40
1,3-Dichloropropane	20.0	20	100	5.13	40
1,4-Dichlorobenzene	20.0	21	105	4.65	21
2,2-Dichloropropane	20.0	21	105	4.88	40
2-Butanone (MEK)	20.0	13	65.0	16.7	40
2-Chlorotoluene	20.0	21	105	4.65	40
2-Hexanone	20.0	14	70.0	7.41	40
2-Propanone (acetone)	20.0	9.9	49.5	11.8	40
4-Chlorotoluene	20.0	21	105	4.65	40
4-Methyl-2-Pentanone(MIBK)	20.0	19	95.0	11.1	40
Acrylonitrile	20.0	20	100	10.5	40
Benzene	20.0	20	100	5.13	14
Bromobenzene	20.0	21	105	4.65	40
Bromochloromethane	20.0	20	100	4.88	40
Bromodichloromethane	20.0	21	105	0.00	21
Bromoform	20.0	20	100	5.13	40
Bromomethane	20.0	15	75.0	6.45	40
Carbon Disulfide	20.0	20	100	5.13	40
Carbon tetrachloride	20.0	21	105	15.4	19
Chlorobenzene	20.0	21	105	4.88	40
Chloroethane	20.0	20	100	0.00	40
Chloroform	20.0	20	100	4.88	16
Chloromethane	20.0	17	85.0	0.00	40
Dibromochloromethane	20.0	21	105	10.0	36
Dibromomethane	20.0	21	105	10.0	40
Dichlorodifluoromethane	20.0	19	95.0	11.1	40
Ethyl Ether	20.0	24	120	4.26	40
Ethylbenzene	20.0	21	105	4.88	40
Hexachlorobutadiene	20.0	21	105	13.3	40
Isopropylbenzene	20.0	22	110	4.44	40
M/P Xylene	40.0	42	105	4.88	40
Methyl-t-Butyl Ether	20.0	19	95.0	5.41	40
Methylene Chloride	20.0	20	100	0.00	40
N-Butylbenzene	20.0	22	110	16.7	40
N-Propylbenzene	20.0	21	105	4.65	40
Naphthalene	20.0	19	95.0	0.00	40

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Ortho Xylene	20.0	21	105	0.00	40
Para-Isopropyltoluene	20.0	22	110	12.8	40
Sec-Butylbenzene	20.0	22	110	8.70	40
Styrene	20.0	21	105	0.00	40
Tert-Butylbenzene	20.0	22	110	8.70	40
Tetrachloroethylene	20.0	19	95.0	5.41	40
Tetrahydrofuran	20.0	18	90.0	11.8	40
Toluene	20.0	21	105	10.0	40
Trans-1,2-Dichloroethylene	20.0	20	100	0.00	40
Trichloroethylene	20.0	20	100	5.13	22
Trichlorofluoromethane	20.0	20	100	5.13	40
Vinyl Acetate	20.0	36	180	2.82	40
Vinyl Chloride	20.0	19	95.0	5.41	19
c-1,3-dichloropropene	20.0	22	110	4.65	40
cis-1,2-Dichloroethylene	20.0	21	105	0.00	40
t-1,3-Dichloropropene	20.0	19	95.0	5.41	40

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21087

PARAMETER	SAMPLE RESULT	SAMPLE DUPLICATE RESULT	PRECISION RPD	QC LIMITS
	ug/L	ug/L	%	
1,1,1,2-Tetrachloroethane	ND	ND	ND	30
1,1,1-Trichloroethane	ND	ND	ND	30
1,1,2,2-Tetrachloroethane	ND	ND	ND	30
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ND	ND	30
1,1,2-Trichloroethane	ND	ND	ND	30
1,1-Dichloroethylene	ND	ND	ND	30
1,1-Dichloropropene	ND	ND	ND	30
1,1-dichloroethane	ND	ND	ND	30
1,2,3-Trichlorobenzene	ND	ND	ND	30
1,2,3-Trichloropropane	ND	ND	ND	30
1,2,4-Trichlorobenzene	ND	ND	ND	30
1,2,4-Trimethylbenzene	ND	ND	ND	30
1,2-Dibromo-3-Chloropropane	ND	ND	ND	30
1,2-Dibromoethane	ND	ND	ND	30
1,2-Dichlorobenzene	ND	ND	ND	30
1,2-Dichloroethane	ND	ND	ND	30
1,2-Dichloropropane	ND	ND	ND	30
1,3,5-Trimethylbenzene	ND	ND	ND	30
1,3-Dichlorobenzene	ND	ND	ND	30
1,3-Dichloropropane	ND	ND	ND	30
1,4-Dichlorobenzene	ND	ND	ND	30
2,2-Dichloropropane	ND	ND	ND	30
2-Butanone (MEK)	ND	ND	ND	30
2-Chlorotoluene	ND	ND	ND	30
2-Hexanone	ND	ND	ND	30
2-Propanone (acetone)	ND	ND	ND	30
4-Chlorotoluene	ND	ND	ND	30
4-Methyl-2-Pentanone(MIBK)	ND	ND	ND	30
Acrylonitrile	ND	ND	ND	30
Benzene	ND	ND	ND	30
Bromobenzene	ND	ND	ND	30
Bromochloromethane	ND	ND	ND	30
Bromodichloromethane	ND	ND	ND	30
Bromoform	ND	ND	ND	30
Bromomethane	ND	ND	ND	30
Carbon Disulfide	ND	ND	ND	30
Carbon tetrachloride	ND	ND	ND	30
Chlorobenzene	ND	ND	ND	30
Chloroethane	ND	ND	ND	30
Chloroform	ND	ND	ND	30
Chloromethane	ND	ND	ND	30
Dibromochloromethane	ND	ND	ND	30
Dibromomethane	ND	ND	ND	30
Dichlorodifluoromethane	ND	ND	ND	30
Ethyl Ether	ND	ND	ND	30
Ethylbenzene	ND	ND	ND	30
Hexachlorobutadiene	ND	ND	ND	30
Isopropylbenzene	ND	ND	ND	30
M/P Xylene	ND	ND	ND	30
Methyl-t-Butyl Ether	ND	ND	ND	30

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Methylene Chloride	ND	ND	ND	30
N-Butylbenzene	ND	ND	ND	30
N-Propylbenzene	ND	ND	ND	30
Naphthalene	ND	ND	ND	30
Ortho Xylene	ND	ND	ND	30
Para-Isopropyltoluene	ND	ND	ND	30
Sec-Butylbenzene	ND	ND	ND	30
Styrene	ND	ND	ND	30
Tert-Butylbenzene	ND	ND	ND	30
Tetrachloroethylene	ND	ND	ND	30
Tetrahydrofuran	ND	ND	ND	30
Toluene	ND	ND	ND	30
Trans-1,2-Dichloroethylene	ND	ND	ND	30
Trichloroethylene	ND	ND	ND	30
Trichlorofluoromethane	ND	ND	ND	30
Vinyl Acetate	ND	ND	ND	30
Vinyl Chloride	ND	ND	ND	30
c-1,3-dichloropropene	ND	ND	ND	30
cis-1,2-Dichloroethylene	ND	ND	ND	30
t-1,3-Dichloropropene	ND	ND	ND	30

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Fortified Blank (LFB) Results

Commerce Street Plume - Williston, VT

PARAMETER	LFB AMOUNT SPIKED ug/mL	LFB RESULT ug/mL	LFB RECOVERY %	QC LIMITS %
1,1,1,2-Tetrachloroethane	20	17	85	79 - 136
1,1,1-Trichloroethane	20	16	80	75 - 146
1,1,2,2-Tetrachloroethane	20	16	80	62 - 141
1,1,2-Trichloro-1,2,2-Trifluoroeth	20	20	100	56 - 130
1,1,2-Trichloroethane	20	16	80	75 - 138
1,1-Dichloroethylene	20	16	80	75 - 136
1,1-Dichloropropene	20	17	85	77 - 137
1,1-dichloroethane	20	16	80	76 - 142
1,2,3-Trichlorobenzene	20	16	80	64 - 143
1,2,3-Trichloropropane	20	16	80	66 - 133
1,2,4-Trichlorobenzene	20	17	85	80 - 131
1,2,4-Trimethylbenzene	20	17	85	74 - 155
1,2-Dibromo-3-Chloropropane	20	15	75	37 - 139
1,2-Dibromoethane	20	16	80	72 - 135
1,2-Dichlorobenzene	20	16	80	85 - 128
1,2-Dichloroethane	20	16	80	74 - 138
1,2-Dichloropropane	20	16	80	83 - 124
1,3,5-Trimethylbenzene	20	17	85	80 - 145
1,3-Dichlorobenzene	20	17	85	84 - 130
1,3-Dichloropropane	20	16	80	77 - 129
1,4-Dichlorobenzene	20	17	85	82 - 128
2,2-Dichloropropane	20	17	85	32 - 171
2-Butanone (MEK)	20	16	80	38 - 179
2-Chlorotoluene	20	17	85	78 - 134
2-Hexanone	20	17	85	45 - 158
2-Propanone (acetone)	20	17	85	14 - 209
4-Chlorotoluene	20	17	85	75 - 144
4-Methyl-2-Pentanone(MIBK)	20	16	80	40 - 144
Acrylonitrile	20	16	80	52 - 154
Benzene	20	16	80	83 - 130
Bromobenzene	20	17	85	85 - 126
Bromochloromethane	20	16	80	69 - 137
Bromodichloromethane	20	16	80	70 - 143
Bromoform	20	16	80	51 - 136
Bromomethane	20	15	75	65 - 140
Carbon Disulfide	20	15	75	68 - 140
Carbon tetrachloride	20	16	80	70 - 144
Chlorobenzene	20	15	75	84 - 131
Chloroethane	20	20	100	70 - 134
Chloroform	20	16	80	76 - 141
Chloromethane	20	18	90	63 - 123
Dibromochloromethane	20	16	80	39 - 154
Dibromomethane	20	16	80	79 - 124
Dichlorodifluoromethane	20	18	90	37 - 117
Ethyl Ether	20	15	75	67 - 140
Ethylbenzene	20	16	80	81 - 133
Hexachlorobutadiene	20	17	85	68 - 146
Isopropylbenzene	20	17	85	78 - 137
M/P Xylene	40	33	83	68 - 155
Methyl-t-Butyl Ether	20	15	75	63 - 144
Methylene Chloride	20	16	80	75 - 140
N-Butylbenzene	20	17	85	69 - 147
N-Propylbenzene	20	17	85	76 - 138

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Naphthalene	20	15	75	53 - 155
Ortho Xylene	20	17	85	85 - 135
Para-Isopropyltoluene	20	17	85	77 - 141
Sec-Butylbenzene	20	17	85	80 - 141
Styrene	20	17	85	82 - 139
Tert-Butylbenzene	20	17	85	75 - 144
Tetrachloroethylene	20	16	80	32 - 173
Tetrahydrofuran	20	14	70	47 - 149
Toluene	20	16	80	85 - 134
Trans-1,2-Dichloroethylene	20	16	80	80 - 138
Trichloroethylene	20	16	80	76 - 135
Trichlorofluoromethane	20	20	100	60 - 149
Vinyl Acetate	20	41	205	38 - 187
Vinyl Chloride	20	19	95	66 - 133
c-1,3-dichloropropene	20	17	85	68 - 149
cis-1,2-Dichloroethylene	20	16	80	76 - 143
t-1,3-Dichloropropene	20	15	75	62 - 160

Comments:

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LABORATORY FORTIFIED DUPLICATE (LFB Dup) RECOVERY

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	20	100	16	50
1,1,1-Trichloroethane	19	95	17	50
1,1,2,2-Tetrachloroethane	18	90	12	50
1,1,2-Trichloro-1,2,2-Trifluoroetha	23	115	14	50
1,1,2-Trichloroethane	19	95	17	50
1,1-Dichloroethylene	19	95	17	52
1,1-Dichloropropene	19	95	11	50
1,1-dichloroethane	19	95	17	50
1,2,3-Trichlorobenzene	19	95	17	50
1,2,3-Trichloropropane	19	95	17	50
1,2,4-Trichlorobenzene	19	95	11	50
1,2,4-Trimethylbenzene	20	100	16	50
1,2-Dibromo-3-Chloropropane	17	85	13	50
1,2-Dibromoethane	19	95	17	50
1,2-Dichlorobenzene	19	95	17	50
1,2-Dichloroethane	18	90	12	50
1,2-Dichloropropane	19	95	17	50
1,3,5-Trimethylbenzene	20	100	16	50
1,3-Dichlorobenzene	19	95	11	50
1,3-Dichloropropane	19	95	17	50
1,4-Dichlorobenzene	20	100	16	50
2,2-Dichloropropane	17	85	0	50
2-Butanone (MEK)	14	70	13	50
2-Chlorotoluene	20	100	16	50
2-Hexanone	15	75	13	50
2-Propanone (acetone)	13	65	27	50
4-Chlorotoluene	20	100	16	50
4-Methyl-2-Pentanone(MIBK)	17	85	6	50
Acrylonitrile	18	90	12	50
Benzene	19	95	17	50
Bromobenzene	20	100	16	50
Bromochloromethane	19	95	17	50
Bromodichloromethane	19	95	17	50
Bromoform	18	90	12	50
Bromomethane	18	90	18	50
Carbon Disulfide	18	90	18	50
Carbon tetrachloride	19	95	17	50
Chlorobenzene	19	95	24	34
Chloroethane	24	120	18	50
Chloroform	19	95	17	50
Chloromethane	20	100	11	50
Dibromochloromethane	19	95	17	50
Dibromomethane	19	95	17	50
Dichlorodifluoromethane	21	105	15	50
Ethyl Ether	18	90	18	50
Ethylbenzene	19	95	17	50
Hexachlorobutadiene	20	100	16	50
Isopropylbenzene	20	100	16	50
M/P Xylene	39	98	17	50
Methyl-t-Butyl Ether	17	85	13	50
Methylene Chloride	19	95	17	50
N-Butylbenzene	20	100	16	50
N-Propylbenzene	20	100	16	50
Naphthalene	17	85	13	50
Ortho Xylene	20	100	16	50
Para-Isopropyltoluene	21	105	21	50

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Sec-Butylbenzene	20	100	16	50
Styrene	20	100	16	50
Tert-Butylbenzene	21	105	21	50
Tetrachloroethylene	20	100	22	50
Tetrahydrofuran	18	90	25	50
Toluene	19	95	17	50
Trans-1,2-Dichloroethylene	19	95	17	50
Trichloroethylene	19	95	17	27
Trichlorofluoromethane	23	115	14	50
Vinyl Acetate	40	200	3	50
Vinyl Chloride	23	115	19	50
c-1,3-dichloropropene	20	100	16	50
cis-1,2-Dichloroethylene	19	95	17	50
t-1,3-Dichloropropene	17	85	13	50

Samples in Batch: AB21087, AB21091

PN. 11080063

USEPA NERL Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 1-082411-095859-0011

DateShipped: 8/24/2011

Lab: New England Regional Laboratory

CarrierName: FedEx

Case#EP009S

Lab Contact: Dan Boudreau

AirbillNo: 875722301340

Cooler # 1

Lab Phone: 617-918-8340

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
EP0427	Blank/ Corey Rousseau	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	292 (HCl), 293 (HCl), 294 (HCl), 295 (HCl) (4)	TB04-0824A	08/24/2011 07:30		
EP0428	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS, VOC-HS, VOC-HS, VOC-HS, VOC-HS, VOC-HS, VOC-HS	370 (HCl), 371 (HCl), 372 (HCl), 373 (HCl), 374 (HCl), 375 (HCl), 376 (HCl), 377 (HCl), 378 (HCl), 379 (HCl), 380 (HCl), 381 (HCl) (12)	VP-5315A	08/24/2011 11:25		
EP0429	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	382 (HCl), 383 (HCl), 384 (HCl), 385 (HCl) (4)	VP-5320A	08/24/2011 11:50		
EP0430	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS, 1,4DIOX(7), 1,4DIOX(7)	398 (HCl), 399 (HCl), 400 (HCl), 401 (HCl), 402 (4 C), 403 (4 C), 404 (4 C) (7)	VP-5325A	08/24/2011 12:20		
EP0432	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	408 (HCl), 409 (HCl), 410 (HCl), 411 (HCl) (4)	VP-5330A	08/24/2011 13:00		
EP0433	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	418 (HCl), 419 (HCl), 420 (HCl), 421 (HCl) (4)	VP-5335A	08/24/2011 13:30		
EP0434	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	450 (HCl), 451 (HCl), 452 (HCl), 453 (HCl) (4)	VP-5340A	08/24/2011 14:20		
EP0435	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	454 (HCl), 455 (HCl), 456 (HCl), 457 (HCl) (4)	VP-5342A	08/24/2011 15:10		

Special Instructions: Please return cooler at your earliest convenience using the included FedEx Airbill, Thank you.	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #
Analysis Key: VOC-HS=VOC Headspace Screening, 1,4DIOX=1,4-dioxane	

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
Shipping	CR	8/24/11	Joe	8/25/11	10:50						

30C



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

September 01, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080068
Project: Commerce Street Plume - Williston, VT
Analysis: VOAs in Water
Analyst: Dan Curran *9/6/11*

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-VOAGCMS9.

Samples were analyzed by GC/MS. Samples were introduced to the GC via a Tekmar pre-concentrator and an Archon autosampler. The analysis SOP is based on US EPA Method 8260B, method 5030B, rev 2.0 SW-846, Rev 2.0, 1996. Method 624, 40CFR Part 136 Appendix A, July 1, 1992, and USEPA CLP SOW for Organic Analysis OLM04.2, 1999.

Date Samples Received by the Laboratory: 08/26/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340.

Sincerely,

Daniel N. Boudreau 9/7/11

Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP-0443
Date of Collection: 8/25/2011
Date of Extraction: 8/31/11
Date of Analysis: 8/31/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21159
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	110	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP-0451
Date of Collection: 8/25/2011
Date of Extraction: 8/31/11
Date of Analysis: 8/31/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21166
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	1.3	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	109	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Blank for SVOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	8/31/11	Volume Purged:	5.0 mL
Date of Analysis:	8/31/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	~6

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	111	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments: Laboratory blank is associated with all samples in this project.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

VOA MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB21166

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
1,1,1,2-Tetrachloroethane	20.0	ND	21	105	67 - 129
1,1,1-Trichloroethane	20.0	ND	23	115	75 - 139
1,1,2,2-Tetrachloroethane	20.0	ND	21	105	50 - 142
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	ND	22	110	55 - 135
1,1,2-Trichloroethane	20.0	ND	22	110	62 - 142
1,1-Dichloroethylene	20.0	ND	23	115	80 - 138
1,1-Dichloropropene	20.0	ND	23	115	73 - 131
1,1-dichloroethane	20.0	ND	23	115	61 - 152
1,2,3-Trichlorobenzene	20.0	ND	21	105	49 - 143
1,2,3-Trichloropropane	20.0	ND	20	100	53 - 135
1,2,4-Trichlorobenzene	20.0	ND	22	110	63 - 131
1,2,4-Trimethylbenzene	20.0	ND	23	115	79 - 142
1,2-Dibromo-3-Chloropropane	20.0	ND	20	100	28 - 122
1,2-Dibromoethane	20.0	ND	21	105	53 - 139
1,2-Dichlorobenzene	20.0	ND	22	110	74 - 129
1,2-Dichloroethane	20.0	ND	22	110	61 - 142
1,2-Dichloropropane	20.0	ND	22	110	71 - 126
1,3,5-Trimethylbenzene	20.0	ND	23	115	77 - 140
1,3-Dichlorobenzene	20.0	ND	22	110	78 - 127
1,3-Dichloropropane	20.0	ND	21	105	63 - 130
1,4-Dichlorobenzene	20.0	ND	22	110	72 - 131
2,2-Dichloropropane	20.0	ND	21	105	50 - 139
2-Butanone (MEK)	20.0	ND	14	70	29 - 163
2-Chlorotoluene	20.0	ND	22	110	74 - 134
2-Hexanone	20.0	ND	15	75	36 - 141
2-Propanone (acetone)	20.0	1.3	11	49	29 - 164
4-Chlorotoluene	20.0	ND	22	110	68 - 141
4-Methyl-2-Pentanone(MIBK)	20.0	ND	20	100	35 - 139
Acrylonitrile	20.0	ND	22	110	42 - 150
Benzene	20.0	ND	22	110	78 - 134
Bromobenzene	20.0	ND	22	110	76 - 126
Bromochloromethane	20.0	ND	22	110	62 - 140
Bromodichloromethane	20.0	ND	22	110	62 - 133
Bromoform	20.0	ND	21	105	31 - 133
Bromomethane	20.0	ND	16	80	58 - 148
Carbon Disulfide	20.0	ND	22	110	66 - 135
Carbon tetrachloride	20.0	ND	22	110	62 - 146
Chlorobenzene	20.0	ND	22	110	74 - 139
Chloroethane	20.0	ND	20	100	65 - 145
Chloroform	20.0	ND	23	115	60 - 144
Chloromethane	20.0	ND	17	85	58 - 134
Dibromochloromethane	20.0	ND	22	110	34 - 140
Dibromomethane	20.0	ND	22	110	67 - 125
Dichlorodifluoromethane	20.0	ND	13	65	30 - 132
Ethyl Ether	20.0	ND	25	125	58 - 145
Ethylbenzene	20.0	ND	22	110	73 - 143
Hexachlorobutadiene	20.0	ND	22	110	56 - 144
Isopropylbenzene	20.0	ND	23	115	73 - 139

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

M/P Xylene	40.0	ND	45	112	79 - 136
Methyl-t-Butyl Ether	20.0	ND	20	100	50 - 144
Methylene Chloride	20.0	ND	22	110	70 - 144
N-Butylbenzene	20.0	ND	23	115	68 - 143
N-Propylbenzene	20.0	ND	23	115	72 - 149
Naphthalene	20.0	ND	19	95	33 - 154
Ortho Xylene	20.0	ND	23	115	80 - 129
Para-Isopropyltoluene	20.0	ND	23	115	71 - 140
Sec-Butylbenzene	20.0	ND	23	115	75 - 148
Styrene	20.0	ND	23	115	61 - 148
Tert-Butylbenzene	20.0	ND	23	115	71 - 139
Tetrachloroethylene	20.0	ND	20	100	45 - 145
Tetrahydrofuran	20.0	ND	20	100	37 - 143
Toluene	20.0	ND	22	110	77 - 142
Trans-1,2-Dichloroethylene	20.0	ND	23	115	79 - 139
Trichloroethylene	20.0	ND	22	110	65 - 143
Trichlorofluoromethane	20.0	ND	21	105	58 - 161
Vinyl Acetate	20.0	ND	34	170	22 - 173
Vinyl Chloride	20.0	ND	18	90	68 - 139
c-1,3-dichloropropene	20.0	ND	23	115	51 - 144
cis-1,2-Dichloroethylene	20.0	ND	23	115	59 - 154
t-1,3-Dichloropropene	20.0	ND	20	100	47 - 145

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sample ID: AB21166

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	20.0	21	105	0	40
1,1,1-Trichloroethane	20.0	21	105	9	16
1,1,2,2-Tetrachloroethane	20.0	20	100	5	40
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	20	100	10	40
1,1,2-Trichloroethane	20.0	21	105	5	40
1,1-Dichloroethylene	20.0	21	105	9	35
1,1-Dichloropropene	20.0	21	105	9	40
1,1-dichloroethane	20.0	21	105	9	40
1,2,3-Trichlorobenzene	20.0	21	105	0	40
1,2,3-Trichloropropane	20.0	20	100	0	40
1,2,4-Trichlorobenzene	20.0	21	105	5	40
1,2,4-Trimethylbenzene	20.0	22	110	4	40
1,2-Dibromo-3-Chloropropane	20.0	19	95	5	40
1,2-Dibromoethane	20.0	21	105	0	40
1,2-Dichlorobenzene	20.0	21	105	5	40
1,2-Dichloroethane	20.0	21	105	5	23
1,2-Dichloropropane	20.0	21	105	5	40
1,3,5-Trimethylbenzene	20.0	22	110	4	40
1,3-Dichlorobenzene	20.0	21	105	5	40
1,3-Dichloropropane	20.0	21	105	0	40
1,4-Dichlorobenzene	20.0	22	110	0	21
2,2-Dichloropropane	20.0	19	95	10	40
2-Butanone (MEK)	20.0	13	65	7	40
2-Chlorotoluene	20.0	21	105	5	40
2-Hexanone	20.0	15	75	0	40
2-Propanone (acetone)	20.0	11	49	0	40
4-Chlorotoluene	20.0	21	105	5	40
4-Methyl-2-Pentanone(MIBK)	20.0	20	100	0	40
Acrylonitrile	20.0	21	105	5	40
Benzene	20.0	21	105	5	14
Bromobenzene	20.0	21	105	5	40
Bromochloromethane	20.0	22	110	0	40
Bromodichloromethane	20.0	21	105	5	21
Bromoform	20.0	20	100	5	40
Bromomethane	20.0	15	75	6	40
Carbon Disulfide	20.0	20	100	10	40
Carbon tetrachloride	20.0	21	105	5	19
Chlorobenzene	20.0	21	105	5	40
Chloroethane	20.0	18	90	11	40
Chloroform	20.0	21	105	9	16
Chloromethane	20.0	15	75	13	40
Dibromochloromethane	20.0	21	105	5	36
Dibromomethane	20.0	21	105	5	40
Dichlorodifluoromethane	20.0	12	60	8	40
Ethyl Ether	20.0	24	120	4	40
Ethylbenzene	20.0	21	105	5	40
Hexachlorobutadiene	20.0	21	105	5	40
Isopropylbenzene	20.0	22	110	4	40
M/P Xylene	40.0	42	105	6	40
Methyl-t-Butyl Ether	20.0	20	100	0	40
Methylene Chloride	20.0	21	105	5	40
N-Butylbenzene	20.0	22	110	4	40
N-Propylbenzene	20.0	22	110	4	40
Naphthalene	20.0	19	95	0	40

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Ortho Xylene	20.0	22	110	4	40
Para-Isopropyltoluene	20.0	22	110	4	40
Sec-Butylbenzene	20.0	22	110	4	40
Styrene	20.0	21	105	9	40
Tert-Butylbenzene	20.0	22	110	4	40
Tetrachloroethylene	20.0	19	95	5	40
Tetrahydrofuran	20.0	20	100	0	40
Toluene	20.0	21	105	5	40
Trans-1,2-Dichloroethylene	20.0	21	105	9	40
Trichloroethylene	20.0	21	105	5	22
Trichlorofluoromethane	20.0	19	95	10	40
Vinyl Acetate	20.0	33	165	3	40
Vinyl Chloride	20.0	17	85	6	19
c-1,3-dichloropropene	20.0	22	110	4	40
cis-1,2-Dichloroethylene	20.0	21	105	9	40
t-1,3-Dichloropropene	20.0	19	95	5	40

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21166

PARAMETER	SAMPLE RESULT	SAMPLE DUPLICATE RESULT	PRECISION RPD	QC LIMITS
	ug/L	ug/L	%	
1,1,1,2-Tetrachloroethane	ND	ND	ND	30
1,1,1-Trichloroethane	ND	ND	ND	30
1,1,2,2-Tetrachloroethane	ND	ND	ND	30
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ND	ND	30
1,1,2-Trichloroethane	ND	ND	ND	30
1,1-Dichloroethylene	ND	ND	ND	30
1,1-Dichloropropene	ND	ND	ND	30
1,1-dichloroethane	ND	ND	ND	30
1,2,3-Trichlorobenzene	ND	ND	ND	30
1,2,3-Trichloropropane	ND	ND	ND	30
1,2,4-Trichlorobenzene	ND	ND	ND	30
1,2,4-Trimethylbenzene	ND	ND	ND	30
1,2-Dibromo-3-Chloropropane	ND	ND	ND	30
1,2-Dibromoethane	ND	ND	ND	30
1,2-Dichlorobenzene	ND	ND	ND	30
1,2-Dichloroethane	ND	ND	ND	30
1,2-Dichloropropane	ND	ND	ND	30
1,3,5-Trimethylbenzene	ND	ND	ND	30
1,3-Dichlorobenzene	ND	ND	ND	30
1,3-Dichloropropane	ND	ND	ND	30
1,4-Dichlorobenzene	ND	ND	ND	30
2,2-Dichloropropane	ND	ND	ND	30
2-Butanone (MEK)	ND	ND	ND	30
2-Chlorotoluene	ND	ND	ND	30
2-Hexanone	ND	ND	ND	30
2-Propanone (acetone)	1.3	1.1	16.7	30
4-Chlorotoluene	ND	ND	ND	30
4-Methyl-2-Pentanone(MIBK)	ND	ND	ND	30
Acrylonitrile	ND	ND	ND	30
Benzene	ND	ND	ND	30
Bromobenzene	ND	ND	ND	30
Bromochloromethane	ND	ND	ND	30
Bromodichloromethane	ND	ND	ND	30
Bromoform	ND	ND	ND	30
Bromomethane	ND	ND	ND	30
Carbon Disulfide	ND	ND	ND	30
Carbon tetrachloride	ND	ND	ND	30
Chlorobenzene	ND	ND	ND	30
Chloroethane	ND	ND	ND	30
Chloroform	ND	ND	ND	30
Chloromethane	ND	ND	ND	30
Dibromochloromethane	ND	ND	ND	30
Dibromomethane	ND	ND	ND	30
Dichlorodifluoromethane	ND	ND	ND	30
Ethyl Ether	ND	ND	ND	30
Ethylbenzene	ND	ND	ND	30
Hexachlorobutadiene	ND	ND	ND	30
Isopropylbenzene	ND	ND	ND	30
M/P Xylene	ND	ND	ND	30
Methyl-t-Butyl Ether	ND	ND	ND	30

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Methylene Chloride	ND	ND	ND	30
N-Butylbenzene	ND	ND	ND	30
N-Propylbenzene	ND	ND	ND	30
Naphthalene	ND	ND	ND	30
Ortho Xylene	ND	ND	ND	30
Para-Isopropyltoluene	ND	ND	ND	30
Sec-Butylbenzene	ND	ND	ND	30
Styrene	ND	ND	ND	30
Tert-Butylbenzene	ND	ND	ND	30
Tetrachloroethylene	ND	ND	ND	30
Tetrahydrofuran	ND	ND	ND	30
Toluene	ND	ND	ND	30
Trans-1,2-Dichloroethylene	ND	ND	ND	30
Trichloroethylene	ND	ND	ND	30
Trichlorofluoromethane	ND	ND	ND	30
Vinyl Acetate	ND	ND	ND	30
Vinyl Chloride	ND	ND	ND	30
c-1,3-dichloropropene	ND	ND	ND	30
cis-1,2-Dichloroethylene	ND	ND	ND	30
t-1,3-Dichloropropene	ND	ND	ND	30

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Fortified Blank (LFB) Results

Commerce Street Plume - Williston, VT

PARAMETER	LFB AMOUNT SPIKED ug/mL	LFB RESULT ug/mL	LFB RECOVERY %	QC LIMITS %
1,1,1,2-Tetrachloroethane	20	22	110	79 - 136
1,1,1-Trichloroethane	20	22	110	75 - 146
1,1,2,2-Tetrachloroethane	20	20	100	62 - 141
1,1,2-Trichloro-1,2,2-Trifluoroeth	20	19	95	56 - 130
1,1,2-Trichloroethane	20	22	110	75 - 138
1,1-Dichloroethylene	20	22	110	75 - 136
1,1-Dichloropropene	20	22	110	77 - 137
1,1-dichloroethane	20	22	110	76 - 142
1,2,3-Trichlorobenzene	20	21	105	64 - 143
1,2,3-Trichloropropane	20	21	105	66 - 133
1,2,4-Trichlorobenzene	20	21	105	80 - 131
1,2,4-Trimethylbenzene	20	23	115	74 - 155
1,2-Dibromo-3-Chloropropane	20	19	95	37 - 139
1,2-Dibromoethane	20	21	105	72 - 135
1,2-Dichlorobenzene	20	22	110	85 - 128
1,2-Dichloroethane	20	21	105	74 - 138
1,2-Dichloropropane	20	22	110	83 - 124
1,3,5-Trimethylbenzene	20	23	115	80 - 145
1,3-Dichlorobenzene	20	22	110	84 - 130
1,3-Dichloropropane	20	21	105	77 - 129
1,4-Dichlorobenzene	20	22	110	82 - 128
2,2-Dichloropropane	20	20	100	32 - 171
2-Butanone (MEK)	20	18	90	38 - 179
2-Chlorotoluene	20	22	110	78 - 134
2-Hexanone	20	19	95	45 - 158
2-Propanone (acetone)	20	17	85	14 - 209
4-Chlorotoluene	20	22	110	75 - 144
4-Methyl-2-Pentanone(MIBK)	20	20	100	40 - 144
Acrylonitrile	20	22	110	52 - 154
Benzene	20	22	110	83 - 130
Bromobenzene	20	22	110	85 - 126
Bromochloromethane	20	22	110	69 - 137
Bromodichloromethane	20	22	110	70 - 143
Bromoform	20	21	105	51 - 136
Bromomethane	20	15	75	65 - 140
Carbon Disulfide	20	21	105	68 - 140
Carbon tetrachloride	20	21	105	70 - 144
Chlorobenzene	20	22	110	84 - 131
Chloroethane	20	20	100	70 - 134
Chloroform	20	22	110	76 - 141
Chloromethane	20	16	80	63 - 123
Dibromochloromethane	20	21	105	39 - 154
Dibromomethane	20	21	105	79 - 124
Dichlorodifluoromethane	20	11	55	37 - 117
Ethyl Ether	20	21	105	67 - 140
Ethylbenzene	20	22	110	81 - 133
Hexachlorobutadiene	20	21	105	68 - 146
Isopropylbenzene	20	23	115	78 - 137
M/P Xylene	40	44	110	68 - 155
Methyl-t-Butyl Ether	20	20	100	63 - 144
Methylene Chloride	20	22	110	75 - 140
N-Butylbenzene	20	23	115	69 - 147
N-Propylbenzene	20	22	110	76 - 138

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Naphthalene	20	19	95	53 - 155
Ortho Xylene	20	23	115	85 - 135
Para-Isopropyltoluene	20	23	115	77 - 141
Sec-Butylbenzene	20	23	115	80 - 141
Styrene	20	23	115	82 - 139
Tert-Butylbenzene	20	23	115	75 - 144
Tetrachloroethylene	20	24	120	32 - 173
Tetrahydrofuran	20	20	100	47 - 149
Toluene	20	21	105	85 - 134
Trans-1,2-Dichloroethylene	20	22	110	80 - 138
Trichloroethylene	20	21	105	76 - 135
Trichlorofluoromethane	20	18	90	60 - 149
Vinyl Acetate	20	32	160	38 - 187
Vinyl Chloride	20	18	90	66 - 133
c-1,3-dichloropropene	20	22	110	68 - 149
cis-1,2-Dichloroethylene	20	23	115	76 - 143
t-1,3-Dichloropropene	20	19	95	62 - 160

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED DUPLICATE (LFB Dup) RECOVERY

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	20	100	10	50
1,1,1-Trichloroethane	21	105	5	50
1,1,2,2-Tetrachloroethane	20	100	0	50
1,1,2-Trichloro-1,2,2-Trifluoroetha	18	90	5	50
1,1,2-Trichloroethane	20	100	10	50
1,1-Dichloroethylene	20	100	10	52
1,1-Dichloropropene	20	100	10	50
1,1-dichloroethane	21	105	5	50
1,2,3-Trichlorobenzene	20	100	5	50
1,2,3-Trichloropropane	20	100	5	50
1,2,4-Trichlorobenzene	20	100	5	50
1,2,4-Trimethylbenzene	21	105	9	50
1,2-Dibromo-3-Chloropropane	19	95	0	50
1,2-Dibromoethane	21	105	0	50
1,2-Dichlorobenzene	20	100	10	50
1,2-Dichloroethane	20	100	5	50
1,2-Dichloropropane	20	100	10	50
1,3,5-Trimethylbenzene	21	105	9	50
1,3-Dichlorobenzene	20	100	10	50
1,3-Dichloropropane	20	100	5	50
1,4-Dichlorobenzene	21	105	5	50
2,2-Dichloropropane	18	90	11	50
2-Butanone (MEK)	19	95	5	50
2-Chlorotoluene	20	100	10	50
2-Hexanone	19	95	0	50
2-Propanone (acetone)	18	90	6	50
4-Chlorotoluene	20	100	10	50
4-Methyl-2-Pentanone(MIBK)	20	100	0	50
Acrylonitrile	21	105	5	50
Benzene	20	100	10	50
Bromobenzene	21	105	5	50
Bromochloromethane	21	105	5	50
Bromodichloromethane	21	105	5	50
Bromoform	19	95	10	50
Bromomethane	15	75	0	50
Carbon Disulfide	19	95	10	50
Carbon tetrachloride	20	100	5	50
Chlorobenzene	20	100	10	34
Chloroethane	19	95	5	50
Chloroform	21	105	5	50
Chloromethane	15	75	7	50
Dibromochloromethane	20	100	5	50
Dibromomethane	20	100	5	50
Dichlorodifluoromethane	10	50	10	50
Ethyl Ether	20	100	5	50
Ethylbenzene	20	100	10	50
Hexachlorobutadiene	20	100	5	50
Isopropylbenzene	21	105	9	50
M/P Xylene	41	103	7	50
Methyl-t-Butyl Ether	20	100	0	50
Methylene Chloride	20	100	10	50
N-Butylbenzene	21	105	9	50
N-Propylbenzene	20	100	10	50
Naphthalene	19	95	0	50
Ortho Xylene	21	105	9	50
Para-Isopropyltoluene	21	105	9	50

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sec-Butylbenzene	21	105	9	50
Styrene	21	105	9	50
Tert-Butylbenzene	21	105	9	50
Tetrachloroethylene	23	115	4	50
Tetrahydrofuran	19	95	5	50
Toluene	20	100	5	50
Trans-1,2-Dichloroethylene	21	105	5	50
Trichloroethylene	20	100	5	27
Trichlorofluoromethane	17	85	6	50
Vinyl Acetate	30	150	7	50
Vinyl Chloride	16	80	12	50
c-1,3-dichloropropene	21	105	5	50
cis-1,2-Dichloroethylene	21	105	9	50
t-1,3-Dichloropropene	18	90	5	50

Samples in Batch: AB21159, AB21166



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

August 31, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080072
Project: Commerce Street Plume - Williston, VT
Analysis: VOAs in Water
Analyst: Dan Curran *DC 8/31/11*

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-VOAGCMS9.

Samples were analyzed by GC/MS. Samples were introduced to the GC via a Tekmar pre-concentrator and an Archon autosampler. The analysis SOP is based on US EPA Method 8260B, method 5030B, rev 2.0 SW-846, Rev 2.0, 1996. Method 624, 40CFR Part 136 Appendix A, July 1, 1992, and USEPA CLP SOW for Organic Analysis OLM04.2, 1999.

Date Samples Received by the Laboratory: 08/29/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340.

Sincerely,

Daniel N. Boudreau 9/1/11
Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions, or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0463	Lab Sample ID:	AB21210
Date of Collection:	8/26/2011	Matrix:	GW
Date of Extraction:	8/30/11	Volume Purged:	5 mL
Date of Analysis:	8/30/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	13	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	2.1	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	107	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Blank for SVOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	8/30/11	Volume Purged:	5.0 mL
Date of Analysis:	8/30/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0467	Lab Sample ID:	AB21214
Date of Collection:	8/26/2011	Matrix:	GW
Date of Extraction:	8/30/11	Volume Purged:	5 mL
Date of Analysis:	8/30/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	20
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	20	
71-55-6	1,1,1-Trichloroethane	ND	20	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	20	
79-00-5	1,1,2-Trichloroethane	ND	20	
75-35-4	1,1-Dichloroethylene	ND	20	
563-58-6	1,1-Dichloropropene	ND	20	
75-34-3	1,1-dichloroethane	ND	20	
87-61-6	1,2,3-Trichlorobenzene	ND	20	
96-18-4	1,2,3-Trichloropropane	ND	20	
120-82-1	1,2,4-Trichlorobenzene	ND	20	
95-63-6	1,2,4-Trimethylbenzene	ND	20	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	20	
106-93-4	1,2-Dibromoethane	ND	20	
95-50-1	1,2-Dichlorobenzene	ND	20	
107-06-2	1,2-Dichloroethane	ND	20	
78-87-5	1,2-Dichloropropane	ND	20	
108-67-8	1,3,5-Trimethylbenzene	ND	20	
541-73-1	1,3-Dichlorobenzene	ND	20	
142-28-9	1,3-Dichloropropane	ND	20	
106-46-7	1,4-Dichlorobenzene	ND	20	
594-20-7	2,2-Dichloropropane	ND	20	
78-93-3	2-Butanone (MEK)	ND	20	
95-49-8	2-Chlorotoluene	ND	20	
591-78-6	2-Hexanone	ND	20	
67-64-1	2-Propanone (acetone)	ND	20	
106-43-4	4-Chlorotoluene	ND	20	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	20	
107-13-1	Acrylonitrile	ND	20	
71-43-2	Benzene	ND	20	
108-86-1	Bromobenzene	ND	20	
74-97-5	Bromochloromethane	ND	20	
75-27-4	Bromodichloromethane	ND	20	
75-25-2	Bromoform	ND	20	
74-83-9	Bromomethane	ND	20	
75-15-0	Carbon Disulfide	ND	20	
56-23-5	Carbon tetrachloride	ND	20	
108-90-7	Chlorobenzene	ND	20	
75-00-3	Chloroethane	ND	20	

67-66-3	Chloroform	ND	20
74-87-3	Chloromethane	ND	20
124-48-1	Dibromochloromethane	ND	20
74-95-3	Dibromomethane	ND	20
75-71-8	Dichlorodifluoromethane	ND	20
60-29-7	Ethyl Ether	ND	20
100-41-4	Ethylbenzene	ND	20
87-68-3	Hexachlorobutadiene	ND	20
98-82-8	Isopropylbenzene	ND	20
108-38-3/106-42-	M/P Xylene	ND	40
1634-04-4	Methyl-t-Butyl Ether	ND	20
75-09-2	Methylene Chloride	ND	20
104-51-8	N-Butylbenzene	ND	20
103-65-1	N-Propylbenzene	ND	20
91-20-3	Naphthalene	ND	20
95-47-6	Ortho Xylene	ND	20
99-87-6	Para-Isopropyltoluene	ND	20
135-98-8	Sec-Butylbenzene	ND	20
100-42-5	Styrene	ND	20
98-06-6	Tert-Butylbenzene	ND	20
127-18-4	Tetrachloroethylene	ND	20
109-99-9	Tetrahydrofuran	ND	20
108-88-3	Toluene	ND	20
156-60-5	Trans-1,2-Dichloroethylene	ND	20
79-01-6	Trichloroethylene	410	20
75-69-4	Trichlorofluoromethane	ND	20
108-05-4	Vinyl Acetate	ND	20
75-01-4	Vinyl Chloride	ND	20
10061-01-5	c-1,3-dichloropropene	ND	20
156-59-2	cis-1,2-Dichloroethylene	ND	20
10061-02-6	t-1,3-Dichloropropene	ND	20

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	108	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

VOA MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB21210

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
1,1,1,2-Tetrachloroethane	20.0	ND	21	105	67 - 129
1,1,1-Trichloroethane	20.0	ND	21	105	75 - 139
1,1,2,2-Tetrachloroethane	20.0	ND	21	105	50 - 142
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	ND	21	105	55 - 135
1,1,2-Trichloroethane	20.0	ND	21	105	62 - 142
1,1-Dichloroethylene	20.0	ND	20	100	80 - 138
1,1-Dichloropropene	20.0	ND	21	105	73 - 131
1,1-dichloroethane	20.0	ND	21	105	61 - 152
1,2,3-Trichlorobenzene	20.0	ND	21	105	49 - 143
1,2,3-Trichloropropane	20.0	ND	20	100	53 - 135
1,2,4-Trichlorobenzene	20.0	ND	21	105	63 - 131
1,2,4-Trimethylbenzene	20.0	ND	21	105	79 - 142
1,2-Dibromo-3-Chloropropane	20.0	ND	20	100	28 - 122
1,2-Dibromoethane	20.0	ND	21	105	53 - 139
1,2-Dichlorobenzene	20.0	ND	21	105	74 - 129
1,2-Dichloroethane	20.0	ND	20	100	61 - 142
1,2-Dichloropropane	20.0	ND	21	105	71 - 126
1,3,5-Trimethylbenzene	20.0	ND	21	105	77 - 140
1,3-Dichlorobenzene	20.0	ND	21	105	78 - 127
1,3-Dichloropropane	20.0	ND	21	105	63 - 130
1,4-Dichlorobenzene	20.0	ND	21	105	72 - 131
2,2-Dichloropropane	20.0	ND	21	105	50 - 139
2-Butanone (MEK)	20.0	ND	13	65	29 - 163
2-Chlorotoluene	20.0	ND	21	105	74 - 134
2-Hexanone	20.0	ND	15	75	36 - 141
2-Propanone (acetone)	20.0	ND	11	55	29 - 164
4-Chlorotoluene	20.0	ND	21	105	68 - 141
4-Methyl-2-Pentanone(MIBK)	20.0	ND	20	100	35 - 139
Acrylonitrile	20.0	ND	22	110	42 - 150
Benzene	20.0	ND	21	105	78 - 134
Bromobenzene	20.0	ND	21	105	76 - 126
Bromochloromethane	20.0	ND	21	105	62 - 140
Bromodichloromethane	20.0	ND	21	105	62 - 133
Bromoform	20.0	ND	20	100	31 - 133
Bromomethane	20.0	ND	15	75	58 - 148
Carbon Disulfide	20.0	ND	20	100	66 - 135
Carbon tetrachloride	20.0	ND	20	100	62 - 146
Chlorobenzene	20.0	ND	21	105	74 - 139
Chloroethane	20.0	ND	21	105	65 - 145
Chloroform	20.0	ND	21	105	60 - 144
Chloromethane	20.0	ND	19	95	58 - 134
Dibromochloromethane	20.0	ND	21	105	34 - 140
Dibromomethane	20.0	ND	21	105	67 - 125
Dichlorodifluoromethane	20.0	12.5	27	73	30 - 132
Ethyl Ether	20.0	ND	23	115	58 - 145
Ethylbenzene	20.0	ND	21	105	73 - 143
Hexachlorobutadiene	20.0	ND	21	105	56 - 144
Isopropylbenzene	20.0	ND	22	110	73 - 139

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M/P Xylene	40.0	ND	42	105	79 - 136
Methyl-t-Butyl Ether	20.0	ND	19	95	50 - 144
Methylene Chloride	20.0	ND	21	105	70 - 144
N-Butylbenzene	20.0	ND	22	110	68 - 143
N-Propylbenzene	20.0	ND	22	110	72 - 149
Naphthalene	20.0	ND	19	95	33 - 154
Ortho Xylene	20.0	ND	22	110	80 - 129
Para-Isopropyltoluene	20.0	ND	22	110	71 - 140
Sec-Butylbenzene	20.0	ND	22	110	75 - 148
Styrene	20.0	ND	22	110	61 - 148
Tert-Butylbenzene	20.0	ND	22	110	71 - 139
Tetrachloroethylene	20.0	ND	19	95	45 - 145
Tetrahydrofuran	20.0	ND	20	100	37 - 143
Toluene	20.0	ND	21	105	77 - 142
Trans-1,2-Dichloroethylene	20.0	ND	21	105	79 - 139
Trichloroethylene	20.0	2.1	22	100	65 - 143
Trichlorofluoromethane	20.0	ND	21	105	58 - 161
Vinyl Acetate	20.0	ND	39	195	22 - 173
Vinyl Chloride	20.0	ND	20	100	68 - 139
c-1,3-dichloropropene	20.0	ND	22	110	51 - 144
cis-1,2-Dichloroethylene	20.0	ND	22	110	59 - 154
t-1,3-Dichloropropene	20.0	ND	19	95	47 - 145

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sample ID: AB21210

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	20.0	21	105	0.00	40
1,1,1-Trichloroethane	20.0	22	110	4.65	16
1,1,2,2-Tetrachloroethane	20.0	20	100	4.88	40
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	23	115	9.09	40
1,1,2-Trichloroethane	20.0	21	105	0.00	40
1,1-Dichloroethylene	20.0	22	110	9.52	35
1,1-Dichloropropene	20.0	22	110	4.65	40
1,1-dichloroethane	20.0	22	110	4.65	40
1,2,3-Trichlorobenzene	20.0	21	105	0.00	40
1,2,3-Trichloropropane	20.0	21	105	4.88	40
1,2,4-Trichlorobenzene	20.0	21	105	0.00	40
1,2,4-Trimethylbenzene	20.0	22	110	4.65	40
1,2-Dibromo-3-Chloropropane	20.0	20	100	0.00	40
1,2-Dibromoethane	20.0	21	105	0.00	40
1,2-Dichlorobenzene	20.0	22	110	4.65	40
1,2-Dichloroethane	20.0	21	105	4.88	23
1,2-Dichloropropane	20.0	22	110	4.65	40
1,3,5-Trimethylbenzene	20.0	22	110	4.65	40
1,3-Dichlorobenzene	20.0	22	110	4.65	40
1,3-Dichloropropane	20.0	21	105	0.00	40
1,4-Dichlorobenzene	20.0	22	110	4.65	21
2,2-Dichloropropane	20.0	22	110	4.65	40
2-Butanone (MEK)	20.0	13	65.0	0.00	40
2-Chlorotoluene	20.0	22	110	4.65	40
2-Hexanone	20.0	15	75.0	0.00	40
2-Propanone (acetone)	20.0	10	50.0	9.52	40
4-Chlorotoluene	20.0	22	110	4.65	40
4-Methyl-2-Pentanone(MIBK)	20.0	20	100	0.00	40
Acrylonitrile	20.0	21	105	4.65	40
Benzene	20.0	21	105	0.00	14
Bromobenzene	20.0	22	110	4.65	40
Bromochloromethane	20.0	21	105	0.00	40
Bromodichloromethane	20.0	21	105	0.00	21
Bromoform	20.0	20	100	0.00	40
Bromomethane	20.0	17	85.0	12.5	40
Carbon Disulfide	20.0	21	105	4.88	40
Carbon tetrachloride	20.0	22	110	9.52	19
Chlorobenzene	20.0	21	105	0.00	40
Chloroethane	20.0	22	110	4.65	40
Chloroform	20.0	21	105	0.00	16
Chloromethane	20.0	19	95.0	0.00	40
Dibromochloromethane	20.0	21	105	0.00	36
Dibromomethane	20.0	21	105	0.00	40
Dichlorodifluoromethane	20.0	29	82.5	12.9	40
Ethyl Ether	20.0	23	115	0.00	40
Ethylbenzene	20.0	22	110	4.65	40
Hexachlorobutadiene	20.0	22	110	4.65	40
Isopropylbenzene	20.0	23	115	4.44	40
M/P Xylene	40.0	43	108	2.82	40
Methyl-t-Butyl Ether	20.0	20	100	5.13	40
Methylene Chloride	20.0	21	105	0.00	40
N-Butylbenzene	20.0	23	115	4.44	40
N-Propylbenzene	20.0	22	110	0.00	40
Naphthalene	20.0	19	95.0	0.00	40

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Ortho Xylene	20.0	23	115	4.44	40
Para-Isopropyltoluene	20.0	23	115	4.44	40
Sec-Butylbenzene	20.0	23	115	4.44	40
Styrene	20.0	22	110	0.00	40
Tert-Butylbenzene	20.0	23	115	4.44	40
Tetrachloroethylene	20.0	20	100	5.13	40
Tetrahydrofuran	20.0	20	100	0.00	40
Toluene	20.0	21	105	0.00	40
Trans-1,2-Dichloroethylene	20.0	22	110	4.65	40
Trichloroethylene	20.0	23	104	4.42	22
Trichlorofluoromethane	20.0	22	110	4.65	40
Vinyl Acetate	20.0	40	200	2.53	40
Vinyl Chloride	20.0	21	105	4.88	19
c-1,3-dichloropropene	20.0	22	110	0.00	40
cis-1,2-Dichloroethylene	20.0	22	110	0.00	40
t-1,3-Dichloropropene	20.0	19	95.0	0.00	40

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21210

PARAMETER	SAMPLE RESULT	SAMPLE DUPLICATE RESULT	PRECISION RPD	QC LIMITS
	ug/L	ug/L	%	
1,1,1,2-Tetrachloroethane	ND	ND	ND	30
1,1,1-Trichloroethane	ND	ND	ND	30
1,1,2,2-Tetrachloroethane	ND	ND	ND	30
1,1,2-Trichloro-1,2,2-Trifluoroeth:	ND	ND	ND	30
1,1,2-Trichloroethane	ND	ND	ND	30
1,1-Dichloroethylene	ND	ND	ND	30
1,1-Dichloropropene	ND	ND	ND	30
1,1-dichloroethane	ND	ND	ND	30
1,2,3-Trichlorobenzene	ND	ND	ND	30
1,2,3-Trichloropropane	ND	ND	ND	30
1,2,4-Trichlorobenzene	ND	ND	ND	30
1,2,4-Trimethylbenzene	ND	ND	ND	30
1,2-Dibromo-3-Chloropropane	ND	ND	ND	30
1,2-Dibromoethane	ND	ND	ND	30
1,2-Dichlorobenzene	ND	ND	ND	30
1,2-Dichloroethane	ND	ND	ND	30
1,2-Dichloropropane	ND	ND	ND	30
1,3,5-Trimethylbenzene	ND	ND	ND	30
1,3-Dichlorobenzene	ND	ND	ND	30
1,3-Dichloropropane	ND	ND	ND	30
1,4-Dichlorobenzene	ND	ND	ND	30
2,2-Dichloropropane	ND	ND	ND	30
2-Butanone (MEK)	ND	ND	ND	30
2-Chlorotoluene	ND	ND	ND	30
2-Hexanone	ND	ND	ND	30
2-Propanone (acetone)	ND	ND	ND	30
4-Chlorotoluene	ND	ND	ND	30
4-Methyl-2-Pentanone(MIBK)	ND	ND	ND	30
Acrylonitrile	ND	ND	ND	30
Benzene	ND	ND	ND	30
Bromobenzene	ND	ND	ND	30
Bromochloromethane	ND	ND	ND	30
Bromodichloromethane	ND	ND	ND	30
Bromoform	ND	ND	ND	30
Bromomethane	ND	ND	ND	30
Carbon Disulfide	ND	ND	ND	30
Carbon tetrachloride	ND	ND	ND	30
Chlorobenzene	ND	ND	ND	30
Chloroethane	ND	ND	ND	30
Chloroform	ND	ND	ND	30
Chloromethane	ND	ND	ND	30
Dibromochloromethane	ND	ND	ND	30
Dibromomethane	ND	ND	ND	30
Dichlorodifluoromethane	12.5	13.0	3.92	30
Ethyl Ether	ND	ND	ND	30
Ethylbenzene	ND	ND	ND	30
Hexachlorobutadiene	ND	ND	ND	30
Isopropylbenzene	ND	ND	ND	30
M/P Xylene	ND	ND	ND	30
Methyl-t-Butyl Ether	ND	ND	ND	30

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Methylene Chloride	ND	ND	ND	30
N-Butylbenzene	ND	ND	ND	30
N-Propylbenzene	ND	ND	ND	30
Naphthalene	ND	ND	ND	30
Ortho Xylene	ND	ND	ND	30
Para-Isopropyltoluene	ND	ND	ND	30
Sec-Butylbenzene	ND	ND	ND	30
Styrene	ND	ND	ND	30
Tert-Butylbenzene	ND	ND	ND	30
Tetrachloroethylene	ND	ND	ND	30
Tetrahydrofuran	ND	ND	ND	30
Toluene	ND	ND	ND	30
Trans-1,2-Dichloroethylene	ND	ND	ND	30
Trichloroethylene	2.1	2.09	0.477	30
Trichlorofluoromethane	ND	ND	ND	30
Vinyl Acetate	ND	ND	ND	30
Vinyl Chloride	ND	ND	ND	30
c-1,3-dichloropropene	ND	ND	ND	30
cis-1,2-Dichloroethylene	ND	ND	ND	30
t-1,3-Dichloropropene	ND	ND	ND	30

US ENVIRONMENTAL PROTECTION AGENCY
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Laboratory Fortified Blank (LFB) Results

Commerce Street Plume - Williston, VT

PARAMETER	LFB AMOUNT SPIKED ug/mL	LFB RESULT ug/mL	LFB RECOVERY %	QC LIMITS %
1,1,1,2-Tetrachloroethane	20	19	95	79 - 136
1,1,1-Trichloroethane	20	18	90	75 - 146
1,1,2,2-Tetrachloroethane	20	18	90	62 - 141
1,1,2-Trichloro-1,2,2-Trifluoroeth	20	19	95	56 - 130
1,1,2-Trichloroethane	20	19	95	75 - 138
1,1-Dichloroethylene	20	18	90	75 - 136
1,1-Dichloropropene	20	19	95	77 - 137
1,1-dichloroethane	20	18	90	76 - 142
1,2,3-Trichlorobenzene	20	19	95	64 - 143
1,2,3-Trichloropropane	20	18	90	66 - 133
1,2,4-Trichlorobenzene	20	19	95	80 - 131
1,2,4-Trimethylbenzene	20	19	95	74 - 155
1,2-Dibromo-3-Chloropropane	20	18	90	37 - 139
1,2-Dibromoethane	20	19	95	72 - 135
1,2-Dichlorobenzene	20	19	95	85 - 128
1,2-Dichloroethane	20	18	90	74 - 138
1,2-Dichloropropane	20	19	95	83 - 124
1,3,5-Trimethylbenzene	20	19	95	80 - 145
1,3-Dichlorobenzene	20	19	95	84 - 130
1,3-Dichloropropane	20	19	95	77 - 129
1,4-Dichlorobenzene	20	19	95	82 - 128
2,2-Dichloropropane	20	20	100	32 - 171
2-Butanone (MEK)	20	19	95	38 - 179
2-Chlorotoluene	20	19	95	78 - 134
2-Hexanone	20	21	105	45 - 158
2-Propanone (acetone)	20	19	95	14 - 209
4-Chlorotoluene	20	19	95	75 - 144
4-Methyl-2-Pentanone(MIBK)	20	19	95	40 - 144
Acrylonitrile	20	18	90	52 - 154
Benzene	20	18	90	83 - 130
Bromobenzene	20	19	95	85 - 126
Bromochloromethane	20	19	95	69 - 137
Bromodichloromethane	20	19	95	70 - 143
Bromoform	20	18	90	51 - 136
Bromomethane	20	13	65	65 - 140
Carbon Disulfide	20	18	90	68 - 140
Carbon tetrachloride	20	19	95	70 - 144
Chlorobenzene	20	19	95	84 - 131
Chloroethane	20	18	90	70 - 134
Chloroform	20	18	90	76 - 141
Chloromethane	20	16	80	63 - 123
Dibromochloromethane	20	19	95	39 - 154
Dibromomethane	20	19	95	79 - 124
Dichlorodifluoromethane	20	16	80	37 - 117
Ethyl Ether	20	18	90	67 - 140
Ethylbenzene	20	19	95	81 - 133
Hexachlorobutadiene	20	20	100	68 - 146
Isopropylbenzene	20	19	95	78 - 137
M/P Xylene	40	38	95	68 - 155
Methyl-t-Butyl Ether	20	17	85	63 - 144
Methylene Chloride	20	18	90	75 - 140
N-Butylbenzene	20	20	100	69 - 147
N-Propylbenzene	20	19	95	76 - 138

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Naphthalene	20	17	85	53 - 155
Ortho Xylene	20	20	100	85 - 135
Para-Isopropyltoluene	20	20	100	77 - 141
Sec-Butylbenzene	20	19	95	80 - 141
Styrene	20	20	100	82 - 139
Tert-Butylbenzene	20	20	100	75 - 144
Tetrachloroethylene	20	17	85	32 - 173
Tetrahydrofuran	20	17	85	47 - 149
Toluene	20	18	90	85 - 134
Trans-1,2-Dichloroethylene	20	18	90	80 - 138
Trichloroethylene	20	18	90	76 - 135
Trichlorofluoromethane	20	18	90	60 - 149
Vinyl Acetate	20	35	175	38 - 187
Vinyl Chloride	20	17	85	66 - 133
c-1,3-dichloropropene	20	20	100	68 - 149
cis-1,2-Dichloroethylene	20	19	95	76 - 143
t-1,3-Dichloropropene	20	17	85	62 - 160

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED DUPLICATE (LFB Dup) RECOVERY

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	21	105	10	50
1,1,1-Trichloroethane	21	105	15	50
1,1,2,2-Tetrachloroethane	20	100	11	50
1,1,2-Trichloro-1,2,2-Trifluoroetha	21	105	10	50
1,1,2-Trichloroethane	20	100	5	50
1,1-Dichloroethylene	21	105	15	52
1,1-Dichloropropene	21	105	10	50
1,1-dichloroethane	22	110	20	50
1,2,3-Trichlorobenzene	21	105	10	50
1,2,3-Trichloropropane	20	100	11	50
1,2,4-Trichlorobenzene	21	105	10	50
1,2,4-Trimethylbenzene	22	110	15	50
1,2-Dibromo-3-Chloropropane	19	95	5	50
1,2-Dibromoethane	20	100	5	50
1,2-Dichlorobenzene	21	105	10	50
1,2-Dichloroethane	20	100	11	50
1,2-Dichloropropane	21	105	10	50
1,3,5-Trimethylbenzene	21	105	10	50
1,3-Dichlorobenzene	21	105	10	50
1,3-Dichloropropane	20	100	5	50
1,4-Dichlorobenzene	21	105	10	50
2,2-Dichloropropane	19	95	5	50
2-Butanone (MEK)	17	85	11	50
2-Chlorotoluene	21	105	10	50
2-Hexanone	18	90	15	50
2-Propanone (acetone)	16	80	17	50
4-Chlorotoluene	21	105	10	50
4-Methyl-2-Pentanone(MIBK)	19	95	0	50
Acrylonitrile	22	110	20	50
Benzene	21	105	15	50
Bromobenzene	21	105	10	50
Bromochloromethane	22	110	15	50
Bromodichloromethane	21	105	10	50
Bromoform	20	100	11	50
Bromomethane	16	80	21	50
Carbon Disulfide	20	100	11	50
Carbon tetrachloride	21	105	10	50
Chlorobenzene	21	105	10	34
Chloroethane	21	105	15	50
Chloroform	22	110	20	50
Chloromethane	19	95	17	50
Dibromochloromethane	20	100	5	50
Dibromomethane	21	105	10	50
Dichlorodifluoromethane	18	90	12	50
Ethyl Ether	20	100	11	50
Ethylbenzene	21	105	10	50
Hexachlorobutadiene	21	105	5	50
Isopropylbenzene	22	110	15	50
M/P Xylene	42	105	10	50
Methyl-t-Butyl Ether	20	100	16	50
Methylene Chloride	21	105	15	50
N-Butylbenzene	21	105	5	50
N-Propylbenzene	22	110	15	50
Naphthalene	19	95	11	50
Ortho Xylene	22	110	10	50
Para-Isopropyltoluene	22	110	10	50

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Sec-Butylbenzene	22	110	15	50
Styrene	22	110	10	50
Tert-Butylbenzene	22	110	10	50
Tetrachloroethylene	23	115	30	50
Tetrahydrofuran	19	95	11	50
Toluene	21	105	15	50
Trans-1,2-Dichloroethylene	22	110	20	50
Trichloroethylene	21	105	15	27
Trichlorofluoromethane	21	105	15	50
Vinyl Acetate	32	160	9	50
Vinyl Chloride	21	105	21	50
c-1,3-dichloropropene	21	105	5	50
cis-1,2-Dichloroethylene	22	110	15	50
t-1,3-Dichloropropene	18	90	6	50

Samples in Batch: AB21210, AB21214



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

September 07, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080075
Project: Commerce Street Plume - Williston, VT
Analysis: VOAs in Water
Analyst: Dan Curran *pc 9/7/11*

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region 1 SOP, EIASOP-VOAGCMS9.

Samples were analyzed by GC/MS. Samples were introduced to the GC via a Tekmar pre-concentrator and an Archon autosampler. The analysis SOP is based on US EPA Method 8260B, method 5030B, rev 2.0 SW-846, Rev 2.0, 1996. Method 624, 40CFR Part 136 Appendix A, July 1, 1992, and USEPA CLP SOW for Organic Analysis OLM04.2, 1999.

Date Samples Received by the Laboratory: 08/31/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau 9/8/11
Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0471	Lab Sample ID:	AB21283
Date of Collection:	8/29/2011	Matrix:	GW
Date of Extraction:	8/31/11	Volume Purged:	5 mL
Date of Analysis:	8/31/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	1.1	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	42	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	106	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Blank for \$VOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	8/31/11	Volume Purged:	5.0 mL
Date of Analysis:	8/31/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	~6

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	38	74 - 136
Toluene-D8	36	85 - 118
1,4-Bromofluorobenzene	34	78 - 111

Comments: Blank associated with samples AB21283, AB21284, AB21283 DUP, AB21285 and AB21286.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0473	Lab Sample ID:	AB21284
Date of Collection:	8/30/2011	Matrix:	GW
Date of Extraction:	8/31/11	Volume Purged:	5 mL
Date of Analysis:	8/31/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	3.0	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	1.1	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	105	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0474
Date of Collection: 8/30/2011
Date of Extraction: 8/31/11
Date of Analysis: 8/31/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21285
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 50
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	
71-55-6	1,1,1-Trichloroethane	ND	50	
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50	
79-00-5	1,1,2-Trichloroethane	ND	50	
75-35-4	1,1-Dichloroethylene	ND	50	
563-58-6	1,1-Dichloropropene	ND	50	
75-34-3	1,1-dichloroethane	ND	50	
87-61-6	1,2,3-Trichlorobenzene	ND	50	
96-18-4	1,2,3-Trichloropropane	ND	50	
120-82-1	1,2,4-Trichlorobenzene	ND	50	
95-63-6	1,2,4-Trimethylbenzene	ND	50	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	50	
106-93-4	1,2-Dibromoethane	ND	50	
95-50-1	1,2-Dichlorobenzene	ND	50	
107-06-2	1,2-Dichloroethane	ND	50	
78-87-5	1,2-Dichloropropane	ND	50	
108-67-8	1,3,5-Trimethylbenzene	ND	50	
541-73-1	1,3-Dichlorobenzene	ND	50	
142-28-9	1,3-Dichloropropane	ND	50	
106-46-7	1,4-Dichlorobenzene	ND	50	
594-20-7	2,2-Dichloropropane	ND	50	
78-93-3	2-Butanone (MEK)	ND	50	
95-49-8	2-Chlorotoluene	ND	50	
591-78-6	2-Hexanone	ND	50	
67-64-1	2-Propanone (acetone)	ND	50	
106-43-4	4-Chlorotoluene	ND	50	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	50	
107-13-1	Acrylonitrile	ND	50	
71-43-2	Benzene	ND	50	
108-86-1	Bromobenzene	ND	50	
74-97-5	Bromochloromethane	ND	50	
75-27-4	Bromodichloromethane	ND	50	
75-25-2	Bromoform	ND	50	
74-83-9	Bromomethane	ND	50	
75-15-0	Carbon Disulfide	ND	50	
56-23-5	Carbon tetrachloride	ND	50	
108-90-7	Chlorobenzene	ND	50	
75-00-3	Chloroethane	ND	50	

67-66-3	Chloroform	ND	50
74-87-3	Chloromethane	ND	50
124-48-1	Dibromochloromethane	ND	50
74-95-3	Dibromomethane	ND	50
75-71-8	Dichlorodifluoromethane	ND	50
60-29-7	Ethyl Ether	ND	50
100-41-4	Ethylbenzene	ND	50
87-68-3	Hexachlorobutadiene	ND	50
98-82-8	Isopropylbenzene	ND	50
108-38-3/106-42-	M/P Xylene	ND	100
1634-04-4	Methyl-t-Butyl Ether	ND	50
75-09-2	Methylene Chloride	ND	50
104-51-8	N-Butylbenzene	ND	50
103-65-1	N-Propylbenzene	ND	50
91-20-3	Naphthalene	ND	50
95-47-6	Ortho Xylene	ND	50
99-87-6	Para-Isopropyltoluene	ND	50
135-98-8	Sec-Butylbenzene	ND	50
100-42-5	Styrene	ND	50
98-06-6	Tert-Butylbenzene	ND	50
127-18-4	Tetrachloroethylene	82	50
109-99-9	Tetrahydrofuran	ND	50
108-88-3	Toluene	ND	50
156-60-5	Trans-1,2-Dichloroethylene	ND	50
79-01-6	Trichloroethylene	1700	50
75-69-4	Trichlorofluoromethane	ND	50
108-05-4	Vinyl Acetate	ND	50
75-01-4	Vinyl Chloride	ND	50
10061-01-5	c-1,3-dichloropropene	ND	50
156-59-2	cis-1,2-Dichloroethylene	ND	50
10061-02-6	t-1,3-Dichloropropene	ND	50

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	109	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0475
Date of Collection: 8/30/2011
Date of Extraction: 8/31/11
Date of Analysis: 8/31/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21286
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	1.1	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	107	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Blank for \$VOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	9/6/11	Volume Purged:	5.0 mL
Date of Analysis:	9/6/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	~6

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	MP Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments: Blank associated with AB21286 MS/MSD only.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

VOA MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB21286

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
1,1,1,2-Tetrachloroethane	20.0	ND	20	100	67 - 129
1,1,1-Trichloroethane	20.0	ND	21	105	75 - 139
1,1,2,2-Tetrachloroethane	20.0	ND	20	100	50 - 142
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	ND	21	105	55 - 135
1,1,2-Trichloroethane	20.0	ND	21	105	62 - 142
1,1-Dichloroethylene	20.0	ND	20	100	80 - 138
1,1-Dichloropropene	20.0	ND	20	100	73 - 131
1,1-dichloroethane	20.0	ND	20	100	61 - 152
1,2,3-Trichlorobenzene	20.0	ND	21	105	49 - 143
1,2,3-Trichloropropane	20.0	ND	20	100	53 - 135
1,2,4-Trichlorobenzene	20.0	ND	21	105	63 - 131
1,2,4-Trimethylbenzene	20.0	ND	21	105	79 - 142
1,2-Dibromo-3-Chloropropane	20.0	ND	18	90	28 - 122
1,2-Dibromoethane	20.0	ND	21	105	53 - 139
1,2-Dichlorobenzene	20.0	ND	20	100	74 - 129
1,2-Dichloroethane	20.0	ND	20	100	61 - 142
1,2-Dichloropropane	20.0	ND	20	100	71 - 126
1,3,5-Trimethylbenzene	20.0	ND	21	105	77 - 140
1,3-Dichlorobenzene	20.0	ND	20	100	78 - 127
1,3-Dichloropropane	20.0	ND	20	100	63 - 130
1,4-Dichlorobenzene	20.0	ND	21	105	72 - 131
2,2-Dichloropropane	20.0	ND	21	105	50 - 139
2-Butanone (MEK)	20.0	ND	13	65	29 - 163
2-Chlorotoluene	20.0	ND	20	100	74 - 134
2-Hexanone	20.0	ND	15	75	36 - 141
2-Propanone (acetone)	20.0	1.1	9.8	44	29 - 164
4-Chlorotoluene	20.0	ND	20	100	68 - 141
4-Methyl-2-Pentanone(MIBK)	20.0	ND	20	100	35 - 139
Acrylonitrile	20.0	ND	21	105	42 - 150
Benzene	20.0	ND	20	100	78 - 134
Bromobenzene	20.0	ND	20	100	76 - 126
Bromochloromethane	20.0	ND	20	100	62 - 140
Bromodichloromethane	20.0	ND	20	100	62 - 133
Bromoform	20.0	ND	19	95	31 - 133
Bromomethane	20.0	ND	17	85	58 - 148
Carbon Disulfide	20.0	ND	19	95	66 - 135
Carbon tetrachloride	20.0	ND	20	100	62 - 146
Chlorobenzene	20.0	ND	20	100	74 - 139
Chloroethane	20.0	ND	20	100	65 - 145
Chloroform	20.0	ND	20	100	60 - 144
Chloromethane	20.0	ND	17	85	58 - 134
Dibromochloromethane	20.0	ND	20	100	34 - 140
Dibromomethane	20.0	ND	21	105	67 - 125
Dichlorodifluoromethane	20.0	ND	17	85	30 - 132
Ethyl Ether	20.0	ND	21	105	58 - 145
Ethylbenzene	20.0	ND	20	100	73 - 143
Hexachlorobutadiene	20.0	ND	21	105	56 - 144
Isopropylbenzene	20.0	ND	21	105	73 - 139

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

M/P Xylene	40.0	ND	41	102	79 - 136
Methyl-t-Butyl Ether	20.0	ND	20	100	50 - 144
Methylene Chloride	20.0	ND	20	100	70 - 144
N-Butylbenzene	20.0	ND	22	110	68 - 143
N-Propylbenzene	20.0	ND	21	105	72 - 149
Naphthalene	20.0	ND	19	95	33 - 154
Ortho Xylene	20.0	ND	21	105	80 - 129
Para-Isopropyltoluene	20.0	ND	21	105	71 - 140
Sec-Butylbenzene	20.0	ND	21	105	75 - 148
Styrene	20.0	ND	21	105	61 - 148
Tert-Butylbenzene	20.0	ND	21	105	71 - 139
Tetrachloroethylene	20.0	ND	18	90	45 - 145
Tetrahydrofuran	20.0	ND	19	95	37 - 143
Toluene	20.0	ND	20	100	77 - 142
Trans-1,2-Dichloroethylene	20.0	ND	20	100	79 - 139
Trichloroethylene	20.0	ND	20	100	65 - 143
Trichlorofluoromethane	20.0	ND	21	105	58 - 161
Vinyl Acetate	20.0	ND	9.0	45	22 - 173
Vinyl Chloride	20.0	ND	19	95	68 - 139
c-1,3-dichloropropene	20.0	ND	22	110	51 - 144
cis-1,2-Dichloroethylene	20.0	ND	20	100	59 - 154
t-1,3-Dichloropropene	20.0	ND	19	95	47 - 145

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sample ID: AB21286

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	20.0	21	105	5	40
1,1,1-Trichloroethane	20.0	22	110	5	16
1,1,2,2-Tetrachloroethane	20.0	21	105	5	40
1,1,2-Trichloro-1,2,2-Trifluoroetha	20.0	23	115	9	40
1,1,2-Trichloroethane	20.0	21	105	0	40
1,1-Dichloroethylene	20.0	21	105	5	35
1,1-Dichloropropene	20.0	22	110	10	40
1,1-dichloroethane	20.0	21	105	5	40
1,2,3-Trichlorobenzene	20.0	21	105	0	40
1,2,3-Trichloropropane	20.0	21	105	5	40
1,2,4-Trichlorobenzene	20.0	21	105	0	40
1,2,4-Trimethylbenzene	20.0	22	110	5	40
1,2-Dibromo-3-Chloropropane	20.0	20	100	11	40
1,2-Dibromoethane	20.0	21	105	0	40
1,2-Dichlorobenzene	20.0	21	105	5	40
1,2-Dichloroethane	20.0	21	105	5	23
1,2-Dichloropropane	20.0	21	105	5	40
1,3,5-Trimethylbenzene	20.0	22	110	5	40
1,3-Dichlorobenzene	20.0	22	110	10	40
1,3-Dichloropropane	20.0	21	105	5	40
1,4-Dichlorobenzene	20.0	22	110	5	21
2,2-Dichloropropane	20.0	23	115	9	40
2-Butanone (MEK)	20.0	13	65	0	40
2-Chlorotoluene	20.0	22	110	10	40
2-Hexanone	20.0	15	75	0	40
2-Propanone (acetone)	20.0	9.9	44	1	40
4-Chlorotoluene	20.0	22	110	10	40
4-Methyl-2-Pentanone(MIBK)	20.0	20	100	0	40
Acrylonitrile	20.0	22	110	5	40
Benzene	20.0	21	105	5	14
Bromobenzene	20.0	22	110	10	40
Bromochloromethane	20.0	22	110	10	40
Bromodichloromethane	20.0	21	105	5	21
Bromoform	20.0	21	105	10	40
Bromomethane	20.0	17	85	0	40
Carbon Disulfide	20.0	20	100	5	40
Carbon tetrachloride	20.0	22	110	10	19
Chlorobenzene	20.0	21	105	5	40
Chloroethane	20.0	20	100	0	40
Chloroform	20.0	21	105	5	16
Chloromethane	20.0	18	90	6	40
Dibromochloromethane	20.0	21	105	5	36
Dibromomethane	20.0	21	105	0	40
Dichlorodifluoromethane	20.0	17	85	0	40
Ethyl Ether	20.0	21	105	0	40
Ethylbenzene	20.0	21	105	5	40
Hexachlorobutadiene	20.0	23	115	9	40
Isopropylbenzene	20.0	22	110	5	40
M/P Xylene	40.0	43	108	6	40
Methyl-t-Butyl Ether	20.0	21	105	5	40
Methylene Chloride	20.0	20	100	0	40
N-Butylbenzene	20.0	23	115	4	40
N-Propylbenzene	20.0	22	110	5	40
Naphthalene	20.0	20	100	5	40

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Ortho Xylene	20.0	22	110	5	40
Para-Isopropyltoluene	20.0	23	115	9	40
Sec-Butylbenzene	20.0	22	110	5	40
Styrene	20.0	22	110	5	40
Tert-Butylbenzene	20.0	23	115	9	40
Tetrachloroethylene	20.0	19	95	5	40
Tetrahydrofuran	20.0	19	95	0	40
Toluene	20.0	21	105	5	40
Trans-1,2-Dichloroethylene	20.0	21	105	5	40
Trichloroethylene	20.0	21	105	5	22
Trichlorofluoromethane	20.0	21	105	0	40
Vinyl Acetate	20.0	9.1	46	1	40
Vinyl Chloride	20.0	19	95	0	19
c-1,3-dichloropropene	20.0	23	115	4	40
cis-1,2-Dichloroethylene	20.0	21	105	5	40
t-1,3-Dichloropropene	20.0	19	95	0	40

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21283

PARAMETER	SAMPLE RESULT	SAMPLE DUPLICATE RESULT	PRECISION	QC LIMITS
	ug/L	ug/L	RPD %	
1,1,1,2-Tetrachloroethane	ND	ND	ND	30
1,1,1-Trichloroethane	ND	ND	ND	30
1,1,2,2-Tetrachloroethane	ND	ND	ND	30
1,1,2-Trichloro-1,2,2-Trifluoroeth:	ND	ND	ND	30
1,1,2-Trichloroethane	ND	ND	ND	30
1,1-Dichloroethylene	ND	ND	ND	30
1,1-Dichloropropene	ND	ND	ND	30
1,1-dichloroethane	ND	ND	ND	30
1,2,3-Trichlorobenzene	ND	ND	ND	30
1,2,3-Trichloropropane	ND	ND	ND	30
1,2,4-Trichlorobenzene	ND	ND	ND	30
1,2,4-Trimethylbenzene	ND	ND	ND	30
1,2-Dibromo-3-Chloropropane	ND	ND	ND	30
1,2-Dibromoethane	ND	ND	ND	30
1,2-Dichlorobenzene	ND	ND	ND	30
1,2-Dichloroethane	ND	ND	ND	30
1,2-Dichloropropane	ND	ND	ND	30
1,3,5-Trimethylbenzene	ND	ND	ND	30
1,3-Dichlorobenzene	ND	ND	ND	30
1,3-Dichloropropane	ND	ND	ND	30
1,4-Dichlorobenzene	ND	ND	ND	30
2,2-Dichloropropane	ND	ND	ND	30
2-Butanone (MEK)	ND	ND	ND	30
2-Chlorotoluene	ND	ND	ND	30
2-Hexanone	ND	ND	ND	30
2-Propanone (acetone)	ND	ND	ND	30
4-Chlorotoluene	ND	ND	ND	30
4-Methyl-2-Pentanone(MIBK)	ND	ND	ND	30
Acrylonitrile	ND	ND	ND	30
Benzene	ND	ND	ND	30
Bromobenzene	ND	ND	ND	30
Bromochloromethane	ND	ND	ND	30
Bromodichloromethane	ND	ND	ND	30
Bromoform	ND	ND	ND	30
Bromomethane	ND	ND	ND	30
Carbon Disulfide	ND	ND	ND	30
Carbon tetrachloride	ND	ND	ND	30
Chlorobenzene	ND	ND	ND	30
Chloroethane	ND	ND	ND	30
Chloroform	ND	ND	ND	30
Chloromethane	ND	ND	ND	30
Dibromochloromethane	ND	ND	ND	30
Dibromomethane	ND	ND	ND	30
Dichlorodifluoromethane	ND	ND	ND	30
Ethyl Ether	ND	ND	ND	30
Ethylbenzene	ND	ND	ND	30
Hexachlorobutadiene	ND	ND	ND	30
Isopropylbenzene	ND	ND	ND	30
M/P Xylene	ND	ND	ND	30
Methyl-t-Butyl Ether	ND	ND	ND	30

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Methylene Chloride	ND	ND	ND	30
N-Butylbenzene	ND	ND	ND	30
N-Propylbenzene	ND	ND	ND	30
Naphthalene	ND	ND	ND	30
Ortho Xylene	ND	ND	ND	30
Para-Isopropyltoluene	ND	ND	ND	30
Sec-Butylbenzene	ND	ND	ND	30
Styrene	ND	ND	ND	30
Tert-Butylbenzene	ND	ND	ND	30
Tetrachloroethylene	ND	ND	ND	30
Tetrahydrofuran	1.1	ND	ND	30
Toluene	ND	ND	ND	30
Trans-1,2-Dichloroethylene	ND	ND	ND	30
Trichloroethylene	42	44	4.65	30
Trichlorofluoromethane	ND	ND	ND	30
Vinyl Acetate	ND	ND	ND	30
Vinyl Chloride	ND	ND	ND	30
c-1,3-dichloropropene	ND	ND	ND	30
cis-1,2-Dichloroethylene	ND	ND	ND	30
t-1,3-Dichloropropene	ND	ND	ND	30

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Fortified Blank (LFB) Results

Commerce Street Plume - Williston, VT

PARAMETER	LFB AMOUNT SPIKED ug/mL	LFB RESULT ug/mL	LFB RECOVERY %	QC LIMITS %
1,1,1,2-Tetrachloroethane	20	21	105	79 - 136
1,1,1-Trichloroethane	20	20	100	75 - 146
1,1,2,2-Tetrachloroethane	20	18	90	62 - 141
1,1,2-Trichloro-1,2,2-Trifluoroeth	20	19	95	56 - 130
1,1,2-Trichloroethane	20	20	100	75 - 138
1,1-Dichloroethylene	20	19	95	75 - 136
1,1-Dichloropropene	20	20	100	77 - 137
1,1-dichloroethane	20	20	100	76 - 142
1,2,3-Trichlorobenzene	20	20	100	64 - 143
1,2,3-Trichloropropane	20	19	95	66 - 133
1,2,4-Trichlorobenzene	20	20	100	80 - 131
1,2,4-Trimethylbenzene	20	21	105	74 - 155
1,2-Dibromo-3-Chloropropane	20	18	90	37 - 139
1,2-Dibromoethane	20	20	100	72 - 135
1,2-Dichlorobenzene	20	20	100	85 - 128
1,2-Dichloroethane	20	20	100	74 - 138
1,2-Dichloropropane	20	20	100	83 - 124
1,3,5-Trimethylbenzene	20	20	100	80 - 145
1,3-Dichlorobenzene	20	20	100	84 - 130
1,3-Dichloropropane	20	20	100	77 - 129
1,4-Dichlorobenzene	20	20	100	82 - 128
2,2-Dichloropropane	20	20	100	32 - 171
2-Butanone (MEK)	20	20	100	38 - 179
2-Chlorotoluene	20	20	100	78 - 134
2-Hexanone	20	22	110	45 - 158
2-Propanone (acetone)	20	20	100	14 - 209
4-Chlorotoluene	20	20	100	75 - 144
4-Methyl-2-Pentanone(MIBK)	20	19	95	40 - 144
Acrylonitrile	20	19	95	52 - 154
Benzene	20	20	100	83 - 130
Bromobenzene	20	20	100	85 - 126
Bromochloromethane	20	20	100	69 - 137
Bromodichloromethane	20	20	100	70 - 143
Bromoform	20	19	95	51 - 136
Bromomethane	20	14	70	65 - 140
Carbon Disulfide	20	18	90	68 - 140
Carbon tetrachloride	20	20	100	70 - 144
Chlorobenzene	20	20	100	84 - 131
Chloroethane	20	18	90	70 - 134
Chloroform	20	20	100	76 - 141
Chloromethane	20	14	70	63 - 123
Dibromochloromethane	20	20	100	39 - 154
Dibromomethane	20	20	100	79 - 124
Dichlorodifluoromethane	20	12	60	37 - 117
Ethyl Ether	20	19	95	67 - 140
Ethylbenzene	20	20	100	81 - 133
Hexachlorobutadiene	20	21	105	68 - 146
Isopropylbenzene	20	21	105	78 - 137
M/P Xylene	40	40	100	68 - 155
Methyl-t-Butyl Ether	20	19	95	63 - 144
Methylene Chloride	20	19	95	75 - 140
N-Butylbenzene	20	21	105	69 - 147
N-Propylbenzene	20	20	100	76 - 138

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Naphthalene	20	18	90	53 - 155
Ortho Xylene	20	21	105	85 - 135
Para-Isopropyltoluene	20	21	105	77 - 141
Sec-Butylbenzene	20	21	105	80 - 141
Styrene	20	21	105	82 - 139
Tert-Butylbenzene	20	21	105	75 - 144
Tetrachloroethylene	20	20	100	32 - 173
Tetrahydrofuran	20	19	95	47 - 149
Toluene	20	20	100	85 - 134
Trans-1,2-Dichloroethylene	20	20	100	80 - 138
Trichloroethylene	20	20	100	76 - 135
Trichlorofluoromethane	20	18	90	60 - 149
Vinyl Acetate	20	35	175	38 - 187
Vinyl Chloride	20	15	75	66 - 133
c-1,3-dichloropropene	20	21	105	68 - 149
cis-1,2-Dichloroethylene	20	20	100	76 - 143
t-1,3-Dichloropropene	20	18	90	62 - 160

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED DUPLICATE (LFB Dup) RECOVERY

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	21	105	0	50
1,1,1-Trichloroethane	22	110	10	50
1,1,2,2-Tetrachloroethane	20	100	11	50
1,1,2-Trichloro-1,2,2-Trifluoroetha	21	105	10	50
1,1,2-Trichloroethane	21	105	5	50
1,1-Dichloroethylene	22	110	15	52
1,1-Dichloropropene	21	105	5	50
1,1-dichloroethane	22	110	10	50
1,2,3-Trichlorobenzene	20	100	0	50
1,2,3-Trichloropropane	20	100	5	50
1,2,4-Trichlorobenzene	20	100	0	50
1,2,4-Trimethylbenzene	22	110	5	50
1,2-Dibromo-3-Chloropropane	18	90	0	50
1,2-Dibromoethane	21	105	5	50
1,2-Dichlorobenzene	21	105	5	50
1,2-Dichloroethane	21	105	5	50
1,2-Dichloropropane	21	105	5	50
1,3,5-Trimethylbenzene	22	110	10	50
1,3-Dichlorobenzene	21	105	5	50
1,3-Dichloropropane	21	105	5	50
1,4-Dichlorobenzene	21	105	5	50
2,2-Dichloropropane	18	90	11	50
2-Butanone (MEK)	18	90	11	50
2-Chlorotoluene	21	105	5	50
2-Hexanone	18	90	20	50
2-Propanone (acetone)	17	85	16	50
4-Chlorotoluene	21	105	5	50
4-Methyl-2-Pentanone(MIBK)	19	95	0	50
Acrylonitrile	22	110	15	50
Benzene	21	105	5	50
Bromobenzene	21	105	5	50
Bromochloromethane	22	110	10	50
Bromodichloromethane	21	105	5	50
Bromoform	20	100	5	50
Bromomethane	15	75	7	50
Carbon Disulfide	20	100	11	50
Carbon tetrachloride	21	105	5	50
Chlorobenzene	21	105	5	34
Chloroethane	20	100	11	50
Chloroform	22	110	10	50
Chloromethane	17	85	19	50
Dibromochloromethane	21	105	5	50
Dibromomethane	21	105	5	50
Dichlorodifluoromethane	13	65	8	50
Ethyl Ether	21	105	10	50
Ethylbenzene	21	105	5	50
Hexachlorobutadiene	21	105	0	50
Isopropylbenzene	22	110	5	50
M/P Xylene	42	105	5	50
Methyl-t-Butyl Ether	20	100	5	50
Methylene Chloride	22	110	15	50
N-Butylbenzene	22	110	5	50
N-Propylbenzene	22	110	10	50
Naphthalene	18	90	0	50
Ortho Xylene	22	110	5	50
Para-Isopropyltoluene	22	110	5	50

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sec-Butylbenzene	22	110	5	50
Styrene	23	115	9	50
Tert-Butylbenzene	22	110	5	50
Tetrachloroethylene	25	125	22	50
Tetrahydrofuran	20	100	5	50
Toluene	21	105	5	50
Trans-1,2-Dichloroethylene	22	110	10	50
Trichloroethylene	21	105	5	27
Trichlorofluoromethane	20	100	11	50
Vinyl Acetate	30	150	15	50
Vinyl Chloride	18	90	18	50
c-1,3-dichloropropene	21	105	0	50
cis-1,2-Dichloroethylene	23	115	14	50
t-1,3-Dichloropropene	18	90	0	50

Samples in Batch: AB21283, AB21284, AB21285, AB21286



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

September 07, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11090003

Project: Commerce Street Plume - Williston, VT

Analysis: VOAs in Water

Analyst: Joseph Montanaro

Joseph Montanaro 09/07/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region 1 SOP, EIASOP-VOAGCMS9.

Samples were analyzed by GC/MS. Samples were introduced to the GC via a Tekmar pre-concentrator and an Archon autosampler. The analysis SOP is based on US EPA Method 8260B, method 5030B, rev 2.0 SW-846, Rev 2.0, 1996. Method 624, 40CFR Part 136 Appendix A, July 1, 1992, and USEPA CLP SOW for Organic Analysis OLM04.2, 1999.

Date Samples Received by the Laboratory: 09/02/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau 9/13/11

Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP0476	Lab Sample ID:	AB21324
Date of Collection:	9/1/2011	Matrix:	GW
Date of Extraction:	9/6/11	Volume Purged:	5 mL
Date of Analysis:	9/6/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	20
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	20	
71-55-6	1,1,1-Trichloroethane	ND	20	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	20	
79-00-5	1,1,2-Trichloroethane	ND	20	
75-35-4	1,1-Dichloroethylene	ND	20	
563-58-6	1,1-Dichloropropene	ND	20	
75-34-3	1,1-dichloroethane	ND	20	
87-61-6	1,2,3-Trichlorobenzene	ND	20	
96-18-4	1,2,3-Trichloropropane	ND	20	
120-82-1	1,2,4-Trichlorobenzene	ND	20	
95-63-6	1,2,4-Trimethylbenzene	ND	20	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	20	
106-93-4	1,2-Dibromoethane	ND	20	
95-50-1	1,2-Dichlorobenzene	ND	20	
107-06-2	1,2-Dichloroethane	ND	20	
78-87-5	1,2-Dichloropropane	ND	20	
108-67-8	1,3,5-Trimethylbenzene	ND	20	
541-73-1	1,3-Dichlorobenzene	ND	20	
142-28-9	1,3-Dichloropropane	ND	20	
106-46-7	1,4-Dichlorobenzene	ND	20	
594-20-7	2,2-Dichloropropane	ND	20	
78-93-3	2-Butanone (MEK)	ND	20	
95-49-8	2-Chlorotoluene	ND	20	
591-78-6	2-Hexanone	ND	20	
67-64-1	2-Propanone (acetone)	ND	20	
106-43-4	4-Chlorotoluene	ND	20	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	20	
107-13-1	Acrylonitrile	ND	20	
71-43-2	Benzene	ND	20	
108-86-1	Bromobenzene	ND	20	
74-97-5	Bromochloromethane	ND	20	
75-27-4	Bromodichloromethane	ND	20	
75-25-2	Bromoform	ND	20	
74-83-9	Bromomethane	ND	20	
75-15-0	Carbon Disulfide	ND	20	
56-23-5	Carbon tetrachloride	ND	20	
108-90-7	Chlorobenzene	ND	20	
75-00-3	Chloroethane	ND	20	

67-66-3	Chloroform	ND	20
74-87-3	Chloromethane	ND	20
124-48-1	Dibromochloromethane	ND	20
74-95-3	Dibromomethane	ND	20
75-71-8	Dichlorodifluoromethane	ND	20
60-29-7	Ethyl Ether	ND	20
100-41-4	Ethylbenzene	ND	20
87-68-3	Hexachlorobutadiene	ND	20
98-82-8	Isopropylbenzene	ND	20
108-38-3/106-42-	M/P Xylene	ND	40
1634-04-4	Methyl-t-Butyl Ether	ND	20
75-09-2	Methylene Chloride	ND	20
104-51-8	N-Butylbenzene	ND	20
103-65-1	N-Propylbenzene	ND	20
91-20-3	Naphthalene	ND	20
95-47-6	Ortho Xylene	ND	20
99-87-6	Para-Isopropyltoluene	ND	20
135-98-8	Sec-Butylbenzene	ND	20
100-42-5	Styrene	ND	20
98-06-6	Tert-Butylbenzene	ND	20
127-18-4	Tetrachloroethylene	ND	20
109-99-9	Tetrahydrofuran	ND	20
108-88-3	Toluene	ND	20
156-60-5	Trans-1,2-Dichloroethylene	ND	20
79-01-6	Trichloroethylene	460	20
75-69-4	Trichlorofluoromethane	ND	20
108-05-4	Vinyl Acetate	ND	20
75-01-4	Vinyl Chloride	ND	20
10061-01-5	c-1,3-dichloropropene	ND	20
156-59-2	cis-1,2-Dichloroethylene	ND	20
10061-02-6	t-1,3-Dichloropropene	ND	20

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	98	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	96	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Blank for \$VOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	9/6/11	Volume Purged:	5.0 mL
Date of Analysis:	9/6/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	~6

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments: Blank associated with all samples in this project.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0477
Date of Collection: 9/1/2011
Date of Extraction: 8/6/11
Date of Analysis: 8/6/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21325
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	2.3	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	104	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0478
Date of Collection: 9/1/2011
Date of Extraction: 8/6/11
Date of Analysis: 8/6/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21326
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	105	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP0479
Date of Collection: 9/1/2011
Date of Extraction: 9/6/11
Date of Analysis: 9/6/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21327
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	13	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	1.0	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	9.6	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	95	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

VOA MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB21324

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
1,1,1,2-Tetrachloroethane	400.0	ND	420	105	67 - 129
1,1,1-Trichloroethane	400.0	ND	410	102	75 - 139
1,1,2,2-Tetrachloroethane	400.0	ND	410	102	50 - 142
1,1,2-Trichloro-1,2,2-Trifluoroetha	400.0	ND	420	105	55 - 135
1,1,2-Trichloroethane	400.0	ND	410	102	62 - 142
1,1-Dichloroethylene	400.0	ND	410	102	80 - 138
1,1-Dichloropropene	400.0	ND	420	105	73 - 131
1,1-dichloroethane	400.0	ND	420	105	61 - 152
1,2,3-Trichlorobenzene	400.0	ND	410	102	49 - 143
1,2,3-Trichloropropane	400.0	ND	400	100	53 - 135
1,2,4-Trichlorobenzene	400.0	ND	420	105	63 - 131
1,2,4-Trimethylbenzene	400.0	ND	430	108	79 - 142
1,2-Dibromo-3-Chloropropane	400.0	ND	380	95	28 - 122
1,2-Dibromoethane	400.0	ND	410	102	53 - 139
1,2-Dichlorobenzene	400.0	ND	410	102	74 - 129
1,2-Dichloroethane	400.0	ND	390	98	61 - 142
1,2-Dichloropropane	400.0	ND	410	102	71 - 126
1,3,5-Trimethylbenzene	400.0	ND	420	105	77 - 140
1,3-Dichlorobenzene	400.0	ND	420	105	78 - 127
1,3-Dichloropropane	400.0	ND	400	100	63 - 130
1,4-Dichlorobenzene	400.0	ND	420	105	72 - 131
2,2-Dichloropropane	400.0	ND	420	105	50 - 139
2-Butanone (MEK)	400.0	ND	270	68	29 - 163
2-Chlorotoluene	400.0	ND	430	108	74 - 134
2-Hexanone	400.0	ND	300	75	36 - 141
2-Propanone (acetone)	400.0	ND	230	58	29 - 164
4-Chlorotoluene	400.0	ND	420	105	68 - 141
4-Methyl-2-Pentanone(MIBK)	400.0	ND	390	98	35 - 139
Acrylonitrile	400.0	ND	420	105	42 - 150
Benzene	400.0	ND	400	100	78 - 134
Bromobenzene	400.0	ND	420	105	76 - 126
Bromochloromethane	400.0	ND	410	102	62 - 140
Bromodichloromethane	400.0	ND	420	105	62 - 133
Bromoform	400.0	ND	400	100	31 - 133
Bromomethane	400.0	ND	340	85	58 - 148
Carbon Disulfide	400.0	ND	390	98	66 - 135
Carbon tetrachloride	400.0	ND	410	102	62 - 146
Chlorobenzene	400.0	ND	410	102	74 - 139
Chloroethane	400.0	ND	390	98	65 - 145
Chloroform	400.0	ND	420	105	60 - 144
Chloromethane	400.0	ND	350	88	58 - 134
Dibromochloromethane	400.0	ND	400	100	34 - 140
Dibromomethane	400.0	ND	410	102	67 - 125
Dichlorodifluoromethane	400.0	ND	320	80	30 - 132
Ethyl Ether	400.0	ND	390	98	58 - 145
Ethylbenzene	400.0	ND	420	105	73 - 143
Hexachlorobutadiene	400.0	ND	410	102	56 - 144
Isopropylbenzene	400.0	ND	430	108	73 - 139

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

M/P Xylene	800.0	ND	840	105	79 - 136
Methyl-t-Butyl Ether	400.0	ND	380	95	50 - 144
Methylene Chloride	400.0	ND	400	100	70 - 144
N-Butylbenzene	400.0	ND	440	110	68 - 143
N-Propylbenzene	400.0	ND	420	105	72 - 149
Naphthalene	400.0	ND	380	95	33 - 154
Ortho Xylene	400.0	ND	420	105	80 - 129
Para-Isopropyltoluene	400.0	ND	440	110	71 - 140
Sec-Butylbenzene	400.0	ND	430	108	75 - 148
Styrene	400.0	ND	430	108	61 - 148
Tert-Butylbenzene	400.0	ND	430	108	71 - 139
Tetrachloroethylene	400.0	ND	400	100	45 - 145
Tetrahydrofuran	400.0	ND	380	95	37 - 143
Toluene	400.0	ND	410	102	77 - 142
Trans-1,2-Dichloroethylene	400.0	ND	400	100	79 - 139
Trichloroethylene	400.0	463.5	850	97	65 - 143
Trichlorofluoromethane	400.0	ND	410	102	58 - 161
Vinyl Acetate	400.0	ND	170	43	22 - 173
Vinyl Chloride	400.0	ND	380	95	68 - 139
c-1,3-dichloropropene	400.0	ND	430	108	51 - 144
cis-1,2-Dichloroethylene	400.0	ND	410	102	59 - 154
t-1,3-Dichloropropene	400.0	ND	370	93	47 - 145

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sample ID: AB21324

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	400.0	420	105	0	40
1,1,1-Trichloroethane	400.0	410	102	0	16
1,1,2,2-Tetrachloroethane	400.0	400	100	2	40
1,1,2-Trichloro-1,2,2-Trifluoroetha	400.0	430	108	3	40
1,1,2-Trichloroethane	400.0	410	102	0	40
1,1-Dichloroethylene	400.0	400	100	2	35
1,1-Dichloropropene	400.0	420	105	0	40
1,1-dichloroethane	400.0	400	100	5	40
1,2,3-Trichlorobenzene	400.0	410	102	0	40
1,2,3-Trichloropropane	400.0	390	98	3	40
1,2,4-Trichlorobenzene	400.0	420	105	0	40
1,2,4-Trimethylbenzene	400.0	420	105	3	40
1,2-Dibromo-3-Chloropropane	400.0	390	98	3	40
1,2-Dibromoethane	400.0	410	102	0	40
1,2-Dichlorobenzene	400.0	400	100	2	40
1,2-Dichloroethane	400.0	400	100	3	23
1,2-Dichloropropane	400.0	400	100	2	40
1,3,5-Trimethylbenzene	400.0	410	102	3	40
1,3-Dichlorobenzene	400.0	410	102	3	40
1,3-Dichloropropane	400.0	400	100	0	40
1,4-Dichlorobenzene	400.0	420	105	0	21
2,2-Dichloropropane	400.0	400	100	5	40
2-Butanone (MEK)	400.0	260	65	4	40
2-Chlorotoluene	400.0	420	105	3	40
2-Hexanone	400.0	300	75	0	40
2-Propanone (acetone)	400.0	210	53	9	40
4-Chlorotoluene	400.0	420	105	0	40
4-Methyl-2-Pentanone(MIBK)	400.0	390	98	0	40
Acrylonitrile	400.0	410	102	3	40
Benzene	400.0	400	100	0	14
Bromobenzene	400.0	410	102	3	40
Bromochloromethane	400.0	410	102	0	40
Bromodichloromethane	400.0	410	102	3	21
Bromoform	400.0	400	100	0	40
Bromomethane	400.0	340	85	0	40
Carbon Disulfide	400.0	380	95	3	40
Carbon tetrachloride	400.0	410	102	0	19
Chlorobenzene	400.0	400	100	2	40
Chloroethane	400.0	390	98	0	40
Chloroform	400.0	400	100	5	16
Chloromethane	400.0	330	83	6	40
Dibromochloromethane	400.0	410	102	2	36
Dibromomethane	400.0	420	105	3	40
Dichlorodifluoromethane	400.0	330	83	3	40
Ethyl Ether	400.0	390	98	0	40
Ethylbenzene	400.0	410	102	3	40
Hexachlorobutadiene	400.0	410	102	0	40
Isopropylbenzene	400.0	420	105	3	40
M/P Xylene	800.0	820	102	3	40
Methyl-t-Butyl Ether	400.0	390	98	3	40
Methylene Chloride	400.0	390	98	3	40
N-Butylbenzene	400.0	430	108	2	40
N-Propylbenzene	400.0	420	105	0	40
Naphthalene	400.0	380	95	0	40

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Ortho Xylene	400.0	420	105	0	40
Para-Isopropyltoluene	400.0	430	108	2	40
Sec-Butylbenzene	400.0	430	108	0	40
Styrene	400.0	420	105	3	40
Tert-Butylbenzene	400.0	430	108	0	40
Tetrachloroethylene	400.0	390	98	3	40
Tetrahydrofuran	400.0	370	93	3	40
Toluene	400.0	400	100	2	40
Trans-1,2-Dichloroethylene	400.0	400	100	0	40
Trichloroethylene	400.0	840	94	3	22
Trichlorofluoromethane	400.0	410	102	0	40
Vinyl Acetate	400.0	180	45	6	40
Vinyl Chloride	400.0	370	93	3	19
c-1,3-dichloropropene	400.0	430	108	0	40
cis-1,2-Dichloroethylene	400.0	410	102	0	40
t-1,3-Dichloropropene	400.0	370	93	0	40

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21324

PARAMETER	SAMPLE RESULT	SAMPLE DUPLICATE RESULT	PRECISION RPD	QC LIMITS
	ug/L	ug/L	%	
1,1,1,2-Tetrachloroethane	ND	ND	ND	30
1,1,1-Trichloroethane	ND	ND	ND	30
1,1,2,2-Tetrachloroethane	ND	ND	ND	30
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ND	ND	30
1,1,2-Trichloroethane	ND	ND	ND	30
1,1-Dichloroethylene	ND	ND	ND	30
1,1-Dichloropropene	ND	ND	ND	30
1,1-dichloroethane	ND	ND	ND	30
1,2,3-Trichlorobenzene	ND	ND	ND	30
1,2,3-Trichloropropane	ND	ND	ND	30
1,2,4-Trichlorobenzene	ND	ND	ND	30
1,2,4-Trimethylbenzene	ND	ND	ND	30
1,2-Dibromo-3-Chloropropane	ND	ND	ND	30
1,2-Dibromoethane	ND	ND	ND	30
1,2-Dichlorobenzene	ND	ND	ND	30
1,2-Dichloroethane	ND	ND	ND	30
1,2-Dichloropropane	ND	ND	ND	30
1,3,5-Trimethylbenzene	ND	ND	ND	30
1,3-Dichlorobenzene	ND	ND	ND	30
1,3-Dichloropropane	ND	ND	ND	30
1,4-Dichlorobenzene	ND	ND	ND	30
2,2-Dichloropropane	ND	ND	ND	30
2-Butanone (MEK)	ND	ND	ND	30
2-Chlorotoluene	ND	ND	ND	30
2-Hexanone	ND	ND	ND	30
2-Propanone (acetone)	ND	ND	ND	30
4-Chlorotoluene	ND	ND	ND	30
4-Methyl-2-Pentanone(MIBK)	ND	ND	ND	30
Acrylonitrile	ND	ND	ND	30
Benzene	ND	ND	ND	30
Bromobenzene	ND	ND	ND	30
Bromochloromethane	ND	ND	ND	30
Bromodichloromethane	ND	ND	ND	30
Bromoform	ND	ND	ND	30
Bromomethane	ND	ND	ND	30
Carbon Disulfide	ND	ND	ND	30
Carbon tetrachloride	ND	ND	ND	30
Chlorobenzene	ND	ND	ND	30
Chloroethane	ND	ND	ND	30
Chloroform	ND	ND	ND	30
Chloromethane	ND	ND	ND	30
Dibromochloromethane	ND	ND	ND	30
Dibromomethane	ND	ND	ND	30
Dichlorodifluoromethane	ND	ND	ND	30
Ethyl Ether	ND	ND	ND	30
Ethylbenzene	ND	ND	ND	30
Hexachlorobutadiene	ND	ND	ND	30
Isopropylbenzene	ND	ND	ND	30
M/P Xylene	ND	ND	ND	30
Methyl-t-Butyl Ether	ND	ND	ND	30

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Methylene Chloride	ND	ND	ND	30
N-Butylbenzene	ND	ND	ND	30
N-Propylbenzene	ND	ND	ND	30
Naphthalene	ND	ND	ND	30
Ortho Xylene	ND	ND	ND	30
Para-Isopropyltoluene	ND	ND	ND	30
Sec-Butylbenzene	ND	ND	ND	30
Styrene	ND	ND	ND	30
Tert-Butylbenzene	ND	ND	ND	30
Tetrachloroethylene	ND	ND	ND	30
Tetrahydrofuran	ND	ND	ND	30
Toluene	ND	ND	ND	30
Trans-1,2-Dichloroethylene	ND	ND	ND	30
Trichloroethylene	463.5	495	6.57	30
Trichlorofluoromethane	ND	ND	ND	30
Vinyl Acetate	ND	ND	ND	30
Vinyl Chloride	ND	ND	ND	30
c-1,3-dichloropropene	ND	ND	ND	30
cis-1,2-Dichloroethylene	ND	ND	ND	30
t-1,3-Dichloropropene	ND	ND	ND	30

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Fortified Blank (LFB) Results

Commerce Street Plume - Williston, VT

PARAMETER	LFB AMOUNT SPIKED ug/mL	LFB RESULT ug/mL	LFB RECOVERY %	QC LIMITS %
1,1,1,2-Tetrachloroethane	20	19	95	79 - 136
1,1,1-Trichloroethane	20	19	95	75 - 146
1,1,2,2-Tetrachloroethane	20	17	85	62 - 141
1,1,2-Trichloro-1,2,2-Trifluoroeth	20	20	100	56 - 130
1,1,2-Trichloroethane	20	17	85	75 - 138
1,1-Dichloroethylene	20	18	90	75 - 136
1,1-Dichloropropene	20	19	95	77 - 137
1,1-dichloroethane	20	18	90	76 - 142
1,2,3-Trichlorobenzene	20	22	110	64 - 143
1,2,3-Trichloropropane	20	18	90	66 - 133
1,2,4-Trichlorobenzene	20	22	110	80 - 131
1,2,4-Trimethylbenzene	20	20	100	74 - 155
1,2-Dibromo-3-Chloropropane	20	19	95	37 - 139
1,2-Dibromoethane	20	18	90	72 - 135
1,2-Dichlorobenzene	20	19	95	85 - 128
1,2-Dichloroethane	20	17	85	74 - 138
1,2-Dichloropropane	20	18	90	83 - 124
1,3,5-Trimethylbenzene	20	21	105	80 - 145
1,3-Dichlorobenzene	20	20	100	84 - 130
1,3-Dichloropropane	20	18	90	77 - 129
1,4-Dichlorobenzene	20	19	95	82 - 128
2,2-Dichloropropane	20	20	100	32 - 171
2-Butanone (MEK)	20	19	95	38 - 179
2-Chlorotoluene	20	20	100	78 - 134
2-Hexanone	20	21	105	45 - 158
2-Propanone (acetone)	20	19	95	14 - 209
4-Chlorotoluene	20	19	95	75 - 144
4-Methyl-2-Pentanone(MIBK)	20	19	95	40 - 144
Acrylonitrile	20	18	90	52 - 154
Benzene	20	18	90	83 - 130
Bromobenzene	20	19	95	85 - 126
Bromochloromethane	20	18	90	69 - 137
Bromodichloromethane	20	18	90	70 - 143
Bromoform	20	18	90	51 - 136
Bromomethane	20	18	90	65 - 140
Carbon Disulfide	20	18	90	68 - 140
Carbon tetrachloride	20	18	90	70 - 144
Chlorobenzene	20	18	90	84 - 131
Chloroethane	20	17	85	70 - 134
Chloroform	20	18	90	76 - 141
Chloromethane	20	15	75	63 - 123
Dibromochloromethane	20	18	90	39 - 154
Dibromomethane	20	18	90	79 - 124
Dichlorodifluoromethane	20	15	75	37 - 117
Ethyl Ether	20	17	85	67 - 140
Ethylbenzene	20	19	95	81 - 133
Hexachlorobutadiene	20	24	120	68 - 146
Isopropylbenzene	20	21	105	78 - 137
M/P Xylene	40	37	93	68 - 155
Methyl-t-Butyl Ether	20	18	90	63 - 144
Methylene Chloride	20	17	85	75 - 140
N-Butylbenzene	20	24	120	69 - 147
N-Propylbenzene	20	20	100	76 - 138

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Naphthalene	20	18	90	53 - 155
Ortho Xylene	20	20	100	85 - 135
Para-Isopropyltoluene	20	23	115	77 - 141
Sec-Butylbenzene	20	23	115	80 - 141
Styrene	20	20	100	82 - 139
Tert-Butylbenzene	20	22	110	75 - 144
Tetrachloroethylene	20	18	90	32 - 173
Tetrahydrofuran	20	17	85	47 - 149
Toluene	20	18	90	85 - 134
Trans-1,2-Dichloroethylene	20	18	90	80 - 138
Trichloroethylene	20	18	90	76 - 135
Trichlorofluoromethane	20	18	90	60 - 149
Vinyl Acetate	20	7.8	39	38 - 187
Vinyl Chloride	20	15	75	66 - 133
c-1,3-dichloropropene	20	19	95	68 - 149
cis-1,2-Dichloroethylene	20	19	95	76 - 143
t-1,3-Dichloropropene	20	17	85	62 - 160

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED DUPLICATE (LFB Dup) RECOVERY

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	19	95	0	50
1,1,1-Trichloroethane	18	90	5	50
1,1,2,2-Tetrachloroethane	19	95	11	50
1,1,2-Trichloro-1,2,2-Trifluoroetha	18	90	11	50
1,1,2-Trichloroethane	19	95	11	50
1,1-Dichloroethylene	18	90	0	52
1,1-Dichloropropene	19	95	0	50
1,1-dichloroethane	18	90	0	50
1,2,3-Trichlorobenzene	20	100	10	50
1,2,3-Trichloropropane	19	95	5	50
1,2,4-Trichlorobenzene	20	100	10	50
1,2,4-Trimethylbenzene	19	95	5	50
1,2-Dibromo-3-Chloropropane	19	95	0	50
1,2-Dibromoethane	19	95	5	50
1,2-Dichlorobenzene	19	95	0	50
1,2-Dichloroethane	18	90	6	50
1,2-Dichloropropane	19	95	5	50
1,3,5-Trimethylbenzene	19	95	10	50
1,3-Dichlorobenzene	19	95	5	50
1,3-Dichloropropane	19	95	5	50
1,4-Dichlorobenzene	20	100	5	50
2,2-Dichloropropane	19	95	5	50
2-Butanone (MEK)	20	100	5	50
2-Chlorotoluene	19	95	5	50
2-Hexanone	23	115	9	50
2-Propanone (acetone)	21	105	10	50
4-Chlorotoluene	19	95	0	50
4-Methyl-2-Pentanone(MIBK)	21	105	10	50
Acrylonitrile	19	95	5	50
Benzene	18	90	0	50
Bromobenzene	19	95	0	50
Bromochloromethane	18	90	0	50
Bromodichloromethane	19	95	5	50
Bromoform	19	95	5	50
Bromomethane	15	75	18	50
Carbon Disulfide	17	85	6	50
Carbon tetrachloride	19	95	5	50
Chlorobenzene	19	95	5	34
Chloroethane	17	85	0	50
Chloroform	18	90	0	50
Chloromethane	15	75	0	50
Dibromochloromethane	19	95	5	50
Dibromomethane	19	95	5	50
Dichlorodifluoromethane	14	70	7	50
Ethyl Ether	18	90	6	50
Ethylbenzene	19	95	0	50
Hexachlorobutadiene	20	100	18	50
Isopropylbenzene	20	100	5	50
M/P Xylene	38	95	3	50
Methyl-t-Butyl Ether	18	90	0	50
Methylene Chloride	18	90	6	50
N-Butylbenzene	20	100	18	50
N-Propylbenzene	19	95	5	50
Naphthalene	18	90	0	50
Ortho Xylene	20	100	0	50
Para-Isopropyltoluene	20	100	14	50

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sec-Butylbenzene	20	100	14	50
Styrene	20	100	0	50
Tert-Butylbenzene	20	100	10	50
Tetrachloroethylene	18	90	0	50
Tetrahydrofuran	17	85	0	50
Toluene	18	90	0	50
Trans-1,2-Dichloroethylene	18	90	0	50
Trichloroethylene	19	95	5	27
Trichlorofluoromethane	18	90	0	50
Vinyl Acetate	8.1	41	4	50
Vinyl Chloride	16	80	7	50
c-1,3-dichloropropene	20	100	5	50
cis-1,2-Dichloroethylene	18	90	5	50
t-1,3-Dichloropropene	18	90	6	50

Samples in Batch: AB21324, AB21325, AB21326, AB21327



Laboratory Report

August 25, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080045

Project: Commerce Street Plume - Williston, VT

Analysis: 1,4-Dioxane in Water

Analyst: Dan Boudreau *DB*
8/25/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-VOADIOX4.

Date Samples Received by the Laboratory: 08/19/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau *8/30/11*

Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID: EP0372
Date of Collection: 8/16/2011
Date of Extraction: 8/23/11
Date of Analysis: 8/23/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20833
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: N/A

<u>CAS Number</u>	<u>Compound</u>	<u>Concentration</u> <u>ug/L</u>	<u>RL</u> <u>ug/L</u>	<u>Qualifier</u>
123-91-1	p-Dioxane	ND	2.0	

<u>Surrogate Compounds</u>	<u>Recoveries (%)</u>	<u>QC Ranges</u>
p-Dioxane-d8	109	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID: EP0375
Date of Collection: 8/16/2011
Date of Extraction: 8/23/11
Date of Analysis: 8/23/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20835
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	73	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID: EP0377
Date of Collection: 8/17/2011
Date of Extraction: 8/23/11
Date of Analysis: 8/23/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20836
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	108	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
 NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Lab Blank for 1,4-Dioxane in Water

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	8/23/11	Volume Purged:	N/A
Date of Analysis:	8/23/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	N/A
Wet Weight Extracted:	N/A	pH:	N/A

<u>CAS Number</u>	<u>Compound</u>	<u>Concentration ug/L</u>	<u>RL ug/L</u>	<u>Qualifier</u>
123-91-1	p-Dioxane	ND	2.0	

<u>Surrogate Compounds</u>	<u>Recoveries (%)</u>	<u>QC Ranges</u>
p-Dioxane-d8	105	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID:	EP0381	Lab Sample ID:	AB20839
Date of Collection:	8/17/2011	Matrix:	GW
Date of Extraction:	8/23/11	Volume Purged:	5 mL
Date of Analysis:	8/23/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	84	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID: EP0385
Date of Collection: 8/18/2011
Date of Extraction: 8/23/11
Date of Analysis: 8/23/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20841
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: N/A

<u>CAS Number</u>	<u>Compound</u>	<u>Concentration</u> <u>ug/L</u>	<u>RL</u> <u>ug/L</u>	<u>Qualifier</u>
123-91-1	p-Dioxane	ND	2.0	

<u>Surrogate Compounds</u>	<u>Recoveries (%)</u>	<u>QC Ranges</u>
p-Dioxane-d8	120	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

1,4 DIOXANE / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB20836

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
p-Dioxane	10.000	ND	7.7	77	36 - 157

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
p-Dioxane	10	9.4	94	20	30

Samples in Batch: AB20833, AB20835, AB20836, AB20839, AB20841

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB20836

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
p-Dioxane	ND	ND	ND	50

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) AND DUPLICATE (LFB Dup) RECOVERY

Commerce Street Plume - Williston, VT

COMPOUND	SPIKE ADDED ug/L	LFB CONCENTRATION ug/L	LFB RECOVERY %	QC LIMITS (% REC)
p-Dioxane	10	8.4	84	67 - 144

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
p-Dioxane	11	106	23	30

Samples in Batch: AB20833, AB20835, AB20836, AB20839, AB20841

Comments:



Laboratory Report

August 25, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080051
Project: Commerce Street Plume - Williston, VT
Analysis: 1,4-Dioxane in Water
Analyst: Dan Boudreau *DB*
8/25/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-VOADIOX4.

Date Samples Received by the Laboratory: 08/23/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau *8/25/11*
Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID:	EP0388	Lab Sample ID:	AB20930
Date of Collection:	8/19/2011	Matrix:	GW
Date of Extraction:	8/24/11	Volume Purged:	5 mL
Date of Analysis:	8/24/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	N/A

<u>CAS Number</u>	<u>Compound</u>	<u>Concentration</u> <u>ug/L</u>	<u>RL</u> <u>ug/L</u>	<u>Qualifier</u>
123-91-1	p-Dioxane	ND	2.0	

<u>Surrogate Compounds</u>	<u>Recoveries (%)</u>	<u>QC Ranges</u>
p-Dioxane-d8	149	68 - 154

Comments: High levels of trichloroethylene in the sample affected surrogate recovery.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID: EP0392
Date of Collection: 8/22/2011
Date of Extraction: 8/24/11
Date of Analysis: 8/24/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20933
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: N/A

<u>CAS Number</u>	<u>Compound</u>	<u>Concentration ug/L</u>	<u>RL ug/L</u>	<u>Qualifier</u>
123-91-1	p-Dioxane	ND	2.0	

<u>Surrogate Compounds</u>	<u>Recoveries (%)</u>	<u>QC Ranges</u>
p-Dioxane-d8	60	68 - 154

Comments: High levels of trichloroethylene in the sample affected surrogate recovery.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Lab Blank for 1,4-Dioxane in Water

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	8/24/11	Volume Purged:	N/A
Date of Analysis:	8/24/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	N/A
Wet Weight Extracted:	N/A	pH:	N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	95	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID: EP0398
Date of Collection: 8/22/2011
Date of Extraction: 8/24/11
Date of Analysis: 8/24/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB20938
Matrix: PE Water
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	5.20	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	135	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID:	EP0406	Lab Sample ID:	AB20943
Date of Collection:	8/22/2011	Matrix:	GW
Date of Extraction:	8/24/11	Volume Purged:	5 mL
Date of Analysis:	8/24/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	171	68 - 154

Comments: High levels of trichloroethylene in the sample affected surrogate recovery.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) AND DUPLICATE (LFB Dup) RECOVERY

Commerce Street Plume - Williston, VT

COMPOUND	SPIKE ADDED ug/L	LFB CONCENTRATION ug/L	LFB RECOVERY %	QC LIMITS (% REC)
p-Dioxane	10	11	113	67 - 144

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
p-Dioxane	11	105	7	30

Samples in Batch: AB20930, AB20933, AB20938, AB20943

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

1,4 DIOXANE / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB21000

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
p-Dioxane	10.000	ND	12	120	36 - 157

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
p-Dioxane	10	10	100	18	30

Samples in Batch: AB21000, AB21001, AB21006

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21000

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
p-Dioxane	ND	ND	ND	50

PN: 11080051

USEPA NERL Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 1-082211-131134-0004

Date Shipped: 8/22/2011

Lab: New England Regional Laboratory

Carrier Name: FedEx

Case# EP009S

Lab Contact: Dan Boudreau

Airbill No: 875722301281

Cooler #: 1

Lab Phone: 617-918-8340

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
✓ EP0388	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	82 (HCl), 83 (HCl), 84 (HCl), 85 (HCl), 86 (4 C), 87 (4 C), 88 (4 C), 89 (4 C) (8)	VP-3930A	08/19/2011		
EP0390	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	92 (HCl), 93 (HCl), 94 (HCl), 95 (HCl) (4)	VP-3615A	08/22/2011 08:00		
✗ EP0391	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	96 (HCl), 97 (HCl), 98 (HCl), 99 (HCl) (4)	VP-3620A	08/22/2011 08:30		
✗ EP0392	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	100 (HCl), 101 (HCl), 102 (HCl), 103 (HCl), 104 (4 C), 105 (4 C), 106 (4 C), 107 (4 C) (8)	VP-3625A	08/22/2011 08:55		
✓ EP0394	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	110 (HCl), 111 (HCl), 112 (HCl), 113 (HCl) (4)	VP-3630A	08/22/2011 09:40		
✓ EP0395	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	120 (HCl), 121 (HCl), 122 (HCl), 123 (HCl) (4)	VP-3635A	08/22/2011 10:00		
✓ EP0396	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	124 (HCl), 125 (HCl), 126 (HCl), 127 (HCl) (4)	VP-3638A	08/22/2011 10:45		
✓ EP0397	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	128 (HCl), 129 (HCl), 130 (HCl), 131 (HCl) (4)	VP-5415A	08/22/2011 11:45		
✓ EP0398	PE Water/ Corey Rousseau		PE_1,4DIOX(7)	135 (4 C) (1)	DX01283	08/22/2011 08:15		

Special Instructions:	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #

Analysis Key: VOA=Volatiles, 1,4DIOX=1,4-dioxane, PE_1,4DIOX=PE 1,4-dioxane, PE_VOA=PE L/M Volatiles in Water QATS

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
GW Samples	J Topiano	8/22/11	[Signature]	8/23/11	10:00						
	FEDEx										

cooler 4°C

PN: 11080051

USEPA NERL Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 1-082211-131134-0004

Date Shipped: 8/22/2011

Lab: New England Regional Laboratory

Carrier Name: FedEx

Case# EP009S

Lab Contact: Dan Boudreau

Airbill No: 875722301281

Cooler #: }

Lab Phone: 617-918-8340

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
✓ EP0402	PE Water/ Corey Rousseau		PE_VOA(7)	136 (4 C) (1)	VLM0322	08/22/2011 08:20		
✓ EP0403	Blank/ Jason Fopiano	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	137 (HCl), 138 (HCl), 139 (HCl), 140 (HCl) (4)	TBO2-0822A	08/18/2011 11:00		
✓ EP0404	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	141 (HCl), 142 (HCl), 143 (HCl), 144 (HCl) (4)	VP-5420A	08/22/2011 12:20		
✓ EP0405	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	145 (HCl), 146 (HCl), 147 (HCl), 148 (HCl) (4)	VP-5425A	08/22/2011 12:40		
✓ EP0406	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	158 (HCl), 159 (HCl), 160 (HCl), 161 (HCl), 162 (4 C), 163 (4 C), 164 (4 C), 165 (4 C) (8)	VP-5430A	08/22/2011 13:30		
✓ EP0408	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	168 (HCl), 169 (HCl), 170 (HCl), 171 (HCl) (4)	DUP03-0822A	08/22/2011 13:35		
✓ EP0409	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	178 (HCl), 179 (HCl), 180 (HCl), 181 (HCl) (4)	VP-5435A	08/22/2011 14:10		
✓ EP0410	Ground Water/ Josh Stewart	Grab	VOA(14), VOA(14), VOA(14), VOA(14)	182 (HCl), 183 (HCl), 184 (HCl), 185 (HCl) (4)	VP-5440A	08/22/2011 14:45		

Special Instructions:	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #

Analysis Key: VOA=Volatiles, 1,4DIOX=1,4-dioxane, PE_1,4DIOX=PE 1,4-dioxane, PE_VOA=PE L/M Volatiles in Water QATS

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
GW Samples	J Fopiano	8/22/11	[Signature]	8/23/11	10:00						
			FedEx								

Cooler 40c



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

September 01, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080075

Project: Commerce Street Plume - Williston, VT

Analysis: 1,4-Dioxane in Water

Analyst: Dan Boudreau *DB 9/1/11*

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-VOADIOX4.

Date Samples Received by the Laboratory: 08/31/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau 9/7/11

Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID: EP0471
Date of Collection: 8/29/2011
Date of Extraction: 9/1/11
Date of Analysis: 9/1/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21283
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	143	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
 NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Lab Blank for 1,4-Dioxane in Water

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	9/1/11	Volume Purged:	N/A
Date of Analysis:	9/1/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	134	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

1,4 DIOXANE / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB21283

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
p-Dioxane	10	ND	9.54	95	36 - 157

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
p-Dioxane	10	11.93	119	22	30

Samples in Batch: AB21283

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21283

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
p-Dioxane	ND	ND	ND	50

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) AND DUPLICATE (LFB Dup) RECOVERY

COMPOUND	SPIKE ADDED ug/L	LFB CONCENTRATION ug/L	LFB RECOVERY %	QC LIMITS (% REC)
p-Dioxane	10	13.04	130	36 - 157

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
p-Dioxane	11.03	110	17	50

Samples in Batch: AB21283

Comments:



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

August 25, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080056
Project: Commerce Street Plume - Williston, VT
Analysis: 1,4-Dioxane in Water
Analyst: Dan Boudreau *DB*
8/25/11

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-VOADIOX4.

Date Samples Received by the Laboratory: 08/24/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau *8/30/11*
Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID: EP-0414
Date of Collection: 8/23/2011
Date of Extraction: 8/24/11
Date of Analysis: 8/24/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21000
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	119	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Lab Blank for 1,4-Dioxane in Water

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	8/24/11	Volume Purged:	N/A
Date of Analysis:	8/24/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	N/A
Wet Weight Extracted:	N/A	pH:	N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	95	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID:	EP-0416	Lab Sample ID:	AB21001
Date of Collection:	8/23/2011	Matrix:	GW
Date of Extraction:	8/24/11	Volume Purged:	5 mL
Date of Analysis:	8/24/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	N/A

<u>CAS Number</u>	<u>Compound</u>	<u>Concentration ug/L</u>	<u>RL ug/L</u>	<u>Qualifier</u>
123-91-1	p-Dioxane	ND	2.0	

<u>Surrogate Compounds</u>	<u>Recoveries (%)</u>	<u>QC Ranges</u>
p-Dioxane-d8	113	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID: EP-0423
Date of Collection: 8/23/2011
Date of Extraction: 8/24/11
Date of Analysis: 8/24/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21006
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	104	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
 NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) AND DUPLICATE (LFB Dup) RECOVERY

Commerce Street Plume - Williston, VT

COMPOUND	SPIKE ADDED ug/L	LFB CONCENTRATION ug/L	LFB RECOVERY %	QC LIMITS (% REC)
p-Dioxane	10	11	113	67 - 144

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
p-Dioxane	11	105	7	30

Samples in Batch: AB20930, AB20933, AB20938, AB20943

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

1,4 DIOXANE / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB21000

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
p-Dioxane	10.000	ND	12	120	36 - 157

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
p-Dioxane	10	10	100	18	30

Samples in Batch: AB21000, AB21001, AB21006

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21000

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
p-Dioxane	ND	ND	ND	50

PN 110 80056

USEPA NERL Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 1-082311-083936-0006

Date Shipped: 8/23/2011

Lab: New England Regional Laboratory

Carrier Name: FedEx

Case# EP009S

Lab Contact: Dan Boudreau

Airbill No: 875722301329

Cooler # 1

Lab Phone: 617-918-8340

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
EP0411	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	186 (HCl), 187 (HCl), 188 (HCl), 189 (HCl) (4)	VP-3815A	08/23/2011 08:00		
EP0412	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	190 (HCl), 191 (HCl), 192 (HCl), 193 (HCl) (4)	VP-3820A	08/23/2011 08:30		
EP0413	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	194 (HCl), 195 (HCl), 196 (HCl), 197 (HCl) (4)	VP-3825A	08/23/2011 09:00		
EP0414	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS, 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	202 (HCl), 203 (HCl), 204 (HCl), 205 (HCl), 206 (4 C), 207 (4 C), 208 (4 C), 209 (4 C) (8)	VP-3830A	08/23/2011 09:50		
EP0416	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS, 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	212 (HCl), 213 (HCl), 214 (HCl), 215 (HCl), 216 (4 C), 217 (4 C), 218 (4 C), 219 (4 C) (8)	DUP04-0823A	08/23/2011 09:55		
EP0418	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	226 (HCl), 227 (HCl), 228 (HCl), 229 (HCl) (4)	VP-3835A	08/23/2011 10:30		
EP0420	Blank/ Corey Rousseau	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	222 (HCl), 223 (HCl), 224 (HCl), 225 (HCl) (4)	TB03-0823A	08/23/2011 08:00		
EP0421	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	248 (HCl), 249 (HCl), 250 (HCl), 251 (HCl) (4)	VP-3715A	08/23/2011 12:50		
EP0422	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	252 (HCl), 253 (HCl), 254 (HCl), 255 (HCl) (4)	VP-3720A	08/23/2011 13:10		

Sample(s) to be used for Lab QC: EP0423

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: VOC-HS=VOC Headspace Screening, 1,4DIOX=1,4-dioxane

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
Shipping	[Signature]	8/23/11	[Signature]	8/24/11	09:45						
	FedEx										

4°C

PN 11030056

USEPA NERL Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 1-082311-083936-0006

Date Shipped: 8/23/2011

Lab: New England Regional Laboratory

Carrier Name: FedEx

Case# EP009S

Lab Contact: Dan Boudreau

Airbill No: 875722301329

Cooler # 1

Lab Phone: 617-918-8340

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
EP0423	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS, 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	260 (HCl), 261 (HCl), 262 (HCl), 263 (HCl), 264 (4 C), 265 (4 C), 266 (4 C), 267 (4 C), 270 (4 C), 271 (4 C), 272 (4 C), 273 (4 C), 274 (4 C), 275 (4 C), 276 (4 C), 277 (4 C) (16)	VP-3725A	08/23/2011 14:00		
EP0425	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	282 (HCl), 283 (HCl), 284 (HCl), 285 (HCl) (4)	VP-3730A	08/23/2011 14:45		
EP0426	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	286 (HCl), 287 (HCl), 288 (HCl), 289 (HCl) (4)	VP-3735A	08/23/2011 15:25		

Shipment for Case Complete? N

Sample(s) to be used for Lab QC: EP0423

Samples Transferred From Chain of Custody #

Analysis Key: VOC-HS=VOC Headspace Screening, 1,4DIOX=1,4-dioxane

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
Shipping	<i>[Signature]</i>	8/23/11	<i>[Signature]</i>	8/24/11	09:45						
	FEDER										

40C



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

August 31, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080063
Project: Commerce Street Plume - Williston, VT
Analysis: 1,4-Dioxane in Water
Analyst: Dan Boudreau *DB 8/31/11*

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-VOADIOX4.

Date Samples Received by the Laboratory: 08/25/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau 8/31/11
Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID: EP0430
Date of Collection: 8/24/2011
Date of Extraction: 8/29/11
Date of Analysis: 8/29/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21084
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	128	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Lab Blank for 1,4-Dioxane in Water

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	8/29/11	Volume Purged:	N/A
Date of Analysis:	8/29/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	N/A
Wet Weight Extracted:	N/A	pH:	N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	150	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID: EP0438
Date of Collection: 8/24/2011
Date of Extraction: 8/29/11
Date of Analysis: 8/29/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB21091
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 1
pH: N/A

<u>CAS Number</u>	<u>Compound</u>	<u>Concentration</u> <u>ug/L</u>	<u>RL</u> <u>ug/L</u>	<u>Qualifier</u>
123-91-1	p-Dioxane	ND	2.0	

<u>Surrogate Compounds</u>	<u>Recoveries (%)</u>	<u>QC Ranges</u>
p-Dioxane-d8	97	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

1,4 DIOXANE / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB21084

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
p-Dioxane	10.000	ND	13	130	36 - 157

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
p-Dioxane	10	11	110	17	30

Samples in Batch: AB21084, AB21091

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21084

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
p-Dioxane	ND	ND	ND	50

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) AND DUPLICATE (LFB Dup) RECOVERY

Commerce Street Plume - Williston, VT

COMPOUND	SPIKE ADDED ug/L	LFB CONCENTRATION ug/L	LFB RECOVERY %	QC LIMITS (% REC)
p-Dioxane	10	11	106	67 - 144

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
p-Dioxane	14	142	29	30

Samples in Batch: AB21084, AB21091

Comments:

PW: 11080063

USEPA NERL Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 1-082411-095859-0011

Date Shipped: 8/24/2011

Lab: New England Regional Laboratory

Carrier Name: FedEx

Case# EP009S

Lab Contact: Dan Boudreau

Airbill No: 875722301340

Cooler # 1

Lab Phone: 617-918-8340

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
EP0427	Blank/ Corey Rousseau	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	292 (HCl), 293 (HCl), 294 (HCl), 295 (HCl) (4)	TB04-0824A	08/24/2011 07:30		
EP0428	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS, VOC-HS, VOC-HS, VOC-HS, VOC-HS, VOC-HS, VOC-HS	370 (HCl), 371 (HCl), 372 (HCl), 373 (HCl), 374 (HCl), 375 (HCl), 376 (HCl), 377 (HCl), 378 (HCl), 379 (HCl), 380 (HCl), 381 (HCl) (12)	VP-5315A	08/24/2011 11:25		
EP0429	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	382 (HCl), 383 (HCl), 384 (HCl), 385 (HCl) (4)	VP-5320A	08/24/2011 11:50		
EP0430	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS, 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	398 (HCl), 399 (HCl), 400 (HCl), 401 (HCl), 402 (4 C), 403 (4 C), 404 (4 C) (7)	VP-5325A	08/24/2011 12:20		
EP0432	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	408 (HCl), 409 (HCl), 410 (HCl), 411 (HCl) (4)	VP-5330A	08/24/2011 13:00		
EP0433	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	418 (HCl), 419 (HCl), 420 (HCl), 421 (HCl) (4)	VP-5335A	08/24/2011 13:30		
EP0434	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	450 (HCl), 451 (HCl), 452 (HCl), 453 (HCl) (4)	VP-5340A	08/24/2011 14:20		
EP0435	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	454 (HCl), 455 (HCl), 456 (HCl), 457 (HCl) (4)	VP-5342A	08/24/2011 15:10		

Special Instructions: Please return cooler at your earliest convenience using the included FedEx Airbill, Thank you.	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #
Analysis Key: VOC-HS=VOC Headspace Screening, 1,4DIOX=1,4-dioxane	

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
Shipping	<i>[Signature]</i>	8/24/11	<i>[Signature]</i>	8/25/11	10:50						

30C



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

August 31, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11080068
Project: Commerce Street Plume - Williston, VT
Analysis: 1,4-Dioxane in Water
Analyst: Dan Boudreau *DB 8/31/11*

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-VOADIOX4.

Date Samples Received by the Laboratory: 08/26/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau 8/31/11
Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID:	EP-0444	Lab Sample ID:	AB21160
Date of Collection:	8/25/2011	Matrix:	GW
Date of Extraction:	8/29/11	Volume Purged:	5 mL
Date of Analysis:	8/29/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	104	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

1,4-Dioxane in Water

Client Sample ID:	EP-0453	Lab Sample ID:	AB21168
Date of Collection:	8/25/2011	Matrix:	GW
Date of Extraction:	8/29/11	Volume Purged:	5 mL
Date of Analysis:	8/29/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	80	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Lab Blank for 1,4-Dioxane in Water

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	8/29/11	Volume Purged:	N/A
Date of Analysis:	8/29/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	N/A
Wet Weight Extracted:	N/A	pH:	N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
123-91-1	p-Dioxane	ND	2.0	

Surrogate Compounds	Recoveries (%)	QC Ranges
p-Dioxane-d8	130	68 - 154

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

LABORATORY FORTIFIED BLANK (LFB) AND DUPLICATE (LFB Dup) RECOVERY

Commerce Street Plume - Williston, VT

COMPOUND	SPIKE ADDED ug/L	LFB CONCENTRATION ug/L	LFB RECOVERY %	QC LIMITS (% REC)
p-Dioxane	10	11	106	67 - 144

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
p-Dioxane	14	142	29	30

Samples in Batch: AB21160, AB21168

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

1,4 DIOXANE / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB21084

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
p-Dioxane	10.000	ND	13	130	36 - 157

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
p-Dioxane	10	11	110	17	30

Samples in Batch: AB21084, AB21091

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB21084

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
p-Dioxane	ND	ND	ND	50

PN: 11080063

USEPA NERL Organics COC (LAB COPY)

CHAIN OF CUSTODY RECORD

No: 1-082511-102421-0012

Date Shipped: 8/25/2011

Lab: New England Regional Laboratory

Carrier Name: FedEx

Case# EP009S

Lab Contact: Dan Boudreau

Airbill No: 875722301351

Cooler # 1

Lab Phone: 617-918-8340

Organic Sample #	Matrix/Sampler	Coll. Method	Analysis/Turnaround	Tag/Preservative/Bottles	Station Location	Collected	Inorganic Sample #	For Lab Use Only
EP0441	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	470 (HCl), 471 (HCl), 472 (HCl), 473 (HCl) (4)	DUP05-0825A	08/25/2011 08:25		
EP0442	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	458 (HCl), 459 (HCl), 460 (HCl), 461 (HCl) (4)	VP-3515A	08/25/2011 08:20		
EP0443	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	474 (HCl), 475 (HCl), 476 (HCl), 477 (HCl) (4)	VP-3520A	08/25/2011 08:45		
EP0444	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS, 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7), 1,4DIOX(7)	494 (HCl), 495 (HCl), 496 (HCl), 497 (HCl), 498 (4 C), 499 (4 C), 500 (4 C), 503 (4 C) (8)	VP-3525A	08/25/2011 09:25		
EP0446	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	482 (HCl), 483 (HCl), 484 (HCl), 485 (HCl) (4)	VP-3530A	08/25/2011 09:50		
EP0447	Ground Water/ Josh Stewart	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	486 (HCl), 487 (HCl), 488 (HCl), 489 (HCl) (4)	VP-3535A	08/25/2011 10:30		
EP0448	Blank/ Corey Rousseau	Grab	VOC-HS, VOC-HS, VOC-HS, VOC-HS	490 (HCl), 491 (HCl), 492 (HCl), 493 (HCl) (4)	DUP05-0825A	08/25/2011 07:00		
EP0449	PE Water/ Corey Rousseau		PE_VOA(7)	504 (4 C) (1)	VLM0414	08/24/2011 08:00		
EP0450	PE Water/ Corey Rousseau		PE_VOA(7)	505 (4 C) (1)	VLM0350	08/25/2011 07:45		

Sample(s) to be used for Lab QC: EP0451 - Special Instructions: Please return cooler at your earliest convenience using the included FedEx Airbill, Thank you.	Shipment for Case Complete? N
Analysis Key: VOC-HS=VOC Headspace Screening, 1,4DIOX=1,4-dioxane, PE_VOA=PE Volatiles in Water (7)	Samples Transferred From Chain of Custody #

Name/Signature	Date	Time	Initials	Comments
<i>Shirley TR</i>	<i>8/25/11</i>			

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 1
OFFICE OF ENVIRONMENTAL MEASUREMENT & EVALUATION
NORTH CHELMSFORD, MASSACHUSETTS 01863-2431

MEMORANDUM

DATE: August 24, 2011

SUBJECT: Commerce Street Plume, Williston, VT - Volatile Organics Analysis of Aqueous Samples

FROM: Scott Clifford, Chemist *SC 8/29/11*

TO: Karen Lumino, RPM

THRU: Dan Boudreau, Chemistry Team Leader *DB 8/29/11*

PROJECT NUMBER: 11080048

DATE OF ANALYSIS: 08/15/11 - 08/19/11

ANALYTICAL PROCEDURE:

Aqueous samples were analyzed using Region I's Standard Operating Procedure for Head Space Screening for Volatile Organic Compounds in Aqueous and Soil Samples (EIA-FLDVOA2.SOP). Aqueous samples were collected in 40 ml vials and were analyzed using a Shimadzu GC14B gas chromatograph (GC) equipped with a 30 meter, 0.53 mm DBPS-624 column, electron capture, and photoionization detectors. Concentrations of volatile organics were calculated using the external standard technique.

Target Compounds and Reporting Limits

Commerce Street Plume, Williston, VT - Aqueous Volatile Organic Target Compounds & Approximate Reporting Limits	
Compound	Reporting Limit (ug/l)
ChloroBenzene	2.0
1,1 Dichloroethylene (11 DCEE)	0.5
cis 1,2-Dichloroethylene (cis 12 DCEE)	0.5
Trans 1,2-Dichloroethylene (Trans 12DCEE)	0.5
Tetrachloroethylene (C ₂ Cl ₄)	0.2
Trichloroethylene (TCE)	0.5
1,1,1-Trichloroethane (111 TCA)	0.5

Results: The results in tables are Tentatively Identified Compounds and Approximate Concentrations

ND () = Nothing detected above reporting limit. Reporting limit in parenthesis.

Note: Results are in ppb (ug/l)

Commerce Street Plume, Williston, VT - Aqueous VOA Results ppb (ug/l)							
08/15/2011 - 08/19/2010							
Sample #	cis		Trans	TCE	C ₂ Cl ₄	111	Chloro
	11 DCEE	12DCEE	12 DCEE			TCA	Benzene
VP-41_15'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-41_20'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-41_25'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-41_30'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-41_35'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-41_35'_DUP	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-41_40'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-43_15''	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-43_20''	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-43_25'	ND(0.5)	ND(0.5)	ND(0.5)	0.6	ND(0.2)	ND(0.2)	ND(2)
VP-43_30'	ND(0.5)	ND(0.5)	ND(0.5)	63	ND(0.2)	ND(0.2)	ND(2)
VP-43_35'	ND(0.5)	2.9	ND(0.5)	805	ND(0.2)	ND(0.2)	ND(2)
VP-43_40'	ND(0.5)	ND(0.5)	ND(0.5)	11	ND(0.2)	ND(0.2)	ND(2)
VP-43_45'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-43_50'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-42_15'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-42_20'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-42_25'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-42_30'	ND(0.5)	ND(0.5)	ND(0.5)	72	ND(0.2)	ND(0.2)	ND(2)
VP-42_35'	ND(0.5)	ND(0.5)	ND(0.5)	36	ND(0.2)	ND(0.2)	ND(2)
VP-42_40'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.2)	ND(2)
VP-42_45'	ND(0.5)	ND(0.5)	ND(0.5)	0.6	ND(0.2)	ND(0.2)	ND(2)
VP-45_15'	ND(0.5)	2.8	ND(0.5)	525	0.1	ND(0.5)	ND(2)
VP-45_20'	ND(0.5)	ND(0.5)	ND(0.5)	104	ND(0.2)	ND(0.5)	ND(2)
VP-45_25'	ND(0.5)	ND(0.5)	ND(0.5)	2.7	ND(0.2)	ND(0.5)	ND(2)
VP-45_30'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
SW81711	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-47_15'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	0.1	ND(0.5)	ND(2)
VP-47_20'	ND(0.5)	ND(0.5)	ND(0.5)	4.8	0.3	ND(0.5)	ND(2)
VP-47_25'	ND(0.5)	ND(0.5)	ND(0.5)	154	12	ND(0.5)	ND(2)
VP-47_30'	ND(0.5)	ND(0.5)	ND(0.5)	211	8.5	ND(0.5)	ND(2)
VP-47_35'	ND(0.5)	3.4	ND(0.5)	1370	14	ND(0.5)	ND(2)
VP-47_40'	ND(0.5)	ND(0.5)	ND(0.5)	33	ND(0.2)	ND(0.5)	ND(2)
VP-47_45'	ND(0.5)	ND(0.5)	ND(0.5)	1.6	ND(0.2)	ND(0.5)	ND(2)
VP-45_5'	ND(0.5)	ND(0.5)	ND(0.5)	1.3	0.1	ND(0.5)	ND(2)
VP-45_10'	ND(0.5)	ND(0.5)	ND(0.5)	23	0.5	ND(0.5)	ND(2)
VP-33_15'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-33_20'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-33_25'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-33_30'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-33_35'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-33_40'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-33_45'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-33_50'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-32_15'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-32_20'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-32_25'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-32_30'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-32_35'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-32_40'	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.2)	ND(0.5)	ND(2)
VP-39_15'	ND(0.5)	ND(0.5)	ND(0.5)	0.1	ND(0.2)	ND(0.5)	ND(2)



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

October 07, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11100009
Project: Commerce Street Plume - Williston, VT
Analysis: VOC Analysis of Water by Headspace
Analyst: Dan Curran

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample analysis was done following the EPA Region I SOP, EIA-VOCSCREEN0.

Aqueous samples were collected in 40 mL vials. The samples were analyzed using a Shimadzu GC 2014 gas chromatograph equipped with a 30 meter, 0.53 mm id. RTX-624 column and detected using electron capture and photoionization detectors. Concentrations of volatile organics were calculated using the external standard technique.

Date Samples Received by the Laboratory: 10/05/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report contains multiple sections and each section is numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau
Chemistry Team Leader

- Qualifiers:** RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

Conversion of ppb/v to ug/m3 = $\text{ppb/v} \cdot (\text{mw}/24.45)$ 24.45 is based on T=25c and P = 760 mm Hg

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00480
Date of Collection: 10/4/2011
Date of Analysis: 10/05/2011
Sample Volume: 10 mL

Lab Sample ID: AB22584
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00481
Date of Collection: 10/4/2011
Date of Analysis: 10/05/2011
Sample Volume: 10 mL

Lab Sample ID: AB22585
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00482
Date of Collection: 10/4/2011
Date of Analysis: 10/05/2011
Sample Volume: 10 mL

Lab Sample ID: AB22586
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	J
	1,1-Dichloroethylene	ND	1.0	J
	Benzene	ND	1.0	J
	Chlorobenzene	ND	1.0	J
	Ethylbenzene	ND	1.0	J
	Tetrachloroethylene	ND	1.0	J
	Toluene	ND	0.50	J
	Trans-1,2-Dichloroethylene	ND	1.0	J
	Trichloroethylene	ND	1.0	J
	cis-1,2-Dichloroethylene	ND	0.50	J
	m/p-Xylene	ND	1.5	J
	o-Xylene	ND	1.0	J

Comments: Sample was not preserved.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00483
Date of Collection: 10/4/2011
Date of Analysis: 10/05/2011
Sample Volume: 10 mL

Lab Sample ID: AB22587
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00484
Date of Collection: 10/4/2011
Date of Analysis: 10/05/2011
Sample Volume: 10 mL

Lab Sample ID: AB22588
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00485
Date of Collection: 10/4/2011
Date of Analysis: 10/05/2011
Sample Volume: 10 mL

Lab Sample ID: AB22589
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00486
Date of Collection: 10/4/2011
Date of Analysis: 10/05/2011
Sample Volume: 10 mL

Lab Sample ID: AB22590
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00487
Date of Collection: 10/4/2011
Date of Analysis: 10/05/2011
Sample Volume: 10 mL

Lab Sample ID: AB22591
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	J
	1,1-Dichloroethylene	ND	1.0	J
	Benzene	ND	1.0	J
	Chlorobenzene	ND	1.0	J
	Ethylbenzene	ND	1.0	J
	Tetrachloroethylene	ND	1.0	J
	Toluene	ND	0.50	J
	Trans-1,2-Dichloroethylene	ND	1.0	J
	Trichloroethylene	ND	1.0	J
	cis-1,2-Dichloroethylene	ND	0.50	J
	m/p-Xylene	ND	1.5	J
	o-Xylene	ND	1.0	J

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00488
Date of Collection: 10/4/2011
Date of Analysis: 10/05/2011
Sample Volume: 10 mL

Lab Sample ID: AB22592
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	5.3	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00489
Date of Collection: 10/4/2011
Date of Analysis: 10/05/2011
Sample Volume: 10 mL

Lab Sample ID: AB22593
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	430	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00490
Date of Collection: 10/4/2011
Date of Analysis: 10/05/2011
Sample Volume: 10 mL

Lab Sample ID: AB22594
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	310	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00491
Date of Collection: 10/4/2011
Date of Analysis: 10/05/2011
Sample Volume: 10 mL

Lab Sample ID: AB22595
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Sample ID: AB22584

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
1,1,1-Trichloroethane	ND	ND	ND	50
1,1-Dichloroethylene	ND	ND	ND	50
Benzene	ND	ND	ND	50
Chlorobenzene	ND	ND	ND	50
Ethylbenzene	ND	ND	ND	50
Tetrachloroethylene	ND	ND	ND	50
Toluene	ND	ND	ND	50
Trans-1,2-Dichloroethylene	ND	ND	ND	50
Trichloroethylene	ND	ND	ND	50
cis-1,2-Dichloroethylene	ND	ND	ND	50
m/p-Xylene	ND	ND	ND	50
o-Xylene	ND	ND	ND	50



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

October 07, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11100016
Project: Commerce Street Plume - Williston, VT
Analysis: VOAs in Water
Analyst: Joseph Montanaro *JM 10/07/11*

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, EIASOP-VOAGCMS9.

Samples were analyzed by GC/MS. Samples were introduced to the GC via a Tekmar pre-concentrator and an Archon autosampler. The analysis SOP is based on US EPA Method 8260B, method 5030B, rev 2.0 SW-846, Rev 2.0, 1996. Method 624, 40CFR Part 136 Appendix A, July 1, 1992, and USEPA CLP SOW for Organic Analysis OLM04.2, 1999.

Date Samples Received by the Laboratory: 10/06/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340.

Sincerely,

Daniel N. Boudreau 10/12/11

Daniel N. Boudreau
Chemistry Team Leader

Qualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP00489	Lab Sample ID:	AB22674
Date of Collection:	10/4/2011	Matrix:	GW
Date of Extraction:	10/6/11	Volume Purged:	5 mL
Date of Analysis:	10/6/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	20
Wet Weight Extracted:	N/A	pH:	4

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	20	J
71-55-6	1,1,1-Trichloroethane	ND	20	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	J
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	20	J
79-00-5	1,1,2-Trichloroethane	ND	20	J
75-35-4	1,1-Dichloroethylene	ND	20	J
563-58-6	1,1-Dichloropropene	ND	20	J
75-34-3	1,1-dichloroethane	ND	20	J
87-61-6	1,2,3-Trichlorobenzene	ND	20	J
96-18-4	1,2,3-Trichloropropane	ND	20	J
120-82-1	1,2,4-Trichlorobenzene	ND	20	J
95-63-6	1,2,4-Trimethylbenzene	ND	20	J
96-12-8	1,2-Dibromo-3-Chloropropane	ND	20	J
106-93-4	1,2-Dibromoethane	ND	20	J
95-50-1	1,2-Dichlorobenzene	ND	20	J
107-06-2	1,2-Dichloroethane	ND	20	J
78-87-5	1,2-Dichloropropane	ND	20	J
108-67-8	1,3,5-Trimethylbenzene	ND	20	J
541-73-1	1,3-Dichlorobenzene	ND	20	J
142-28-9	1,3-Dichloropropane	ND	20	J
106-46-7	1,4-Dichlorobenzene	ND	20	J
594-20-7	2,2-Dichloropropane	ND	20	J
78-93-3	2-Butanone (MEK)	ND	20	J
95-49-8	2-Chlorotoluene	ND	20	J
591-78-6	2-Hexanone	ND	20	J
67-64-1	2-Propanone (acetone)	ND	20	J
106-43-4	4-Chlorotoluene	ND	20	J
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	20	J
107-13-1	Acrylonitrile	ND	20	J
71-43-2	Benzene	ND	20	J
108-86-1	Bromobenzene	ND	20	J
74-97-5	Bromochloromethane	ND	20	J
75-27-4	Bromodichloromethane	ND	20	J
75-25-2	Bromoform	ND	20	J
74-83-9	Bromomethane	ND	20	J
75-15-0	Carbon Disulfide	ND	20	J
56-23-5	Carbon tetrachloride	ND	20	J
108-90-7	Chlorobenzene	ND	20	J
75-00-3	Chloroethane	ND	20	J

67-66-3	Chloroform	ND	20	J
74-87-3	Chloromethane	ND	20	J
124-48-1	Dibromochloromethane	ND	20	J
74-95-3	Dibromomethane	ND	20	J
75-71-8	Dichlorodifluoromethane	ND	20	J
60-29-7	Ethyl Ether	ND	20	J
100-41-4	Ethylbenzene	ND	20	J
87-68-3	Hexachlorobutadiene	ND	20	J
98-82-8	Isopropylbenzene	ND	20	J
108-38-3/106-42-	M/P Xylene	ND	40	J
1634-04-4	Methyl-t-Butyl Ether	ND	20	J
75-09-2	Methylene Chloride	ND	20	J
104-51-8	N-Butylbenzene	ND	20	J
103-65-1	N-Propylbenzene	ND	20	J
91-20-3	Naphthalene	ND	20	J
95-47-6	Ortho Xylene	ND	20	J
99-87-6	Para-Isopropyltoluene	ND	20	J
135-98-8	Sec-Butylbenzene	ND	20	J
100-42-5	Styrene	ND	20	J
98-06-6	Tert-Butylbenzene	ND	20	J
127-18-4	Tetrachloroethylene	ND	20	J
109-99-9	Tetrahydrofuran	ND	20	J
108-88-3	Toluene	ND	20	J
156-60-5	Trans-1,2-Dichloroethylene	ND	20	J
79-01-6	Trichloroethylene	120	20	J
75-69-4	Trichlorofluoromethane	ND	20	J
108-05-4	Vinyl Acetate	ND	20	J
75-01-4	Vinyl Chloride	ND	20	J
10061-01-5	c-1,3-dichloropropene	ND	20	J
156-59-2	cis-1,2-Dichloroethylene	ND	20	J
10061-02-6	t-1,3-Dichloropropene	ND	20	J

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	112	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	98	78 - 111

Comments: The pH for this sample was greater than two and results are qualified with a J.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

Laboratory Blank for SVOAMW

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	GW
Date of Extraction:	10/6/11	Volume Purged:	5.0 mL
Date of Analysis:	10/6/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	-6

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	
71-55-6	1,1,1-Trichloroethane	ND	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	
79-00-5	1,1,2-Trichloroethane	ND	1.0	
75-35-4	1,1-Dichloroethylene	ND	1.0	
563-58-6	1,1-Dichloropropene	ND	1.0	
75-34-3	1,1-dichloroethane	ND	1.0	
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	
96-18-4	1,2,3-Trichloropropane	ND	1.0	
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	
106-93-4	1,2-Dibromoethane	ND	1.0	
95-50-1	1,2-Dichlorobenzene	ND	1.0	
107-06-2	1,2-Dichloroethane	ND	1.0	
78-87-5	1,2-Dichloropropane	ND	1.0	
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	
541-73-1	1,3-Dichlorobenzene	ND	1.0	
142-28-9	1,3-Dichloropropane	ND	1.0	
106-46-7	1,4-Dichlorobenzene	ND	1.0	
594-20-7	2,2-Dichloropropane	ND	1.0	
78-93-3	2-Butanone (MEK)	ND	1.0	
95-49-8	2-Chlorotoluene	ND	1.0	
591-78-6	2-Hexanone	ND	1.0	
67-64-1	2-Propanone (acetone)	ND	1.0	
106-43-4	4-Chlorotoluene	ND	1.0	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	
107-13-1	Acrylonitrile	ND	1.0	
71-43-2	Benzene	ND	1.0	
108-86-1	Bromobenzene	ND	1.0	
74-97-5	Bromochloromethane	ND	1.0	
75-27-4	Bromodichloromethane	ND	1.0	
75-25-2	Bromoform	ND	1.0	
74-83-9	Bromomethane	ND	1.0	
75-15-0	Carbon Disulfide	ND	1.0	
56-23-5	Carbon tetrachloride	ND	1.0	
108-90-7	Chlorobenzene	ND	1.0	
75-00-3	Chloroethane	ND	1.0	

67-66-3	Chloroform	ND	1.0
74-87-3	Chloromethane	ND	1.0
124-48-1	Dibromochloromethane	ND	1.0
74-95-3	Dibromomethane	ND	1.0
75-71-8	Dichlorodifluoromethane	ND	1.0
60-29-7	Ethyl Ether	ND	1.0
100-41-4	Ethylbenzene	ND	1.0
87-68-3	Hexachlorobutadiene	ND	1.0
98-82-8	Isopropylbenzene	ND	1.0
108-38-3/106-42-	M/P Xylene	ND	2.0
1634-04-4	Methyl-t-Butyl Ether	ND	1.0
75-09-2	Methylene Chloride	ND	1.0
104-51-8	N-Butylbenzene	ND	1.0
103-65-1	N-Propylbenzene	ND	1.0
91-20-3	Naphthalene	ND	1.0
95-47-6	Ortho Xylene	ND	1.0
99-87-6	Para-Isopropyltoluene	ND	1.0
135-98-8	Sec-Butylbenzene	ND	1.0
100-42-5	Styrene	ND	1.0
98-06-6	Tert-Butylbenzene	ND	1.0
127-18-4	Tetrachloroethylene	ND	1.0
109-99-9	Tetrahydrofuran	ND	1.0
108-88-3	Toluene	ND	1.0
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0
79-01-6	Trichloroethylene	ND	1.0
75-69-4	Trichlorofluoromethane	ND	1.0
108-05-4	Vinyl Acetate	ND	1.0
75-01-4	Vinyl Chloride	ND	1.0
10061-01-5	c-1,3-dichloropropene	ND	1.0
156-59-2	cis-1,2-Dichloroethylene	ND	1.0
10061-02-6	t-1,3-Dichloropropene	ND	1.0

Surrogate Compounds	Recoveries (%)	QC Ranges
I,2-Dichloroethane-D4	107	74 - 136
Toluene-D8	99	85 - 118
1,4-Bromofluorobenzene	97	78 - 111

Comments: Laboratory blank is associated with all samples in this project.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP00491	Lab Sample ID:	AB22675
Date of Collection:	10/4/2011	Matrix:	GW
Date of Extraction:	10/6/11	Volume Purged:	5 mL
Date of Analysis:	10/6/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	6

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	J
71-55-6	1,1,1-Trichloroethane	ND	1.0	J
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	J
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	1.0	J
79-00-5	1,1,2-Trichloroethane	ND	1.0	J
75-35-4	1,1-Dichloroethylene	ND	1.0	J
563-58-6	1,1-Dichloropropene	ND	1.0	J
75-34-3	1,1-dichloroethane	ND	1.0	J
87-61-6	1,2,3-Trichlorobenzene	ND	1.0	J
96-18-4	1,2,3-Trichloropropane	ND	1.0	J
120-82-1	1,2,4-Trichlorobenzene	ND	1.0	J
95-63-6	1,2,4-Trimethylbenzene	ND	1.0	J
96-12-8	1,2-Dibromo-3-Chloropropane	ND	1.0	J
106-93-4	1,2-Dibromoethane	ND	1.0	J
95-50-1	1,2-Dichlorobenzene	ND	1.0	J
107-06-2	1,2-Dichloroethane	ND	1.0	J
78-87-5	1,2-Dichloropropane	ND	1.0	J
108-67-8	1,3,5-Trimethylbenzene	ND	1.0	J
541-73-1	1,3-Dichlorobenzene	ND	1.0	J
142-28-9	1,3-Dichloropropane	ND	1.0	J
106-46-7	1,4-Dichlorobenzene	ND	1.0	J
594-20-7	2,2-Dichloropropane	ND	1.0	J
78-93-3	2-Butanone (MEK)	ND	1.0	J
95-49-8	2-Chlorotoluene	ND	1.0	J
591-78-6	2-Hexanone	ND	1.0	J
67-64-1	2-Propanone (acetone)	1.6	1.0	J
106-43-4	4-Chlorotoluene	ND	1.0	J
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	1.0	J
107-13-1	Acrylonitrile	ND	1.0	J
71-43-2	Benzene	ND	1.0	J
108-86-1	Bromobenzene	ND	1.0	J
74-97-5	Bromochloromethane	ND	1.0	J
75-27-4	Bromodichloromethane	ND	1.0	J
75-25-2	Bromoform	ND	1.0	J
74-83-9	Bromomethane	ND	1.0	J
75-15-0	Carbon Disulfide	ND	1.0	J
56-23-5	Carbon tetrachloride	ND	1.0	J
108-90-7	Chlorobenzene	ND	1.0	J
75-00-3	Chloroethane	ND	1.0	J

67-66-3	Chloroform	ND	1.0	J
74-87-3	Chloromethane	ND	1.0	J
124-48-1	Dibromochloromethane	ND	1.0	J
74-95-3	Dibromomethane	ND	1.0	J
75-71-8	Dichlorodifluoromethane	ND	1.0	J
60-29-7	Ethyl Ether	ND	1.0	J
100-41-4	Ethylbenzene	ND	1.0	J
87-68-3	Hexachlorobutadiene	ND	1.0	J
98-82-8	Isopropylbenzene	ND	1.0	J
108-38-3/106-42-	M/P Xylene	ND	2.0	J
1634-04-4	Methyl-t-Butyl Ether	ND	1.0	J
75-09-2	Methylene Chloride	ND	1.0	J
104-51-8	N-Butylbenzene	ND	1.0	J
103-65-1	N-Propylbenzene	ND	1.0	J
91-20-3	Naphthalene	ND	1.0	J
95-47-6	Ortho Xylene	ND	1.0	J
99-87-6	Para-Isopropyltoluene	ND	1.0	J
135-98-8	Sec-Butylbenzene	ND	1.0	J
100-42-5	Styrene	ND	1.0	J
98-06-6	Tert-Butylbenzene	ND	1.0	J
127-18-4	Tetrachloroethylene	ND	1.0	J
109-99-9	Tetrahydrofuran	ND	1.0	J
108-88-3	Toluene	ND	1.0	J
156-60-5	Trans-1,2-Dichloroethylene	ND	1.0	J
79-01-6	Trichloroethylene	ND	1.0	J
75-69-4	Trichlorofluoromethane	ND	1.0	J
108-05-4	Vinyl Acetate	ND	1.0	J
75-01-4	Vinyl Chloride	ND	1.0	J
10061-01-5	c-1,3-dichloropropene	ND	1.0	J
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	J
10061-02-6	t-1,3-Dichloropropene	ND	1.0	J

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	108	74 - 136
Toluene-D8	98	85 - 118
1,4-Bromofluorobenzene	94	78 - 111

Comments: The pH for this sample was greater than two and results are qualified with a J.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID:	EP00496	Lab Sample ID:	AB22676
Date of Collection:	10/5/2011	Matrix:	GW
Date of Extraction:	10/6/11	Volume Purged:	5 mL
Date of Analysis:	10/6/11	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	10
Wet Weight Extracted:	N/A	pH:	<2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	10	
71-55-6	1,1,1-Trichloroethane	ND	10	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	
79-00-5	1,1,2-Trichloroethane	ND	10	
75-35-4	1,1-Dichloroethylene	ND	10	
563-58-6	1,1-Dichloropropene	ND	10	
75-34-3	1,1-dichloroethane	ND	10	
87-61-6	1,2,3-Trichlorobenzene	ND	10	
96-18-4	1,2,3-Trichloropropane	ND	10	
120-82-1	1,2,4-Trichlorobenzene	ND	10	
95-63-6	1,2,4-Trimethylbenzene	ND	10	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	10	
106-93-4	1,2-Dibromoethane	ND	10	
95-50-1	1,2-Dichlorobenzene	ND	10	
107-06-2	1,2-Dichloroethane	ND	10	
78-87-5	1,2-Dichloropropane	ND	10	
108-67-8	1,3,5-Trimethylbenzene	ND	10	
541-73-1	1,3-Dichlorobenzene	ND	10	
142-28-9	1,3-Dichloropropane	ND	10	
106-46-7	1,4-Dichlorobenzene	ND	10	
594-20-7	2,2-Dichloropropane	ND	10	
78-93-3	2-Butanone (MEK)	ND	10	
95-49-8	2-Chlorotoluene	ND	10	
591-78-6	2-Hexanone	ND	10	
67-64-1	2-Propanone (acetone)	ND	10	
106-43-4	4-Chlorotoluene	ND	10	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	10	
107-13-1	Acrylonitrile	ND	10	
71-43-2	Benzene	ND	10	
108-86-1	Bromobenzene	ND	10	
74-97-5	Bromochloromethane	ND	10	
75-27-4	Bromodichloromethane	ND	10	
75-25-2	Bromoform	ND	10	
74-83-9	Bromomethane	ND	10	
75-15-0	Carbon Disulfide	ND	10	
56-23-5	Carbon tetrachloride	ND	10	
108-90-7	Chlorobenzene	ND	10	
75-00-3	Chloroethane	ND	10	

67-66-3	Chloroform	ND	10
74-87-3	Chloromethane	ND	10
124-48-1	Dibromochloromethane	ND	10
74-95-3	Dibromomethane	ND	10
75-71-8	Dichlorodifluoromethane	ND	10
60-29-7	Ethyl Ether	ND	10
100-41-4	Ethylbenzene	ND	10
87-68-3	Hexachlorobutadiene	ND	10
98-82-8	Isopropylbenzene	ND	10
108-38-3/106-42-	M/P Xylene	ND	20
1634-04-4	Methyl-t-Butyl Ether	ND	10
75-09-2	Methylene Chloride	ND	10
104-51-8	N-Butylbenzene	ND	10
103-65-1	N-Propylbenzene	ND	10
91-20-3	Naphthalene	ND	10
95-47-6	Ortho Xylene	ND	10
99-87-6	Para-Isopropyltoluene	ND	10
135-98-8	Sec-Butylbenzene	ND	10
100-42-5	Styrene	ND	10
98-06-6	Tert-Butylbenzene	ND	10
127-18-4	Tetrachloroethylene	ND	10
109-99-9	Tetrahydrofuran	ND	10
108-88-3	Toluene	ND	10
156-60-5	Trans-1,2-Dichloroethylene	ND	10
79-01-6	Trichloroethylene	170	10
75-69-4	Trichlorofluoromethane	ND	10
108-05-4	Vinyl Acetate	ND	10
75-01-4	Vinyl Chloride	ND	10
10061-01-5	c-1,3-dichloropropene	ND	10
156-59-2	cis-1,2-Dichloroethylene	ND	10
10061-02-6	t-1,3-Dichloropropene	ND	10

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	116	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	97	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOAs in Water

Client Sample ID: EP00497
Date of Collection: 10/5/2011
Date of Extraction: 10/6/11
Date of Analysis: 10/6/11
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A

Lab Sample ID: AB22677
Matrix: GW
Volume Purged: 5 mL
Percent Solids: N/A
Extract Dilution: 20
pH: <2

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
630-20-6	1,1,1,2-Tetrachloroethane	ND	20	
71-55-6	1,1,1-Trichloroethane	ND	20	
79-34-5	1,1,2,2-Tetrachloroethane	ND	20	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	20	
79-00-5	1,1,2-Trichloroethane	ND	20	
75-35-4	1,1-Dichloroethylene	ND	20	
563-58-6	1,1-Dichloropropene	ND	20	
75-34-3	1,1-dichloroethane	ND	20	
87-61-6	1,2,3-Trichlorobenzene	ND	20	
96-18-4	1,2,3-Trichloropropane	ND	20	
120-82-1	1,2,4-Trichlorobenzene	ND	20	
95-63-6	1,2,4-Trimethylbenzene	ND	20	
96-12-8	1,2-Dibromo-3-Chloropropane	ND	20	
106-93-4	1,2-Dibromoethane	ND	20	
95-50-1	1,2-Dichlorobenzene	ND	20	
107-06-2	1,2-Dichloroethane	ND	20	
78-87-5	1,2-Dichloropropane	ND	20	
108-67-8	1,3,5-Trimethylbenzene	ND	20	
541-73-1	1,3-Dichlorobenzene	ND	20	
142-28-9	1,3-Dichloropropane	ND	20	
106-46-7	1,4-Dichlorobenzene	ND	20	
594-20-7	2,2-Dichloropropane	ND	20	
78-93-3	2-Butanone (MEK)	ND	20	
95-49-8	2-Chlorotoluene	ND	20	
591-78-6	2-Hexanone	ND	20	
67-64-1	2-Propanone (acetone)	ND	20	
106-43-4	4-Chlorotoluene	ND	20	
108-10-1	4-Methyl-2-Pentanone(MIBK)	ND	20	
107-13-1	Acrylonitrile	ND	20	
71-43-2	Benzene	ND	20	
108-86-1	Bromobenzene	ND	20	
74-97-5	Bromochloromethane	ND	20	
75-27-4	Bromodichloromethane	ND	20	
75-25-2	Bromoform	ND	20	
74-83-9	Bromomethane	ND	20	
75-15-0	Carbon Disulfide	ND	20	
56-23-5	Carbon tetrachloride	ND	20	
108-90-7	Chlorobenzene	ND	20	
75-00-3	Chloroethane	ND	20	

67-66-3	Chloroform	ND	20
74-87-3	Chloromethane	ND	20
124-48-1	Dibromochloromethane	ND	20
74-95-3	Dibromomethane	ND	20
75-71-8	Dichlorodifluoromethane	ND	20
60-29-7	Ethyl Ether	ND	20
100-41-4	Ethylbenzene	ND	20
87-68-3	Hexachlorobutadiene	ND	20
98-82-8	Isopropylbenzene	ND	20
108-38-3/106-42-	M/P Xylene	ND	40
1634-04-4	Methyl-t-Butyl Ether	ND	20
75-09-2	Methylene Chloride	ND	20
104-51-8	N-Butylbenzene	ND	20
103-65-1	N-Propylbenzene	ND	20
91-20-3	Naphthalene	ND	20
95-47-6	Ortho Xylene	ND	20
99-87-6	Para-Isopropyltoluene	ND	20
135-98-8	Sec-Butylbenzene	ND	20
100-42-5	Styrene	ND	20
98-06-6	Tert-Butylbenzene	ND	20
127-18-4	Tetrachloroethylene	ND	20
109-99-9	Tetrahydrofuran	ND	20
108-88-3	Toluene	ND	20
156-60-5	Trans-1,2-Dichloroethylene	ND	20
79-01-6	Trichloroethylene	230	20
75-69-4	Trichlorofluoromethane	ND	20
108-05-4	Vinyl Acetate	ND	20
75-01-4	Vinyl Chloride	ND	20
10061-01-5	c-1,3-dichloropropene	ND	20
156-59-2	cis-1,2-Dichloroethylene	ND	20
10061-02-6	t-1,3-Dichloropropene	ND	20

Surrogate Compounds	Recoveries (%)	QC Ranges
1,2-Dichloroethane-D4	117	74 - 136
Toluene-D8	100	85 - 118
1,4-Bromofluorobenzene	96	78 - 111

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

VOA MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Commerce Street Plume - Williston, VT

Sample ID: AB22674

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
1,1,1,2-Tetrachloroethane	400	ND	430	108	67 - 129
1,1,1-Trichloroethane	400	ND	500	125	75 - 139
1,1,2,2-Tetrachloroethane	400	ND	400	100	50 - 142
1,1,2-Trichloro-1,2,2-Trifluoroethane	400	ND	490	122	55 - 135
1,1,2-Trichloroethane	400	ND	430	108	62 - 142
1,1-Dichloroethylene	400	ND	470	118	80 - 138
1,1-Dichloropropene	400	ND	420	105	73 - 131
1,1-dichloroethane	400	ND	470	118	61 - 152
1,2,3-Trichlorobenzene	400	ND	380	95	49 - 143
1,2,3-Trichloropropane	400	ND	380	95	53 - 135
1,2,4-Trichlorobenzene	400	ND	400	100	63 - 131
1,2,4-Trimethylbenzene	400	ND	430	108	79 - 142
1,2-Dibromo-3-Chloropropane	400	ND	410	102	28 - 122
1,2-Dibromoethane	400	ND	410	102	53 - 139
1,2-Dichlorobenzene	400	ND	390	98	74 - 129
1,2-Dichloroethane	400	ND	470	118	61 - 142
1,2-Dichloropropane	400	ND	390	98	71 - 126
1,3,5-Trimethylbenzene	400	ND	420	105	77 - 140
1,3-Dichlorobenzene	400	ND	390	98	78 - 127
1,3-Dichloropropane	400	ND	420	105	63 - 130
1,4-Dichlorobenzene	400	ND	400	100	72 - 131
2,2-Dichloropropane	400	ND	550	138	50 - 139
2-Butanone (MEK)	400	ND	430	108	29 - 163
2-Chlorotoluene	400	ND	410	102	74 - 134
2-Hexanone	400	ND	420	105	36 - 141
2-Propanone (acetone)	400	ND	440	110	29 - 164
4-Chlorotoluene	400	ND	380	95	68 - 141
4-Methyl-2-Pentanone(MIBK)	400	ND	420	105	35 - 139
Acrylonitrile	400	ND	430	108	42 - 150
Benzene	400	ND	440	110	78 - 134
Bromobenzene	400	ND	400	100	76 - 126
Bromochloromethane	400	ND	460	115	62 - 140
Bromodichloromethane	400	ND	440	110	62 - 133
Bromoform	400	ND	430	108	31 - 133
Bromomethane	400	ND	520	130	58 - 148
Carbon Disulfide	400	ND	470	118	66 - 135
Carbon tetrachloride	400	ND	500	125	62 - 146
Chlorobenzene	400	ND	480	120	74 - 139
Chloroethane	400	ND	460	115	65 - 145
Chloroform	400	ND	490	122	60 - 144
Chloromethane	400	ND	420	105	58 - 134
Dibromochloromethane	400	ND	480	120	34 - 140
Dibromomethane	400	ND	420	105	67 - 125
Dichlorodifluoromethane	400	ND	460	115	30 - 132
Ethyl Ether	400	ND	480	120	58 - 145
Ethylbenzene	400	ND	430	108	73 - 143
Hexachlorobutadiene	400	ND	410	102	56 - 144
Isopropylbenzene	400	ND	420	105	73 - 139
M/P Xylene	800	ND	840	105	79 - 136

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Methyl-t-Butyl Ether	400	ND	480	120	50 - 144
Methylene Chloride	400	ND	470	118	70 - 144
N-Butylbenzene	400	ND	430	108	68 - 143
N-Propylbenzene	400	ND	410	102	72 - 149
Naphthalene	400	ND	400	100	33 - 154
Ortho Xylene	400	ND	440	110	80 - 129
Para-Isopropyltoluene	400	ND	430	108	71 - 140
Sec-Butylbenzene	400	ND	420	105	75 - 148
Styrene	400	ND	450	112	61 - 148
Tert-Butylbenzene	400	ND	410	102	71 - 139
Tetrachloroethylene	400	ND	370	93	45 - 145
Tetrahydrofuran	400	ND	450	112	37 - 143
Toluene	400	ND	450	112	77 - 142
Trans-1,2-Dichloroethylene	400	ND	450	112	79 - 139
Trichloroethylene	400	120	510	98	65 - 143
Trichlorofluoromethane	400	ND	510	128	58 - 161
Vinyl Acetate	400	ND	480	120	22 - 173
Vinyl Chloride	400	ND	450	112	68 - 139
c-1,3-dichloropropene	400	ND	470	118	51 - 144
cis-1,2-Dichloroethylene	400	ND	460	115	59 - 154
t-1,3-Dichloropropene	400	ND	470	118	47 - 145

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Sample ID: AB22674

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	400	400	100	8	40
1,1,1-Trichloroethane	400	470	118	6	16
1,1,2,2-Tetrachloroethane	400	400	100	0	40
1,1,2-Trichloro-1,2,2-Trifluoroetha	400	480	120	2	40
1,1,2-Trichloroethane	400	430	108	0	40
1,1-Dichloroethylene	400	450	112	5	35
1,1-Dichloropropene	400	410	102	3	40
1,1-dichloroethane	400	440	110	7	40
1,2,3-Trichlorobenzene	400	400	100	5	40
1,2,3-Trichloropropane	400	370	93	3	40
1,2,4-Trichlorobenzene	400	400	100	0	40
1,2,4-Trimethylbenzene	400	420	105	3	40
1,2-Dibromo-3-Chloropropane	400	400	100	2	40
1,2-Dibromoethane	400	400	100	2	40
1,2-Dichlorobenzene	400	390	98	0	40
1,2-Dichloroethane	400	450	112	5	23
1,2-Dichloropropane	400	400	100	3	40
1,3,5-Trimethylbenzene	400	420	105	0	40
1,3-Dichlorobenzene	400	390	98	0	40
1,3-Dichloropropane	400	410	102	3	40
1,4-Dichlorobenzene	400	380	95	5	21
2,2-Dichloropropane	400	520	130	6	40
2-Butanone (MEK)	400	410	102	6	40
2-Chlorotoluene	400	400	100	2	40
2-Hexanone	400	390	98	7	40
2-Propanone (acetone)	400	400	100	10	40
4-Chlorotoluene	400	380	95	0	40
4-Methyl-2-Pentanone(MIBK)	400	420	105	0	40
Acrylonitrile	400	440	110	2	40
Benzene	400	430	108	2	14
Bromobenzene	400	400	100	0	40
Bromochloromethane	400	450	112	3	40
Bromodichloromethane	400	430	108	2	21
Bromoform	400	420	105	3	40
Bromomethane	400	550	138	6	40
Carbon Disulfide	400	450	112	5	40
Carbon tetrachloride	400	460	115	8	19
Chlorobenzene	400	450	112	7	40
Chloroethane	400	450	112	3	40
Chloroform	400	460	115	6	16
Chloromethane	400	430	108	3	40
Dibromochloromethane	400	450	112	7	36
Dibromomethane	400	410	102	3	40
Dichlorodifluoromethane	400	450	112	3	40
Ethyl Ether	400	470	118	2	40
Ethylbenzene	400	420	105	3	40
Hexachlorobutadiene	400	410	102	0	40
Isopropylbenzene	400	420	105	0	40
M/P Xylene	800	840	105	0	40
Methyl-t-Butyl Ether	400	460	115	4	40
Methylene Chloride	400	450	112	5	40
N-Butylbenzene	400	430	108	0	40
N-Propylbenzene	400	410	102	0	40
Naphthalene	400	430	108	8	40

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Ortho Xylene	400	430	108	2	40
Para-Isopropyltoluene	400	430	108	0	40
Sec-Butylbenzene	400	420	105	0	40
Styrene	400	440	110	2	40
Tert-Butylbenzene	400	410	102	0	40
Tetrachloroethylene	400	340	85	8	40
Tetrahydrofuran	400	440	110	2	40
Toluene	400	430	108	4	40
Trans-1,2-Dichloroethylene	400	430	108	4	40
Trichloroethylene	400	490	93	5	22
Trichlorofluoromethane	400	470	118	8	40
Vinyl Acetate	400	470	118	2	40
Vinyl Chloride	400	460	115	3	19
c-1,3-dichloropropene	400	460	115	3	40
cis-1,2-Dichloroethylene	400	440	110	4	40
t-1,3-Dichloropropene	400	460	115	3	40

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Commerce Street Plume - Williston, VT

Sample ID: AB22674

PARAMETER	SAMPLE RESULT	SAMPLE DUPLICATE RESULT	PRECISION RPD	QC LIMITS
	ug/L	ug/L	%	
1,1,1,2-Tetrachloroethane	ND	ND	ND	30
1,1,1-Trichloroethane	ND	ND	ND	30
1,1,2,2-Tetrachloroethane	ND	ND	ND	30
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ND	ND	30
1,1,2-Trichloroethane	ND	ND	ND	30
1,1-Dichloroethylene	ND	ND	ND	30
1,1-Dichloropropene	ND	ND	ND	30
1,1-dichloroethane	ND	ND	ND	30
1,2,3-Trichlorobenzene	ND	ND	ND	30
1,2,3-Trichloropropane	ND	ND	ND	30
1,2,4-Trichlorobenzene	ND	ND	ND	30
1,2,4-Trimethylbenzene	ND	ND	ND	30
1,2-Dibromo-3-Chloropropane	ND	ND	ND	30
1,2-Dibromoethane	ND	ND	ND	30
1,2-Dichlorobenzene	ND	ND	ND	30
1,2-Dichloroethane	ND	ND	ND	30
1,2-Dichloropropane	ND	ND	ND	30
1,3,5-Trimethylbenzene	ND	ND	ND	30
1,3-Dichlorobenzene	ND	ND	ND	30
1,3-Dichloropropane	ND	ND	ND	30
1,4-Dichlorobenzene	ND	ND	ND	30
2,2-Dichloropropane	ND	ND	ND	30
2-Butanone (MEK)	ND	ND	ND	30
2-Chlorotoluene	ND	ND	ND	30
2-Hexanone	ND	ND	ND	30
2-Propanone (acetone)	ND	ND	ND	30
4-Chlorotoluene	ND	ND	ND	30
4-Methyl-2-Pentanone(MIBK)	ND	ND	ND	30
Acrylonitrile	ND	ND	ND	30
Benzene	ND	ND	ND	30
Bromobenzene	ND	ND	ND	30
Bromochloromethane	ND	ND	ND	30
Bromodichloromethane	ND	ND	ND	30
Bromoform	ND	ND	ND	30
Bromomethane	ND	ND	ND	30
Carbon Disulfide	ND	ND	ND	30
Carbon tetrachloride	ND	ND	ND	30
Chlorobenzene	ND	ND	ND	30
Chloroethane	ND	ND	ND	30
Chloroform	ND	ND	ND	30
Chloromethane	ND	ND	ND	30
Dibromochloromethane	ND	ND	ND	30
Dibromomethane	ND	ND	ND	30
Dichlorodifluoromethane	ND	ND	ND	30
Ethyl Ether	ND	ND	ND	30
Ethylbenzene	ND	ND	ND	30
Hexachlorobutadiene	ND	ND	ND	30
Isopropylbenzene	ND	ND	ND	30
M/P Xylene	ND	ND	ND	30
Methyl-t-Butyl Ether	ND	ND	ND	30

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Methylene Chloride	ND	ND	ND	30
N-Butylbenzene	ND	ND	ND	30
N-Propylbenzene	ND	ND	ND	30
Naphthalene	ND	ND	ND	30
Ortho Xylene	ND	ND	ND	30
Para-Isopropyltoluene	ND	ND	ND	30
Sec-Butylbenzene	ND	ND	ND	30
Styrene	ND	ND	ND	30
Tert-Butylbenzene	ND	ND	ND	30
Tetrachloroethylene	ND	ND	ND	30
Tetrahydrofuran	ND	ND	ND	30
Toluene	ND	ND	ND	30
Trans-1,2-Dichloroethylene	ND	ND	ND	30
Trichloroethylene	120	120	0.00	30
Trichlorofluoromethane	ND	ND	ND	30
Vinyl Acetate	ND	ND	ND	30
Vinyl Chloride	ND	ND	ND	30
c-1,3-dichloropropene	ND	ND	ND	30
cis-1,2-Dichloroethylene	ND	ND	ND	30
t-1,3-Dichloropropene	ND	ND	ND	30

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Laboratory Fortified Blank (LFB) Results

Commerce Street Plume - Williston, VT

PARAMETER	LFB AMOUNT SPIKED ug/mL	LFB RESULT ug/mL	LFB RECOVERY %	QC LIMITS %
1,1,1,2-Tetrachloroethane	20	22	110	79 - 136
1,1,1-Trichloroethane	20	25	125	75 - 146
1,1,2,2-Tetrachloroethane	20	21	105	62 - 141
1,1,2-Trichloro-1,2,2-Trifluoroeth	20	26	130	56 - 130
1,1,2-Trichloroethane	20	22	110	75 - 138
1,1-Dichloroethylene	20	23	115	75 - 136
1,1-Dichloropropene	20	22	110	77 - 137
1,1-dichloroethane	20	24	120	76 - 142
1,2,3-Trichlorobenzene	20	18	90	64 - 143
1,2,3-Trichloropropane	20	20	100	66 - 133
1,2,4-Trichlorobenzene	20	20	100	80 - 131
1,2,4-Trimethylbenzene	20	22	110	74 - 155
1,2-Dibromo-3-Chloropropane	20	21	105	37 - 139
1,2-Dibromoethane	20	21	105	72 - 135
1,2-Dichlorobenzene	20	21	105	85 - 128
1,2-Dichloroethane	20	23	115	74 - 138
1,2-Dichloropropane	20	20	100	83 - 124
1,3,5-Trimethylbenzene	20	21	105	80 - 145
1,3-Dichlorobenzene	20	20	100	84 - 130
1,3-Dichloropropane	20	21	105	77 - 129
1,4-Dichlorobenzene	20	20	100	82 - 128
2,2-Dichloropropane	20	29	145	32 - 171
2-Butanone (MEK)	20	21	105	38 - 179
2-Chlorotoluene	20	21	105	78 - 134
2-Hexanone	20	21	105	45 - 158
2-Propanone (acetone)	20	22	110	14 - 209
4-Chlorotoluene	20	19	95	75 - 144
4-Methyl-2-Pentanone(MIBK)	20	21	105	40 - 144
Acrylonitrile	20	21	105	52 - 154
Benzene	20	22	110	83 - 130
Bromobenzene	20	21	105	85 - 126
Bromochloromethane	20	24	120	69 - 137
Bromodichloromethane	20	22	110	70 - 143
Bromoform	20	22	110	51 - 136
Bromomethane	20	27	135	65 - 140
Carbon Disulfide	20	23	115	68 - 140
Carbon tetrachloride	20	25	125	70 - 144
Chlorobenzene	20	22	110	84 - 131
Chloroethane	20	23	115	70 - 134
Chloroform	20	24	120	76 - 141
Chloromethane	20	22	110	63 - 123
Dibromochloromethane	20	23	115	39 - 154
Dibromomethane	20	21	105	79 - 124
Dichlorodifluoromethane	20	24	120	37 - 117
Ethyl Ether	20	22	110	67 - 140
Ethylbenzene	20	22	110	81 - 133
Hexachlorobutadiene	20	21	105	68 - 146
Isopropylbenzene	20	22	110	78 - 137
M/P Xylene	40	43	108	68 - 155
Methyl-t-Butyl Ether	20	23	115	63 - 144
Methylene Chloride	20	23	115	75 - 140
N-Butylbenzene	20	22	110	69 - 147
N-Propylbenzene	20	21	105	76 - 138

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Naphthalene	20	19	95	53 - 155
Ortho Xylene	20	22	110	85 - 135
Para-Isopropyltoluene	20	23	115	77 - 141
Sec-Butylbenzene	20	22	110	80 - 141
Styrene	20	23	115	82 - 139
Tert-Butylbenzene	20	22	110	75 - 144
Tetrachloroethylene	20	19	95	32 - 173
Tetrahydrofuran	20	21	105	47 - 149
Toluene	20	23	115	85 - 134
Trans-1,2-Dichloroethylene	20	23	115	80 - 138
Trichloroethylene	20	21	105	76 - 135
Trichlorofluoromethane	20	25	125	60 - 149
Vinyl Acetate	20	25	125	38 - 187
Vinyl Chloride	20	23	115	66 - 133
c-1,3-dichloropropene	20	24	120	68 - 149
cis-1,2-Dichloroethylene	20	23	115	76 - 143
t-1,3-Dichloropropene	20	24	120	62 - 160

Comments: The percent recovery for bromomethane did not meet the acceptable QC criteria in LFB duplicate study.

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LABORATORY FORTIFIED DUPLICATE (LFB Dup) RECOVERY

COMPOUND	LFB Dup CONCENTRATION ug/L	LFB Dup RECOVERY %	RPD %	QC LIMITS RPD
1,1,1,2-Tetrachloroethane	21	105	5	50
1,1,1-Trichloroethane	24	120	4	50
1,1,2,2-Tetrachloroethane	20	100	5	50
1,1,2-Trichloro-1,2,2-Trifluoroetha	25	125	4	50
1,1,2-Trichloroethane	22	110	0	50
1,1-Dichloroethylene	23	115	0	52
1,1-Dichloropropene	21	105	5	50
1,1-dichloroethane	23	115	4	50
1,2,3-Trichlorobenzene	19	95	5	50
1,2,3-Trichloropropane	19	95	5	50
1,2,4-Trichlorobenzene	19	95	5	50
1,2,4-Trimethylbenzene	21	105	5	50
1,2-Dibromo-3-Chloropropane	21	105	0	50
1,2-Dibromoethane	20	100	5	50
1,2-Dichlorobenzene	20	100	5	50
1,2-Dichloroethane	23	115	0	50
1,2-Dichloropropane	20	100	0	50
1,3,5-Trimethylbenzene	21	105	0	50
1,3-Dichlorobenzene	20	100	0	50
1,3-Dichloropropane	21	105	0	50
1,4-Dichlorobenzene	20	100	0	50
2,2-Dichloropropane	28	140	4	50
2-Butanone (MEK)	22	110	5	50
2-Chlorotoluene	21	105	0	50
2-Hexanone	21	105	0	50
2-Propanone (acetone)	23	115	4	50
4-Chlorotoluene	19	95	0	50
4-Methyl-2-Pentanone(MIBK)	20	100	5	50
Acrylonitrile	22	110	5	50
Benzene	22	110	0	50
Bromobenzene	21	105	0	50
Bromochloromethane	24	120	0	50
Bromodichloromethane	22	110	0	50
Bromoform	21	105	5	50
Bromomethane	29	145	7	50
Carbon Disulfide	23	115	0	50
Carbon tetrachloride	24	120	4	50
Chlorobenzene	23	115	4	34
Chloroethane	24	120	4	50
Chloroform	24	120	0	50
Chloromethane	23	115	4	50
Dibromochloromethane	22	110	4	50
Dibromomethane	20	100	5	50
Dichlorodifluoromethane	24	120	0	50
Ethyl Ether	22	110	0	50
Ethylbenzene	21	105	5	50
Hexachlorobutadiene	22	110	5	50
Isopropylbenzene	22	110	0	50
M/P Xylene	42	105	2	50
Methyl-t-Butyl Ether	23	115	0	50
Methylene Chloride	23	115	0	50
N-Butylbenzene	22	110	0	50
N-Propylbenzene	21	105	0	50
Naphthalene	21	105	10	50
Ortho Xylene	22	110	0	50
Para-Isopropyltoluene	22	110	4	50

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Sec-Butylbenzene	22	110	0	50
Styrene	22	110	4	50
Tert-Butylbenzene	22	110	0	50
Tetrachloroethylene	19	95	0	50
Tetrahydrofuran	22	110	5	50
Toluene	22	110	4	50
Trans-1,2-Dichloroethylene	22	110	4	50
Trichloroethylene	20	100	5	27
Trichlorofluoromethane	25	125	0	50
Vinyl Acetate	25	125	0	50
Vinyl Chloride	25	125	8	50
c-1,3-dichloropropene	24	120	0	50
cis-1,2-Dichloroethylene	23	115	0	50
t-1,3-Dichloropropene	24	120	0	50

Samples in Batch: AB22674; AB22675, AB22676, AB22677



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

October 11, 2011

Karen Lumino - Mail Code OSRR07-4
US EPA New England R1

Project Number: 11100015
Project: Commerce Street Plume - Williston, VT
Analysis: VOC Analysis of Water by Headspace
Analyst: Dan Curran *DC 10/11/11*

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample analysis was done following the EPA Region I SOP, EIA-VOCSCREEN0.

Aqueous samples were collected in 40 mL vials. The samples were analyzed using a Shimadzu GC 2014 gas chromatograph equipped with a 30 meter, 0.53 mm id. RTX-624 column and detected using electron capture and photoionization detectors. Concentrations of volatile organics were calculated using the external standard technique.

Date Samples Received by the Laboratory: 10/06/2011

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report contains multiple sections and each section is numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

Daniel N. Boudreau 10/13/11
Daniel N. Boudreau
Chemistry Team Leader

- Qualifiers:** RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

Conversion of ppb/v to ug/m³ = ppb/v*(mw/24.45) 24.45 is based on T=25c and P = 760 mm Hg

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Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00492
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22659
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

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Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00493
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22660
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

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Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00494
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22661
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	1.3	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

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Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00495
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22662
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	2.6	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

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Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00497
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22664
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	1.5	1.0	
	Trichloroethylene	640	1.0	
	cis-1,2-Dichloroethylene	19	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

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Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00496
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22663
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	320	1.0	
	cis-1,2-Dichloroethylene	6.7	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

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Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00498
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22665
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	13	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

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Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00499
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22666
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

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Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00501
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22668
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

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Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00500
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22667
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

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Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00502
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22669
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00503
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22670
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00504
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22671
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	J
	1,1-Dichloroethylene	ND	1.0	J
	Benzene	ND	1.0	J
	Chlorobenzene	ND	1.0	J
	Ethylbenzene	ND	1.0	J
	Tetrachloroethylene	ND	1.0	J
	Toluene	ND	0.50	J
	Trans-1,2-Dichloroethylene	ND	1.0	J
	Trichloroethylene	ND	1.0	J
	cis-1,2-Dichloroethylene	ND	0.50	J
	m/p-Xylene	ND	1.5	J
	o-Xylene	ND	1.0	J

Comments: Sample was received with a pH >2. All results are approximated.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00505
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22672
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	J
	1,1-Dichloroethylene	ND	1.0	J
	Benzene	ND	1.0	J
	Chlorobenzene	ND	1.0	J
	Ethylbenzene	ND	1.0	J
	Tetrachloroethylene	ND	1.0	J
	Toluene	ND	0.50	J
	Trans-1,2-Dichloroethylene	ND	1.0	J
	Trichloroethylene	ND	1.0	J
	cis-1,2-Dichloroethylene	ND	0.50	J
	m/p-Xylene	ND	1.5	J
	o-Xylene	ND	1.0	J

Comments: Sample was received with a pH >2. All results are approximated.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Commerce Street Plume - Williston, VT

VOC Analysis of Water by Headspace

Cannister ID: EP00506
Date of Collection: 10/5/2011
Date of Analysis: 10/06/2011
Sample Volume: 10 mL

Lab Sample ID: AB22673
Matrix: GW
Dilution Factor: 1

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
	1,1,1-Trichloroethane	ND	1.0	
	1,1-Dichloroethylene	ND	1.0	
	Benzene	ND	1.0	
	Chlorobenzene	ND	1.0	
	Ethylbenzene	ND	1.0	
	Tetrachloroethylene	ND	1.0	
	Toluene	ND	0.50	
	Trans-1,2-Dichloroethylene	ND	1.0	
	Trichloroethylene	ND	1.0	
	cis-1,2-Dichloroethylene	ND	0.50	
	m/p-Xylene	ND	1.5	
	o-Xylene	ND	1.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Sample ID: AB22666

PARAMETER	SAMPLE RESULT ug/L	SAMPLE DUPLICATE RESULT ug/L	PRECISION RPD %	QC LIMITS
1,1,1-Trichloroethane	ND	ND	ND	50
1,1-Dichloroethylene	ND	ND	ND	50
Benzene	ND	ND	ND	50
Chlorobenzene	ND	ND	ND	50
Ethylbenzene	ND	ND	ND	50
Tetrachloroethylene	ND	ND	ND	50
Toluene	ND	ND	ND	50
Trans-1,2-Dichloroethylene	ND	ND	ND	50
Trichloroethylene	ND	ND	ND	50
cis-1,2-Dichloroethylene	ND	ND	ND	50
m/p-Xylene	ND	ND	ND	50
o-Xylene	ND	ND	ND	50

**A
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P
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D
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X

C**

Final Data Package for Waterloo Profiling and MobiLab Services

WILLISTON, VERMONT

Project ID 112353-R

September 14, 2011



This project was performed by Stone Environmental, Inc. for Nobis Engineering, Inc.

Prepared for:

Nobis Engineering, Inc.
Jason Fopiano
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E-Mail / sei@stone-env.com

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1. PLOTS OF PHYSIOCHEMICAL AND (I_k) DATA

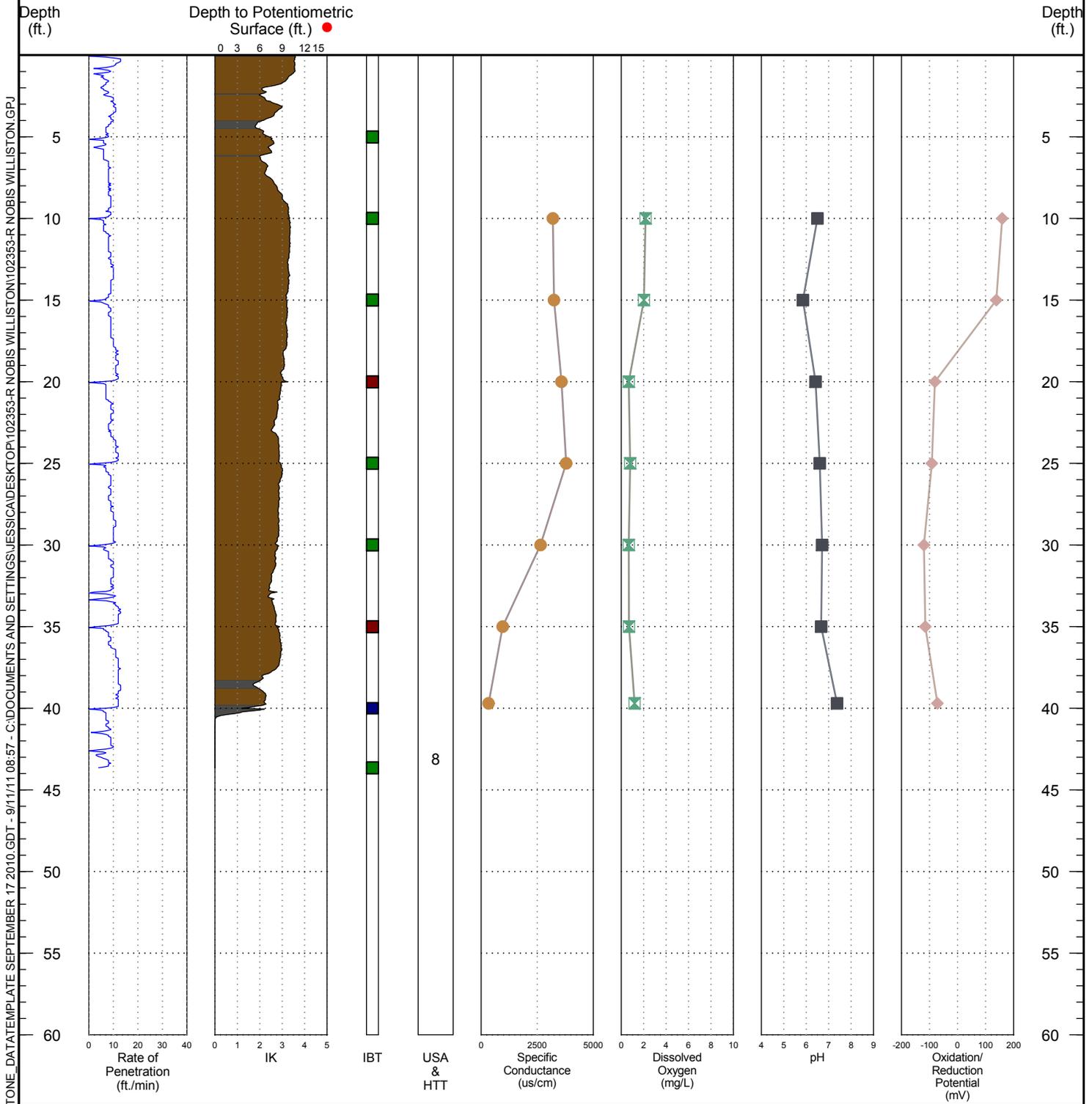
BORING NAME WP-01

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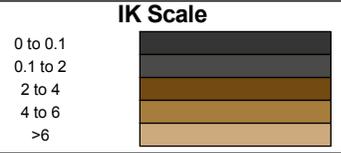


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 8/31/2011
 Sampler(s) LJR
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS - STONE_DAYTEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 08:57 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



Legend

IBT = IK Behavior Type

- = IK increase when hammer stops
- = IK decrease when hammer stops
- = No change when hammer stops

USA = Unsuccessful Sample Attempt

- * = Could not produce water
- ▲ = Yield deemed too slow
- = Equipment issue

HTT = Hole Termination Type

- 7 = Broken downhole equipment
- 8 = Reached Target Depth
- 9 = ROP dropped below threshold
- 10 = Sudden Hard Refusal

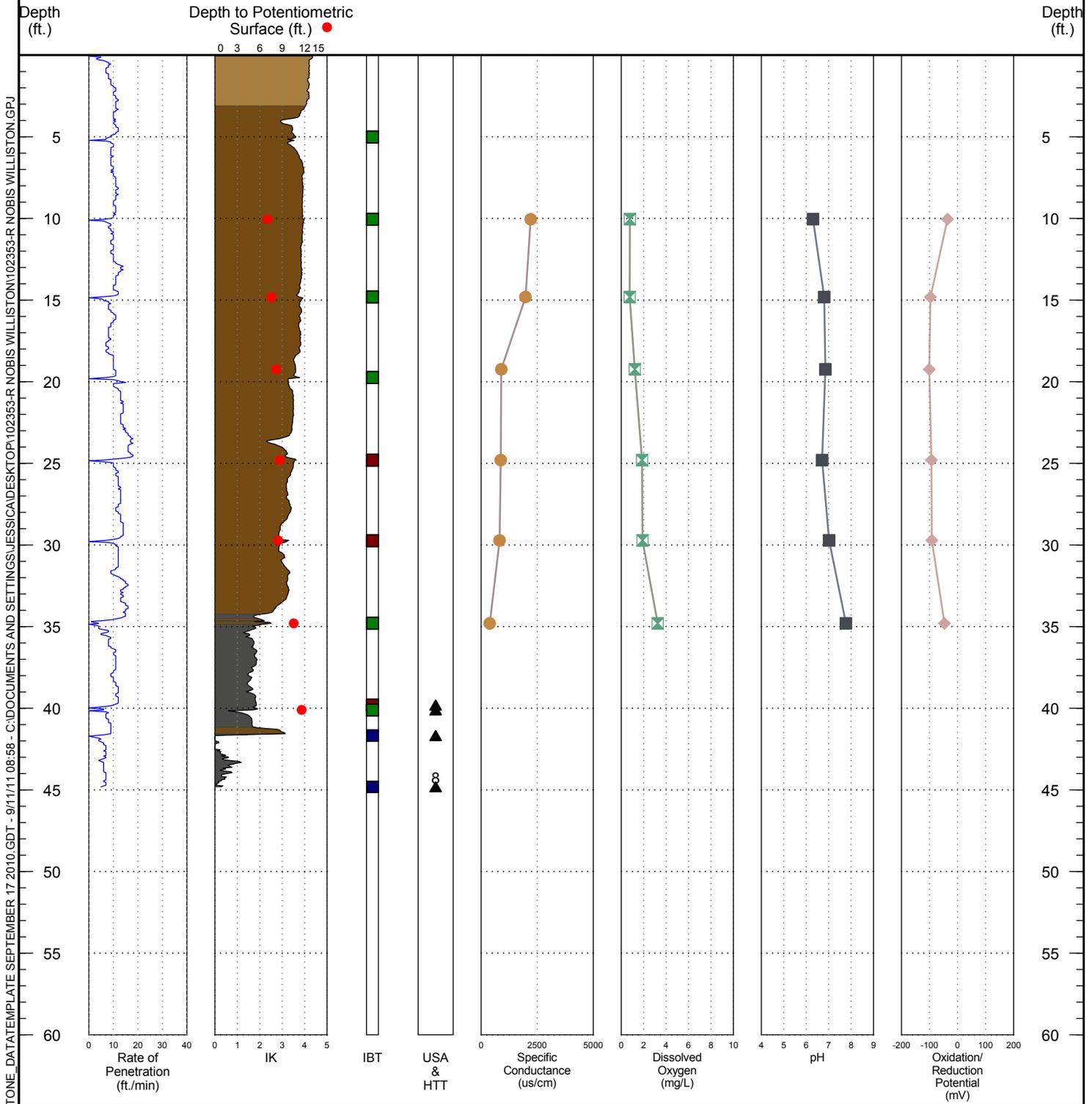
BORING NAME WP-02

Total Depth 44.81 ft.

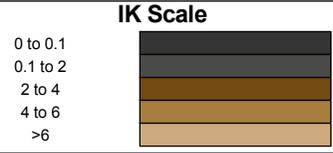


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 8/31/2011
 Sampler(s) DC
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



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IBT = IK Behavior Type

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- = IK decrease when hammer stops
- = No change when hammer stops

Legend

USA = Unsuccessful Sample Attempt

- * = Could not produce water
- ▲ = Yield deemed too slow
- = Equipment issue

HTT = Hole Termination Type

- 7 = Broken downhole equipment
- 8 = Reached Target Depth
- 9 = ROP dropped below threshold
- 10 = Sudden Hard Refusal

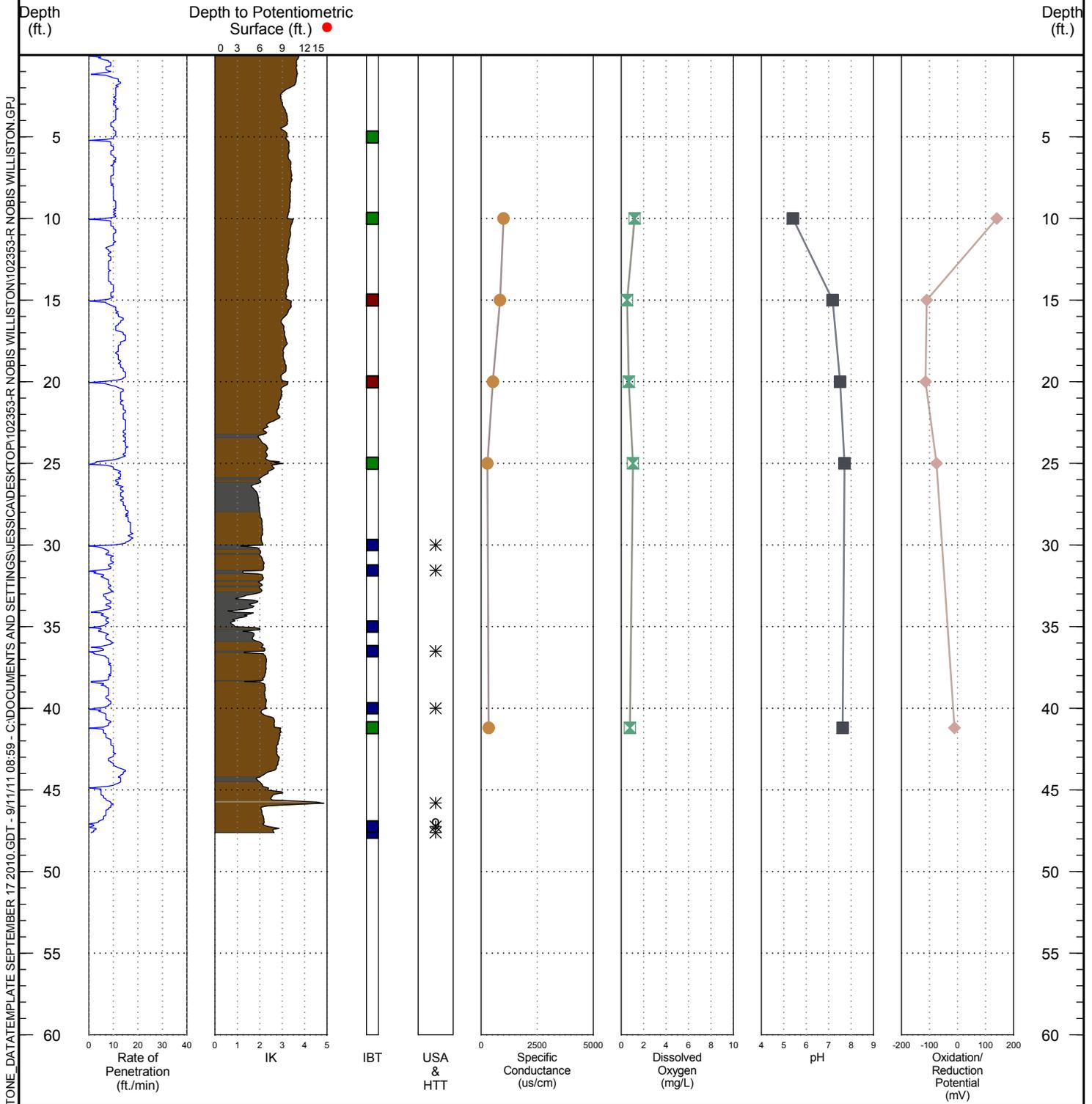
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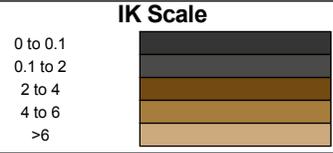


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 8/31/2011
 Sampler(s) LJR
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS - STONE_DAYTEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 08:59 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



Legend

<p>IBT = IK Behavior Type</p> <ul style="list-style-type: none"> ■ = IK increase when hammer stops ■ = IK decrease when hammer stops ■ = No change when hammer stops 	<p>USA = Unsuccessful Sample Attempt</p> <ul style="list-style-type: none"> * = Could not produce water ▲ = Yield deemed too slow ■ = Equipment issue 	<p>HTT = Hole Termination Type</p> <ul style="list-style-type: none"> 7 = Broken downhole equipment 8 = Reached Target Depth 9 = ROP dropped below threshold 10 = Sudden Hard Refusal
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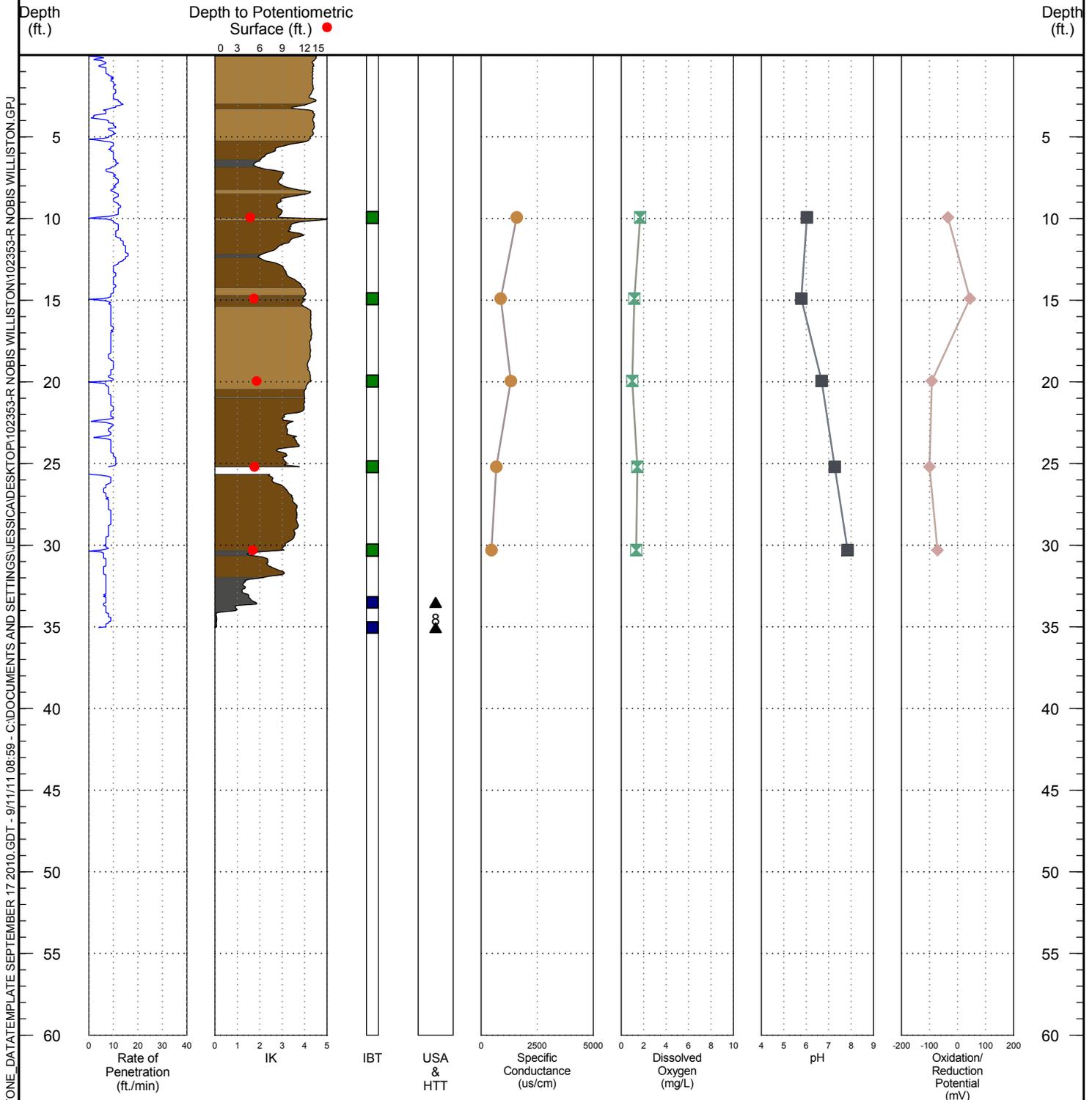
BORING NAME WP-04

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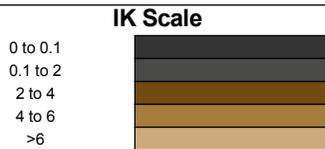


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 9/1/2011
 Sampler(s) DC
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS - STONE_DAYTEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 08:59 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



- Legend**
- IBT = IK Behavior Type**
- = IK increase when hammer stops
 - = IK decrease when hammer stops
 - = No change when hammer stops
- USA = Unsuccessful Sample Attempt**
- * = Could not produce water
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 - = Equipment issue
- HTT = Hole Termination Type**
- 7 = Broken downhole equipment
 - 8 = Reached Target Depth
 - 9 = ROP dropped below threshold
 - 10 = Sudden Hard Refusal

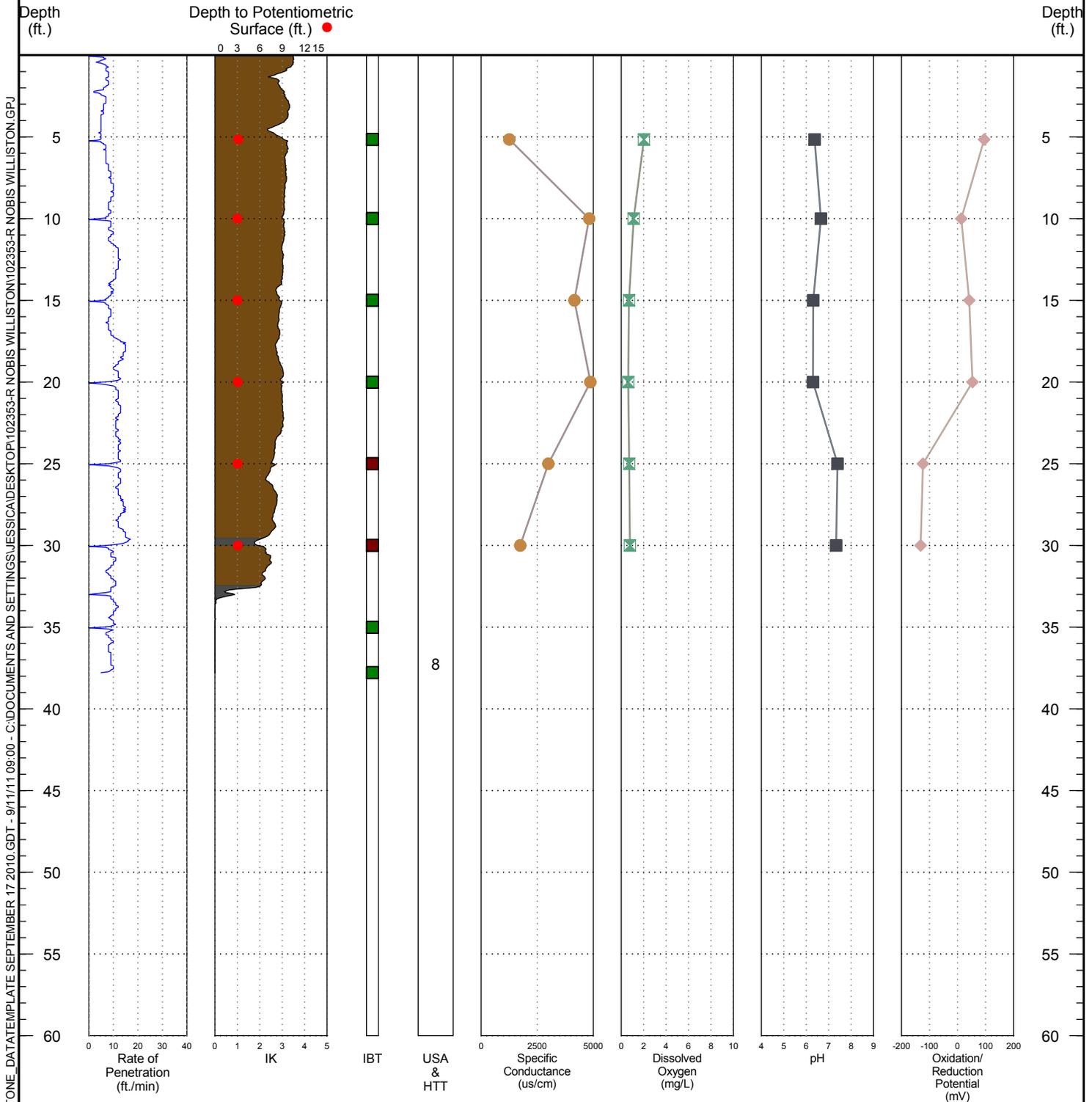
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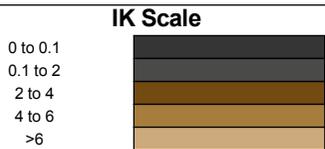


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 9/1/2011
 Sampler(s) LJR
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS - STONE_DAYTEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 09:00 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



- Legend**
- | | | |
|--|---|--|
| <p>IBT = IK Behavior Type</p> <ul style="list-style-type: none"> ■ = IK increase when hammer stops ■ = IK decrease when hammer stops ■ = No change when hammer stops | <p>USA = Unsuccessful Sample Attempt</p> <ul style="list-style-type: none"> * = Could not produce water ▲ = Yield deemed too slow ■ = Equipment issue | <p>HTT = Hole Termination Type</p> <ul style="list-style-type: none"> 7 = Broken downhole equipment 8 = Reached Target Depth 9 = ROP dropped below threshold 10 = Sudden Hard Refusal |
|--|---|--|

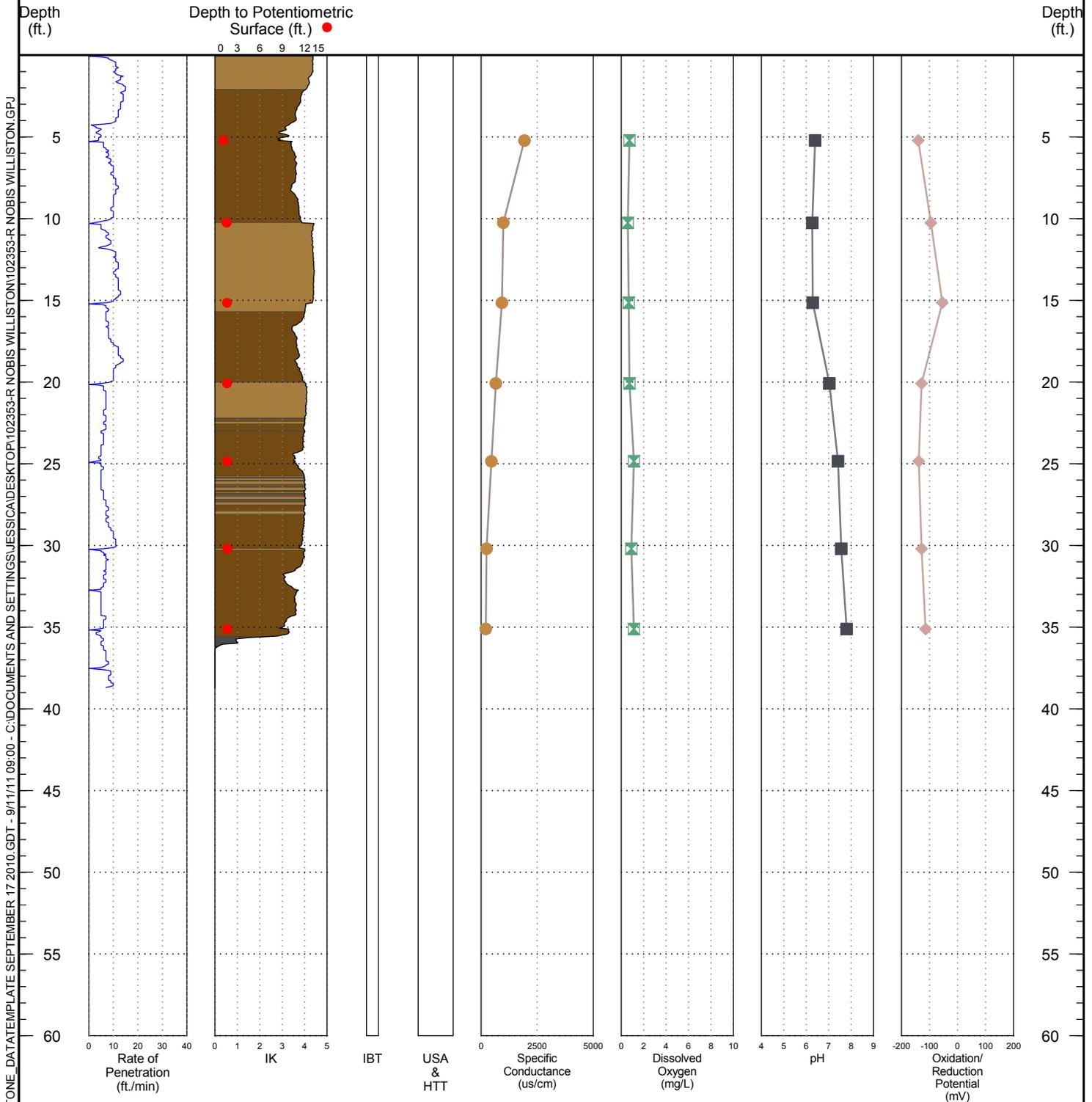
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Total Depth 38.68 ft.

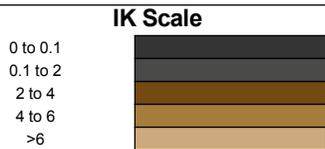


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 9/1/2011
 Sampler(s) DC
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS - STONE_DAYTEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 09:00 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



IBT = IK Behavior Type

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- = No change when hammer stops

Legend

USA = Unsuccessful Sample Attempt	* = Could not produce water	HTT = Hole Termination Type
▲ = Yield deemed too slow	■ = Equipment issue	7 = Broken downhole equipment
		8 = Reached Target Depth
		9 = ROP dropped below threshold
		10 = Sudden Hard Refusal

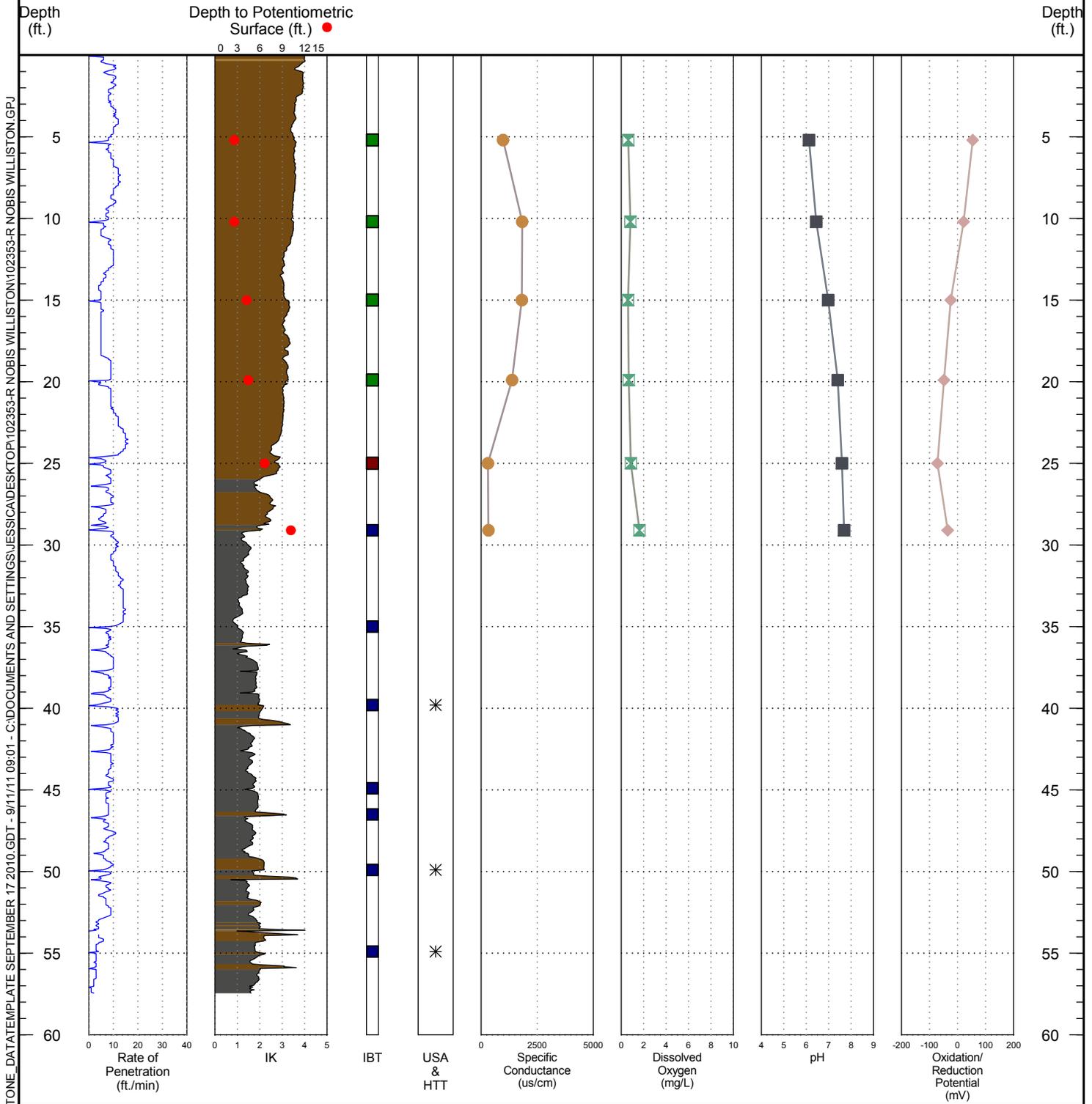
BORING NAME WP-07

Total Depth 57.34 ft.

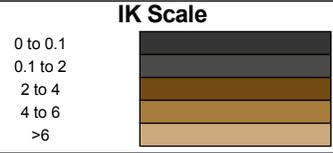


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 9/1/2011
 Sampler(s) LJR
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS - STONE DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 09:01 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



Legend

IBT = IK Behavior Type ■ = IK increase when hammer stops ■ = IK decrease when hammer stops ■ = No change when hammer stops	USA = Unsuccessful Sample Attempt * = Could not produce water ▲ = Yield deemed too slow ■ = Equipment issue	HTT = Hole Termination Type 7 = Broken downhole equipment 8 = Reached Target Depth 9 = ROP dropped below threshold 10 = Sudden Hard Refusal
--	---	--

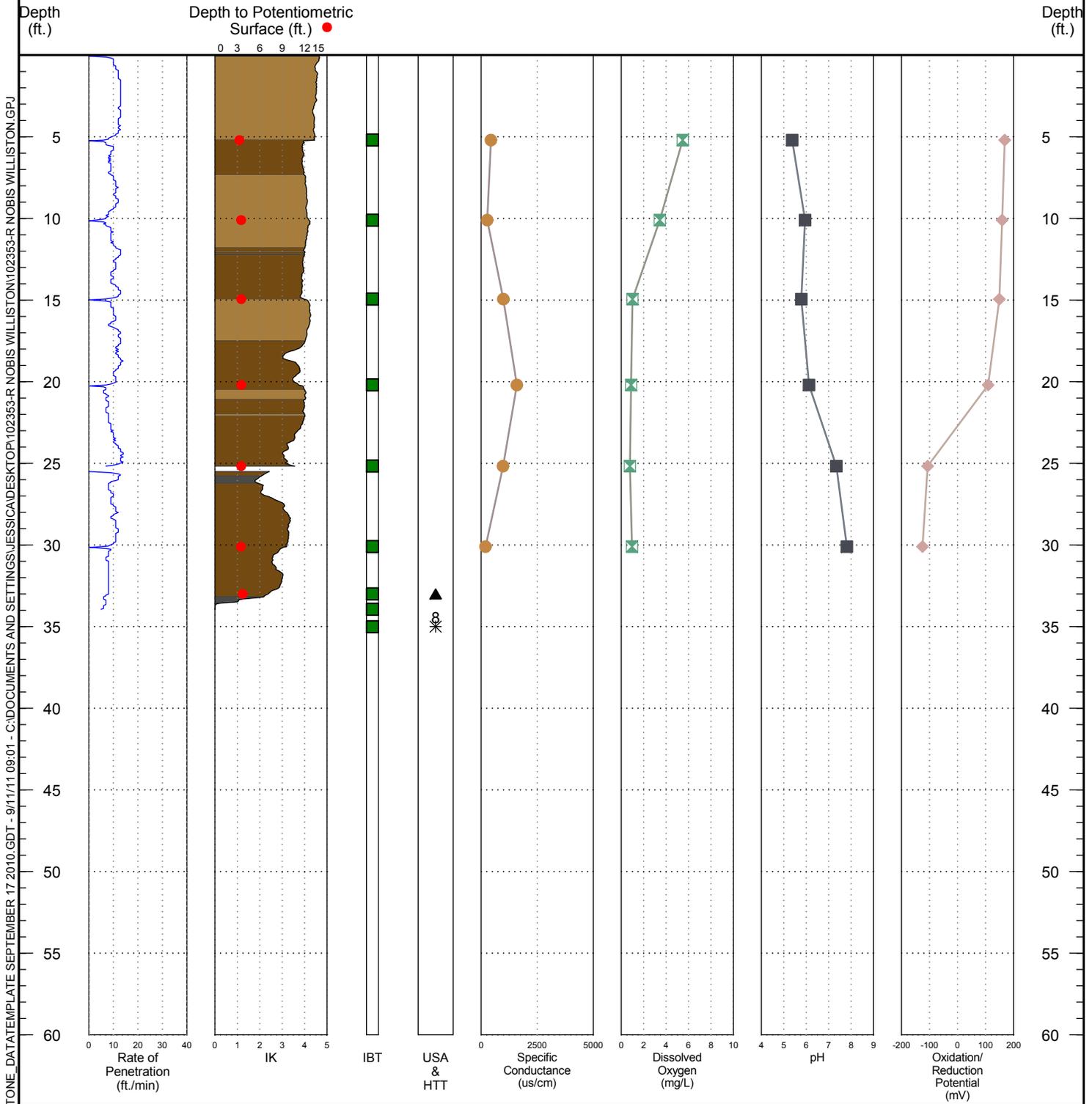
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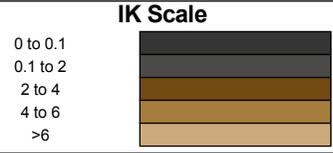


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 9/1/2011
 Sampler(s) DC
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS - STONE_DAYTEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 09:01 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



IBT = IK Behavior Type

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Legend

- USA = Unsuccessful Sample Attempt
- HTT = Hole Termination Type
- * = Could not produce water
- ▲ = Yield deemed too slow
- = Equipment issue

- 7 = Broken downhole equipment
- 8 = Reached Target Depth
- 9 = ROP dropped below threshold
- 10 = Sudden Hard Refusal

2. PHYSIOCHEMICAL DAILY LOGS

3. PLOTS OF VOC AND (I_K) DATA

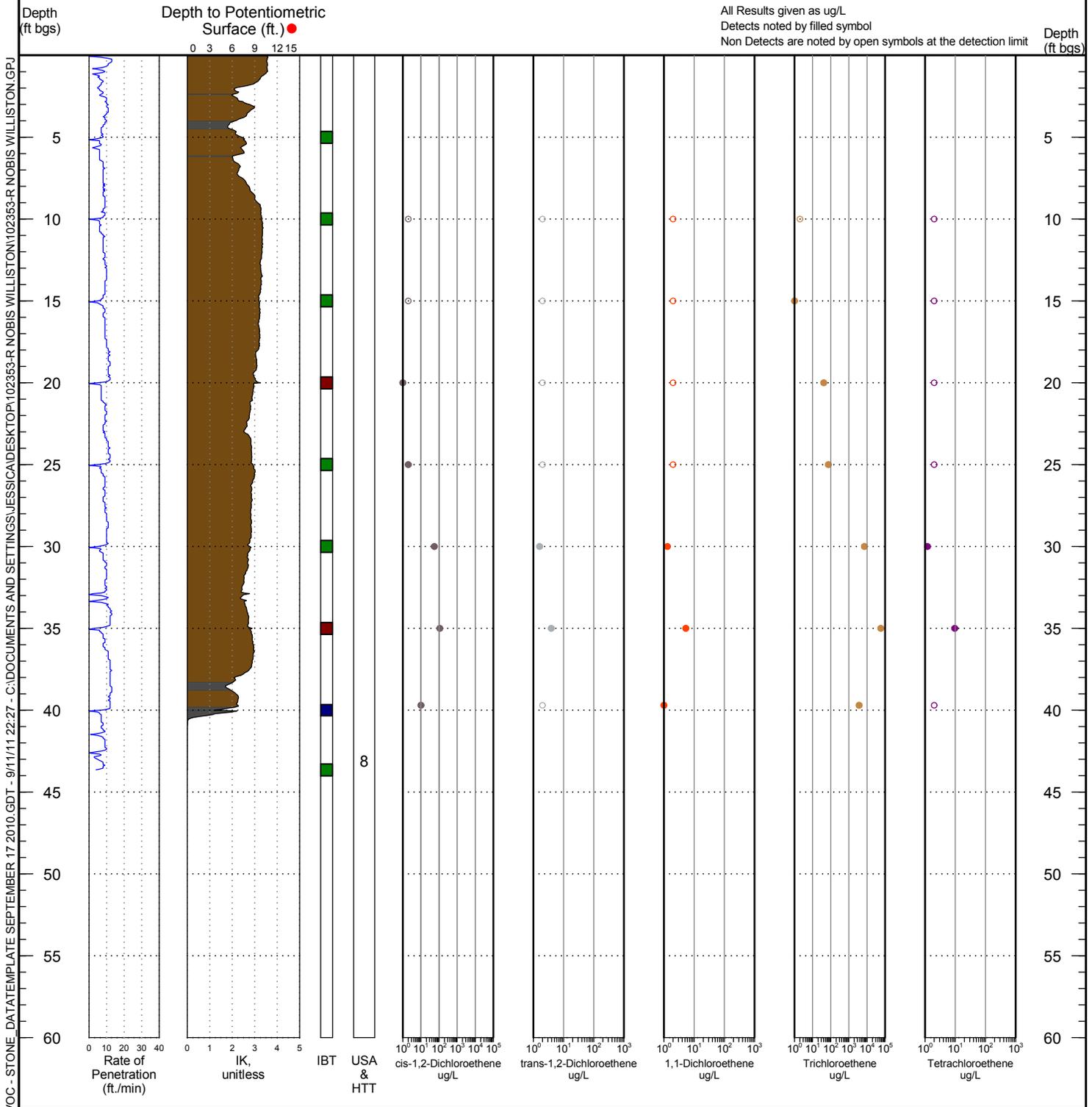
BORING NAME WP-01

Total Depth 43.65 ft.

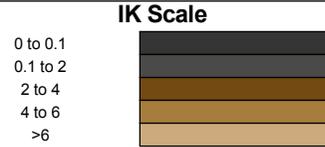


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 8/31/2011
 Sampler(s) LJR
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS & VOC - STONE DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 22:27 - C:\DOCUMENTS AND SETTINGS\JESSICAD\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



- Legend**
- IBT = IK Behavior Type**
- = IK increase when hammer stops
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- USA = Unsuccessful Sample Attempt**
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 - = Equipment issue
- HTT = Hole Termination Type**
- 7 = Broken downhole equipment
 - 8 = Reached Target Depth
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 - 10 = Sudden Hard Refusal

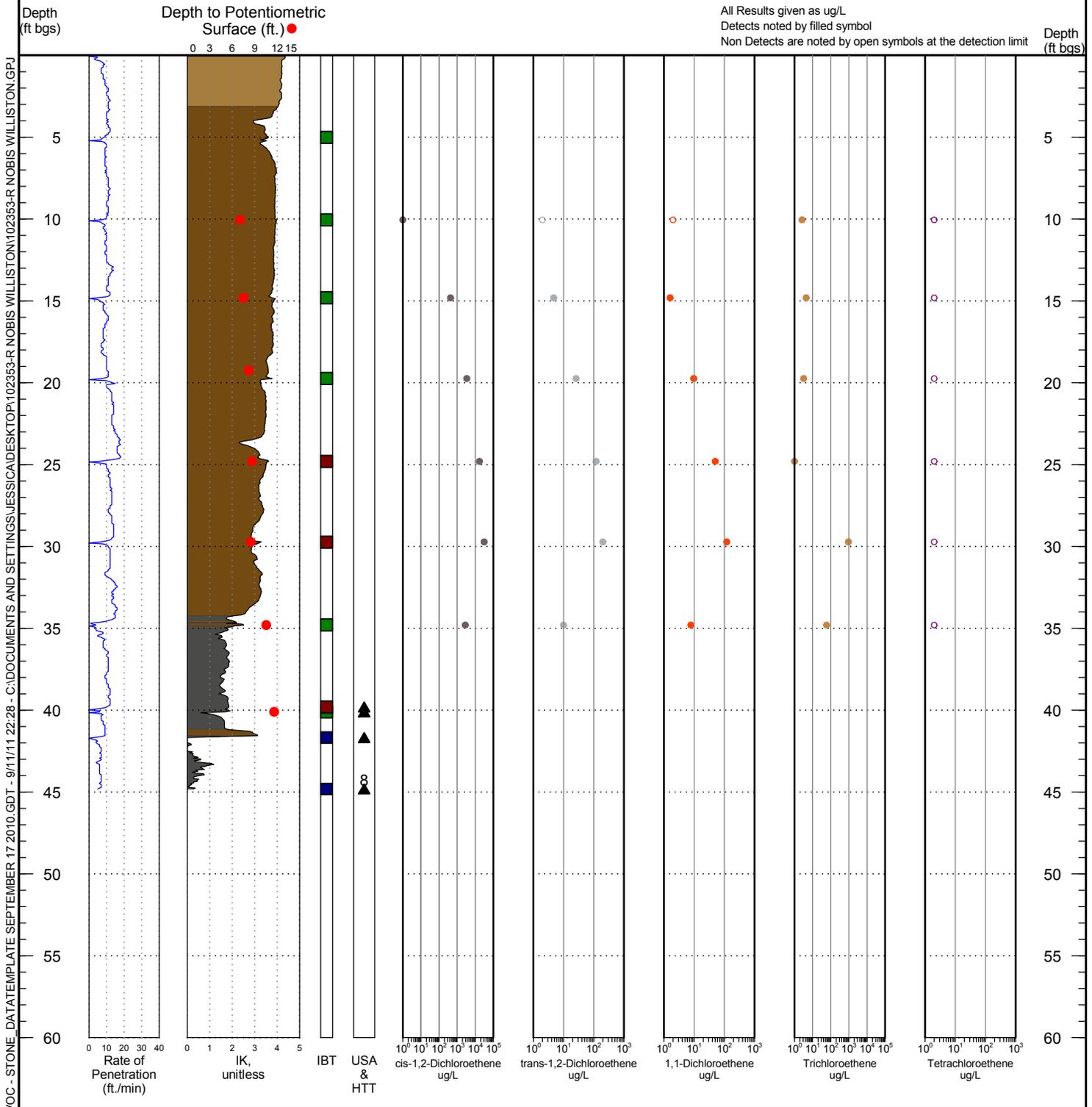
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Total Depth 44.81 ft.

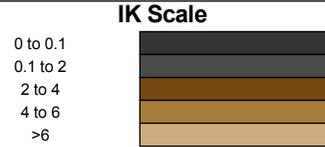


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 8/31/2011
 Sampler(s) DC
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS & VOC - STONE DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 22:28 - C:\DOCUMENTS AND SETTINGS\JESSICAD\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



Legend

IBT = IK Behavior Type

- = IK increase when hammer stops
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- = Equipment issue

HTT = Hole Termination Type

- 7 = Broken downhole equipment
- 8 = Reached Target Depth
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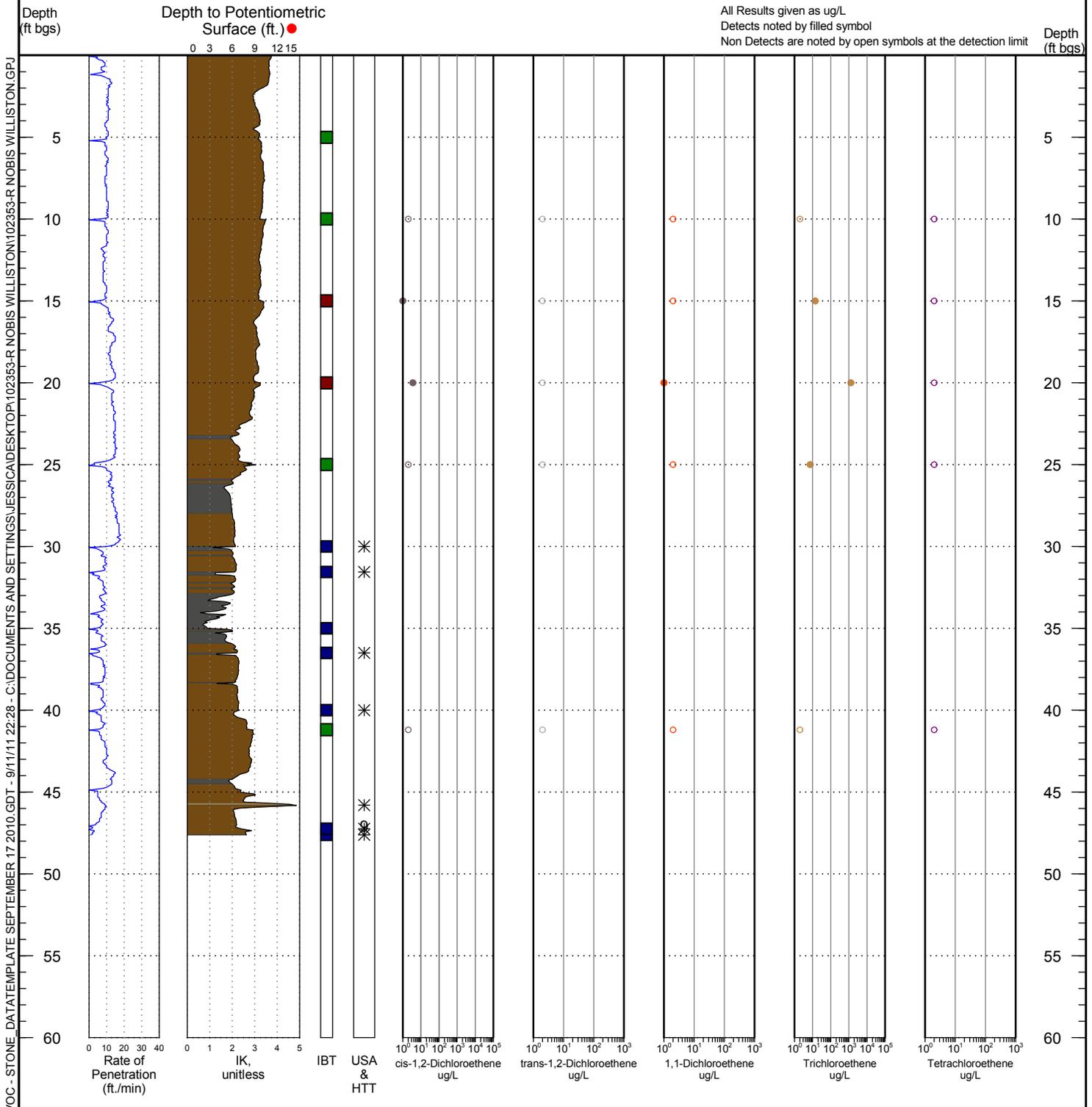
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Total Depth 45.8 ft.

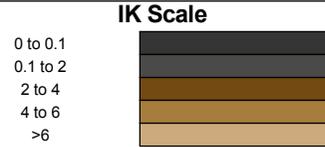


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 8/31/2011
 Sampler(s) LJR
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS & VOC - STONE DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 22:28 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



- Legend**
- IBT = IK Behavior Type**
- Red square = IK increase when hammer stops
 - Blue square = IK decrease when hammer stops
 - Green square = No change when hammer stops
- USA = Unsuccessful Sample Attempt**
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- 7 = Broken downhole equipment
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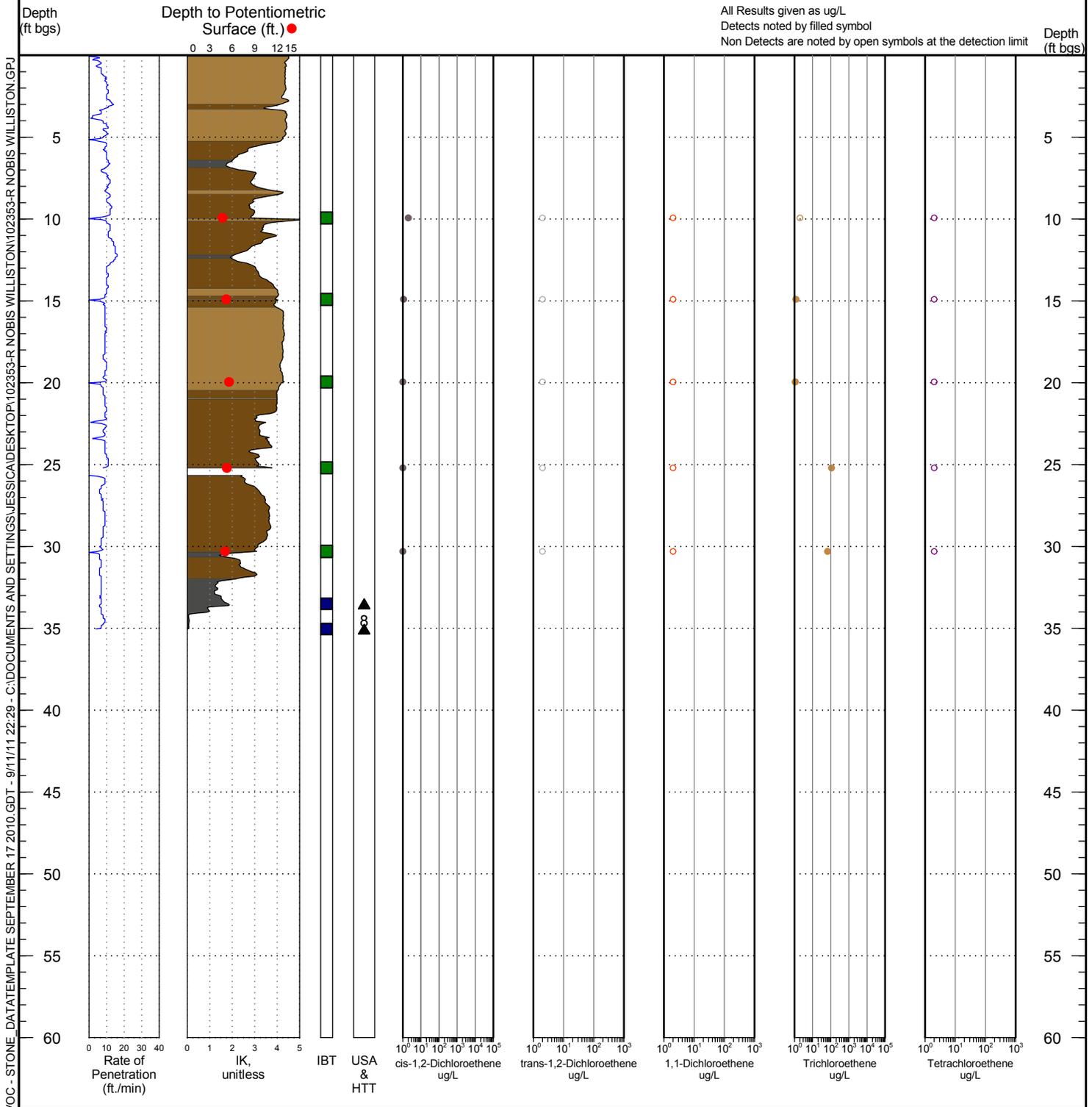
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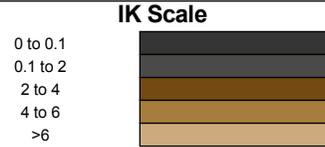


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 9/1/2011
 Sampler(s) DC
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS & VOC - STONE DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 22:29 - C:\DOCUMENTS AND SETTINGS\JESSICAD\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



- Legend**
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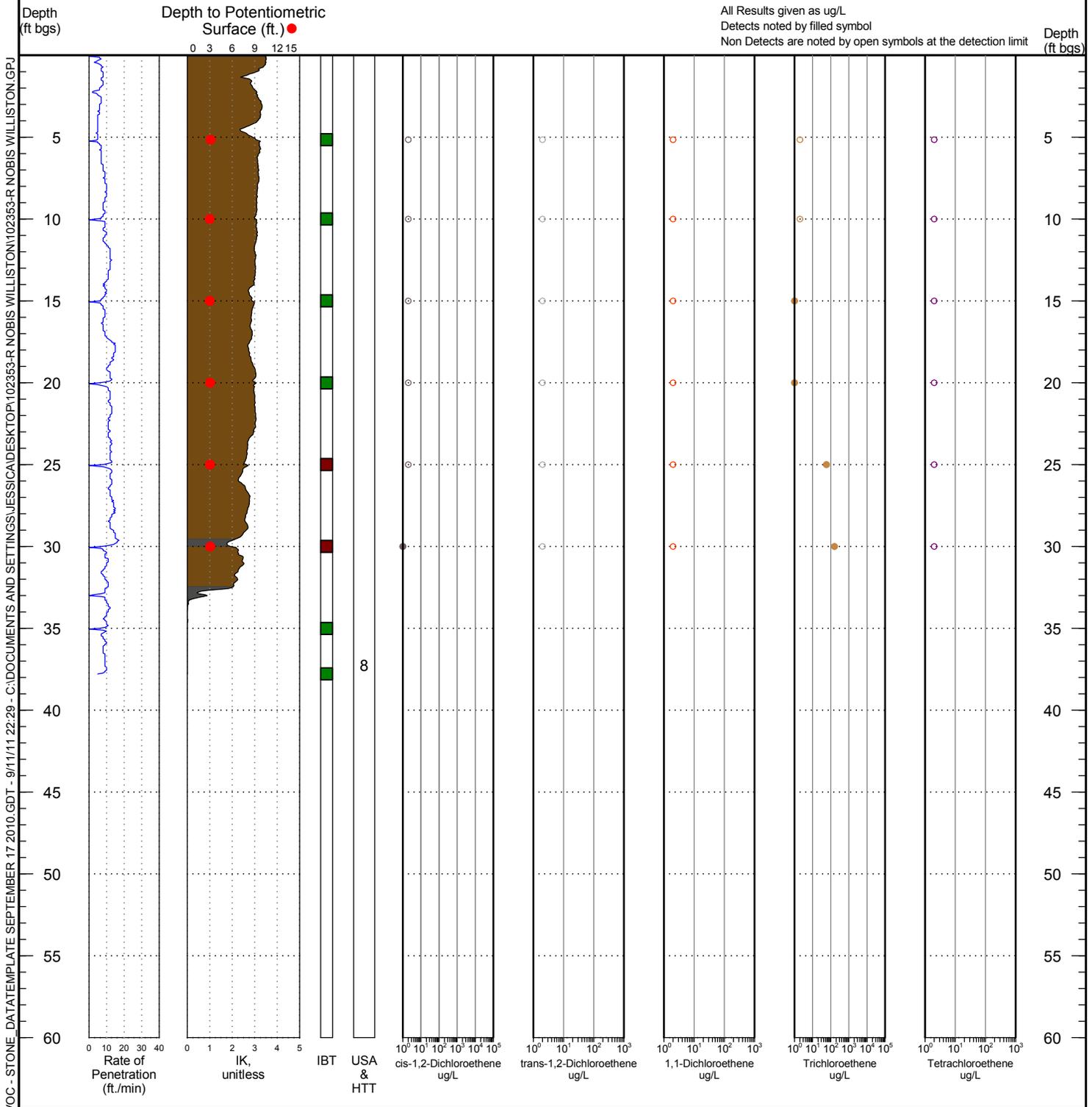
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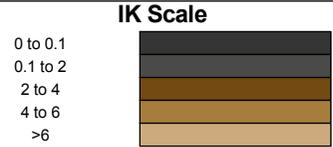


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 9/1/2011
 Sampler(s) LJR
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS & VOC - STONE DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 22:29 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



IBT = IK Behavior Type

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USA = Unsuccessful Sample Attempt

- * = Could not produce water
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- 9 = ROP dropped below threshold
- 10 = Sudden Hard Refusal

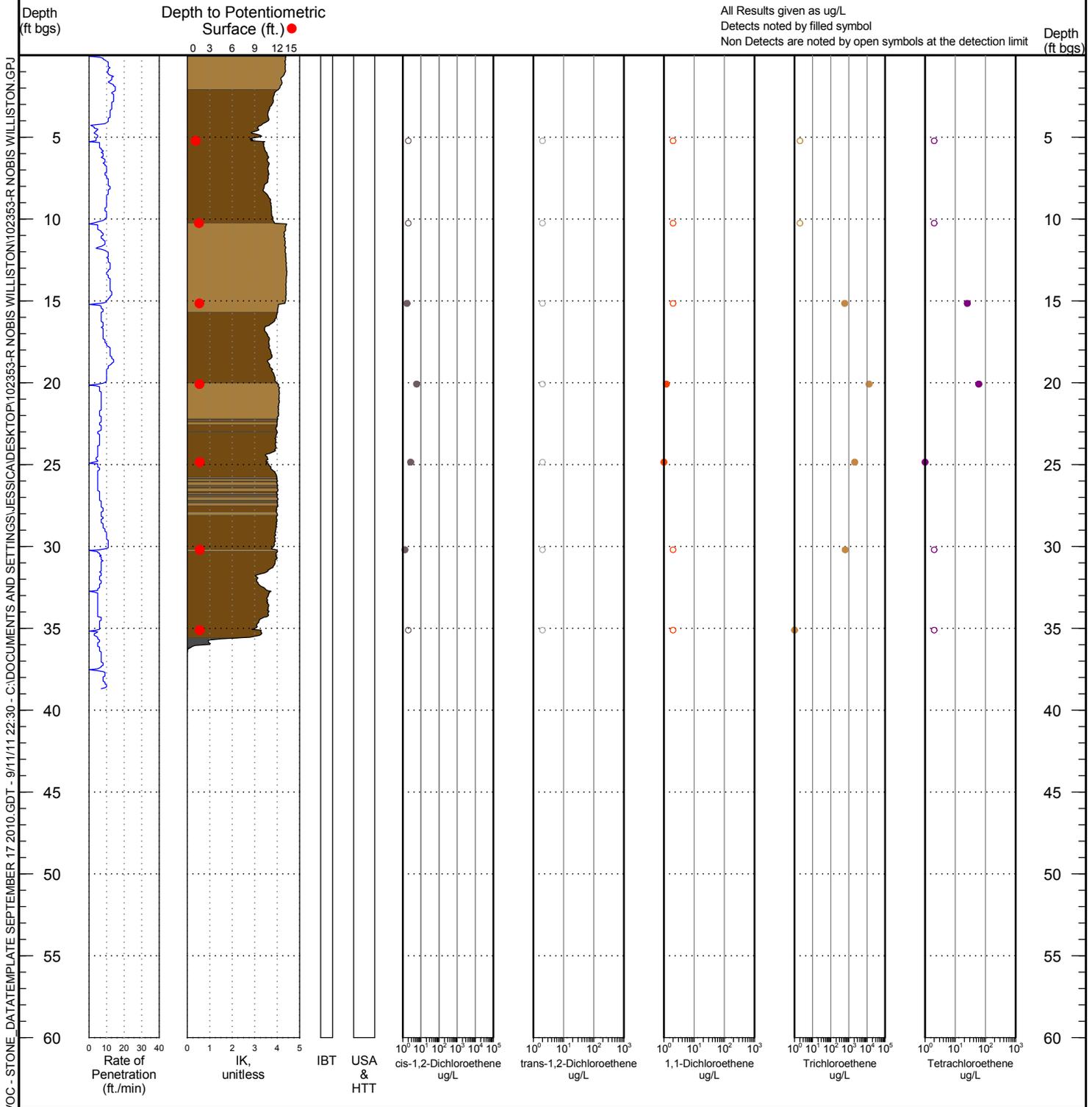
BORING NAME WP-06

Total Depth 38.68 ft.

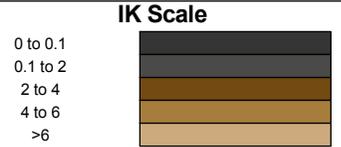


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 9/1/2011
 Sampler(s) DC
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS & VOC - STONE DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 22:30 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



- Legend**
- IBT = IK Behavior Type**
 - = IK increase when hammer stops
 - = IK decrease when hammer stops
 - = No change when hammer stops
 - USA = Unsuccessful Sample Attempt**
 - * = Could not produce water
 - ▲ = Yield deemed too slow
 - = Equipment issue
 - HTT = Hole Termination Type**
 - 7 = Broken downhole equipment
 - 8 = Reached Target Depth
 - 9 = ROP dropped below threshold
 - 10 = Sudden Hard Refusal

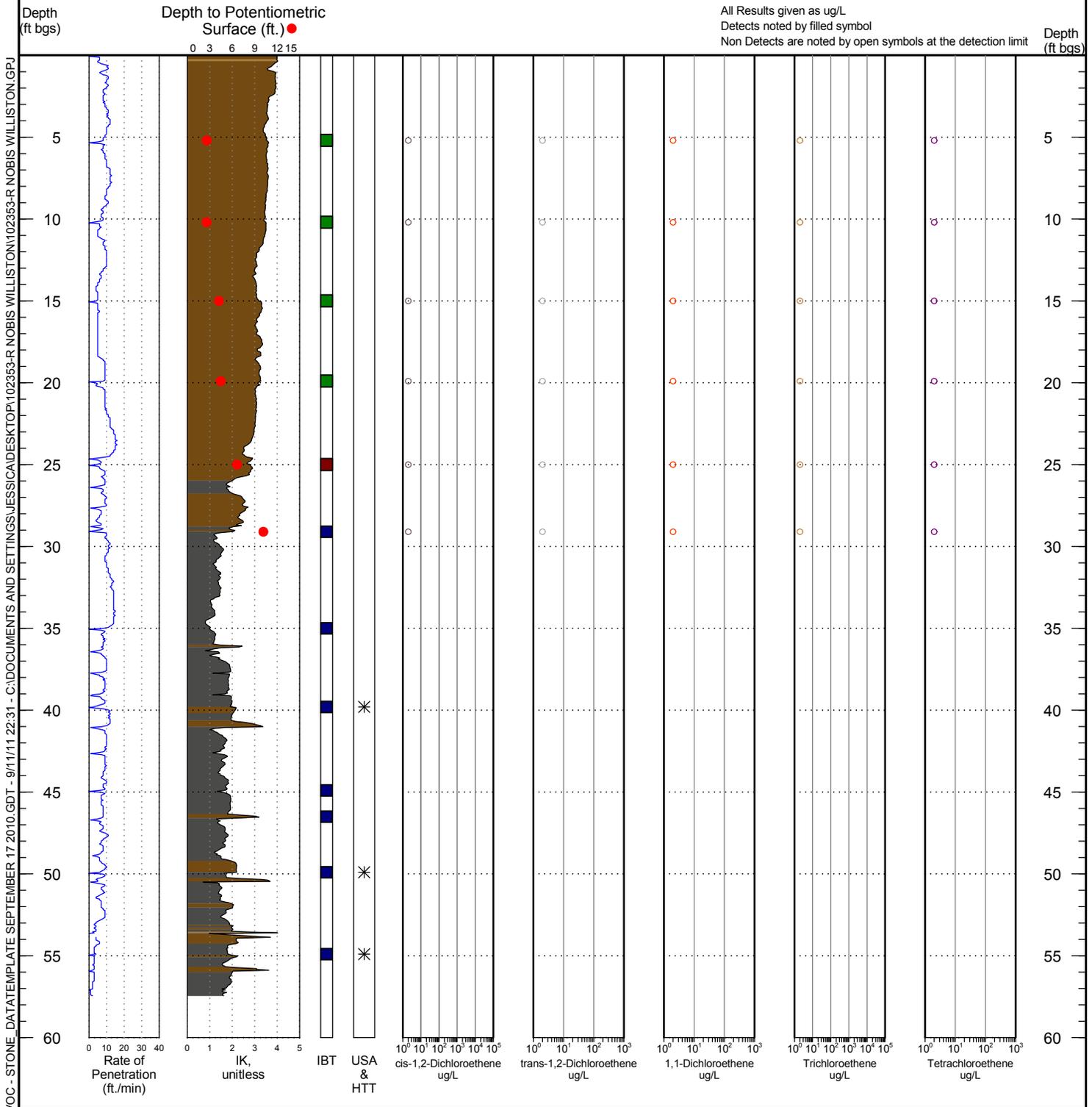
BORING NAME WP-07

Total Depth 57.34 ft.

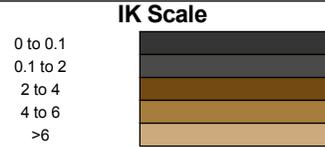


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 9/1/2011
 Sampler(s) LJR
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS & VOC - STONE DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 22:31 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



Legend

IBT = IK Behavior Type

- = IK increase when hammer stops
- = IK decrease when hammer stops
- = No change when hammer stops

USA = Unsuccessful Sample Attempt

- * = Could not produce water
- ▲ = Yield deemed too slow
- = Equipment issue

HTT = Hole Termination Type

- 7 = Broken downhole equipment
- 8 = Reached Target Depth
- 9 = ROP dropped below threshold
- 10 = Sudden Hard Refusal

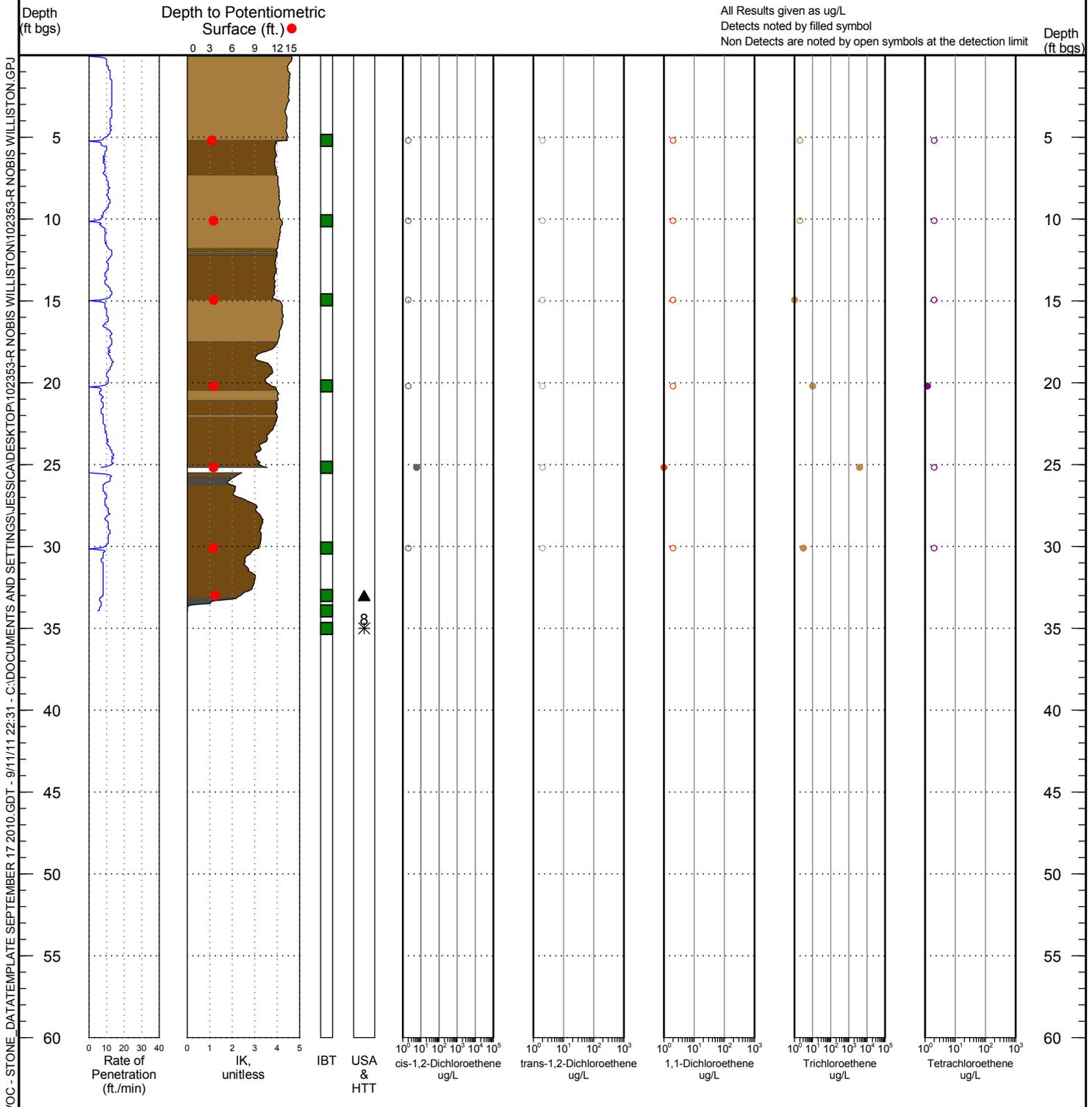
BORING NAME WP-08

Total Depth 33.94 ft.

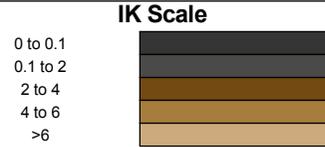


Project Name Nobis Williston, VT
 Client Nobis
 Stone Project Number 102353-R
 Project Location Williston, VT

Date Completed 9/1/2011
 Sampler(s) DC
 Drilling Contractor Platform
 Gas Drive or Peri Pump Peri Pump



WATERLOO APS & VOC - STONE DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 22:31 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ



- Legend**
- IBT = IK Behavior Type**
- = IK increase when hammer stops
 - = IK decrease when hammer stops
 - = No change when hammer stops
- USA = Unsuccessful Sample Attempt**
- * = Could not produce water
 - ▲ = Yield deemed too slow
 - = Equipment issue
- HTT = Hole Termination Type**
- 7 = Broken downhole equipment
 - 8 = Reached Target Depth
 - 9 = ROP dropped below threshold
 - 10 = Sudden Hard Refusal

4. LABORATORY REPORT

Final Data Report for Laboratory Services

PREPARED FOR, NOBIS ENGINEERING, INC.

PROJECT ID: NOBIS, WILLISTON, VT

Stone Project ID 102353-R

REPORT DATE: September 14, 2011



Prepared for:
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QA / QC SUMMARIES.....	2



DEFENSIBLE REAL -
TIME ANALYTICS

STONE ENVIRONMENTAL, INC. LABORATORY

NARRATIVE

September 13, 2011

This data package presents the analytical results for the analyses performed by Stone Environmental, Inc. Laboratory (Stone Laboratory) on site at Williston, VT between August 30, 2011 and September 2, 2011. The samples were collected by Stone Environmental Inc. and Platform Drilling between August 30, 2011 and September 2, 2011.

The samples were analyzed by EPA SW846 Method 8260 (gas chromatography/mass spectrometry (GC/MS)) with solid phase micro-extraction technique for volatile organic compounds (VOCs). The analytical results associated with the samples presented in this test report were generated under a quality system that adheres to requirements specified in the National Environmental Laboratory Accreditation Conference (NELAC) standards. All QA/QC results associated with these data with one exception were found to be within the tolerances set forth in the associated laboratory Standard Operating Procedures (SOPS) and the NELAC standards. Sample VP-51-20.00-MSD exhibited high recovery of cis-1,2-dichloroethane (145% recovery) and well as a high relative percent difference (47%) with its matching MS sample. This analyte was not detected in the parent sample and no data was qualified as a result.

When applicable, the final results were annotated with the following codes:

- U - The analyte was analyzed for, but was not detected above the reported quantitation limit.
- J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- B - Indicates the analyte was found in the associated laboratory blank as well as the sample.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature:  _____

CHAIN OF CUSTODY

Nobis
Williston VT

Mobile Lab 2 – SAMPLE LOG SHEET

Sample ID	Collected			Received			Analysis					Lab ID	Analyst	Comments		
	B y	Date	Time	B y	Date	Time	Type*	Container**	Number of Containers	Preservation***	ASTM D6520 & Modified 8021/8015				8260	Other
VP 48-15	Nobis	8/30/11	0845	MJM	8/30/11	0900	1	2	2	-		✓		SEI-3	MJM	
VP 49-10	Nobis	8/29/11	1645	"	"	"								SEI-4	MJM	
VP 49-15	"	"	1340	"	"	"								SEI-5	MJM	
VP 49-20	"	"	1405	"	"	"								SEI-6	MJM	
VP 49-25	"	"	1435	"	"	"								SEI-7	MJM	
VP 49-30	"	"	1510	"	"	"								SEI-8	MJM	
VP 49-35	"	"	1540	"	"	"								SEI-9	MJM	
VP 49-37.5	"	"	1615	"	"	"								SEI-10	MJM	
VP 48-20	"	8/30/11	0915	"	"	1020								SEI-11	MJM	
VP 48-25	"	"	0955	"	"	1020								SEI-12	MJM	
VP 48-30	"	"	1035	"	"	1135								SEI-13	MJM	
VP 48-35	"	"	1120	"	"	1135								SEI-14	MJM	
VP 48-40	"	"	1200	"	"	1310								SEI-15	MJM	
VP 48-45	"	"	1250	"	"	1310								SEI-16	MJM	
VP 52-15	"	"	1510	"	"	1525								SEI-17	MJM	
VP 52-20	"	"	1540	"	"	1718								SEI-18	MJM	
VP 52-25	"	"	1600	"	"	"								SEI-19	MJM	
VP 52-30	"	"	1630	"	"	"								SEI-20	MJM	
VP 52-35	"	"	1700	"	"	"								SEI-21	MJM	
VP 52-40	"	"	1730	"	8/31/11	0720								SEI-22		

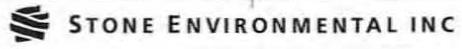
* Type of Sample: (1) water (2) soil *** (1) ice (2) HCl (3) Other _____
 ** Container: (1) bag (2) bottle (3) other _____ Preservation: _____



Mobile Lab 2 – SAMPLE LOG SHEET

Sample ID	Collected			Received				Analysis				Lab ID	Analyst	Comments		
	B y	Date	Time	B y	Date	Time	Type*	Container**	Number of Containers	Preservation***	ASTM D6520 & Modified 8021/8015				8260	Other
VP52-45	KAK	8/30/11	1800	MJM	8/31/11	0720	1	Z	Z	-		✓		SE1-23	MJM	
WP-01-EB-01	LJR	8/31/11	0730	"	"	0751	1	Z	Z	-		✓		SE1-24	MJM	
WP-02-EB-01	DC	"	0758	"	"	0808	1	Z	Z	-		✓		SE1-25	MJM	
WP-01-10.0	LJR	8/31/11	0836	"	"	0947	1	Z	Z	-		✓		SE1-26	MJM	
WP-01-15.0	LJR	"	0906	"	"	0947	1	Z	Z	-		✓		SE1-27	MJM	
WP-02-10.05	DC	"	0920	"	"	0957	1	Z	Z	-		✓		SE1-28	MJM	
WP-02-14.81	DC	"	0949	"	"	0957	1	Z	Z	-		✓		SE1-29	MJM	
WP-01-20.0	LJR	"	0956	"	"	1009	1	Z	Z	-		✓		SE1-31	MJM	
WP-01-30	LJR	"	1057	"	"	1115	1	L	Z	-		✓		SE1-32	MJM	
WP-02-24.8	DC	"	1049	"	"	1115	1	Z	Z	-		✓		SE1-33	MJM	
WP-02-19.74	"	"	1026 ^{SEI}	"	"	1026 ^{SEI}	1	Z	Z	-		✓		SE1-34	MJM	
WP-01-25.0	LJR	"	1026	"	"	1115	1	Z	Z	-		✓		SE1-35	MJM	
WP-01-35	LJR	"	1131	"	"	1245	1	Z	Z	-		✓		SE1-36	MJM	
WP-01-39.7	"	"	1228	"	"	1245	1	Z	Z	-		✓		SE1-37	MJM	
WP-02-29.72	DC	"	1123	"	"	1245	1	Z	Z	-		✓		SE1-38	MJM	
WP-02-34.8	"	"	1205	"	"	1245	1	Z	Z	-		✓		SE1-39	MJM	MS/D
WP-03-EB-01	LJR	"	1300	"	"	1330	1	Z	Z	-		✓		SE1-40	MJM	
WP-03-10.0	"	"	1359	"	"	1454	1	Z	Z	-		✓		SE1-41	MJM	
WP-03-15.0	"	"	1438	"	"	1454	1	Z	Z	-		✓		SE1-42	MJM	
WP-05-25.0	"	9/1/11	1249	"	9/1/11	1430	1	Z	Z	-		✓		SE1-62	MJM	

* Type of Sample: (1) water (2) soil *** (1) ice (2) HCl (3) Other _____
 ** Container: (1) bag (2) bottle (3) other _____ Preservation: _____



Notes
W. H. Hester VT

Mobile Lab 2 – SAMPLE LOG SHEET

Sample ID	Collected			Received			Analysis					Lab ID	Analyst	Comments		
	B y	Date	Time	B y	Date	Time	Type*	Container**	Number of Containers	Preservation***	ASTM D6520 & Modified 8021/8015				8260	Other
WP-04-EB-01	DC	8/31/11	1254	MJM	8/31/11	1315	1	Z	Z	-		✓		SEI-43	MJM	
WP-04-9.93	"	"	1459	"	"	1515	1	Z	Z	-		✓		SEI-44	MJM	
WP-04-14.90	"	"	1533	"	"	1720	1	Z	Z	-		✓		SEI-45	MJM	
WP-04-19.95	"	"	1557	"	"	1720	1	Z	Z	-		✓		SEI-46	MJM	
WP-04-25.2	"	"	1641	"	"	1720	1	Z	Z	-		✓		SEI-47	MJM	
WP-04-30.30	DC	8/31/11	1736	"	8/31/11	1750	1	Z	Z	-		✓		SEI-48	MJM	
WP-03-41.2	ESR	8/31/11	1714	"	8/31/11	1750	1	Z	Z	-		✓		SEI-49	MJM	
WP-04-EB-01	DC	9/1/11	0832	"	9/1/11	0835	1	Z	Z	-		✓		SEI-50	MJM	MJM/9/1/11
WP-05-EB-01	LJR	9/1/11	0845	"	9/1/11	0846	1	Z	Z	-		✓		SEI-50	MJM	
WP-5-10	"	"	1113	"	"	1130	1	Z	Z	-		✓		SEI-52	MJM	
5-5015	"	"	1037	"	"	1130	1	Z	Z	-		✓		SEI-53	MJM	
WP-06-5.22	DC	"	19 ⁴⁵ 1125	"	"	1130	1	Z	Z	-		✓		SE-54	MJM	
WP-06-15.15	"	"	1125	"	"	1130	1	Z	Z	-		✓		SEI-55	MJM	
WP-06-10.25	"	"	1053	"	"	1130	1	Z	Z	-		✓		SEI-56	MJM	
WP-06-15.15-FD	"	"	1125	"	"	1130	1	Z	Z	-		✓		SEI-56-FD	MJM	MJM 9/1/11
WP-06-20.08	"	"	1206	"	"	1230	1	Z	Z	-		✓		SEI-59	MJM	
WP-05-20.0	LJR	"	1216	"	"	1230	1	Z	Z	-		✓		SEI-60	MJM	
WP-05-15	"	"	1140	"	"	1230	1	Z	Z	-		✓		SEI-61	MJM	
WP-05-30.0	"	"	1331	"	"	1431	1	Z	Z	-		✓		SEI-63	MJM	
WP-05-EB-02	"	"	1400	"	"	1433										

* Type of Sample: (1) water (2) soil
 ** Container: (1) bag (2) bottle (3) other
 *** (1) ice (2) HCl (3) Other
 Preservation:



Nobis
Williston VT

Mobile Lab 2 – SAMPLE LOG SHEET

Sample ID	Collected			Received				Analysis				Lab ID	Analyst	Comments		
	B y	Date	Time	B y	Date	Time	Type*	Container**	Number of Containers	Preservation***	ASTM D6520 & Modified 8021/8015				8260	Other
WP-06-24.85	DC	9/1/11	1243	MJM	9/1/11	1434	1	2	2	-		✓		SE165	MJM	
WP-06-30.2	DC	9/1/11	1312	MJM	9/1/11	1435	1	2	2	-		✓		SE166	MJM	
WP-06-35.11	DC	9/1/11	1353	MJM	9/1/11	1436	1	2	2	-		✓		SE167	MJM	
WP-03-20.0	LJR	8/31/11	1517	MJM	"	1440	1	2	2	-		✓		SE168	MJM	
WP-03-25.0	LJR	8/31/11	1557	MJM	"	1440	1	2	2	-		✓		SE169	MJM	
WP-08-EB-01	DC	9/1/11	1419	MJM	"	1550	1	2	2	-		✓		SE1-70	MJM	
WP-08-5.20	DC	9/1/11	1513	MJM	"	1550	1	2	2	-		✓		SE1-71	MJM	MS/D
WP-07-5.2	LJR	9/1/11	1456	MJM	"	1655	1	2	2	-		✓		SE172	MJM	
WP-07-10.2	"	"	1528	MJM	"	1655	1	2	2	-		✓		SE173	MJM	
WP-07-15.0	"	"	1556	"	"	1655	1	2	2	-		✓		SE174	MJM	FD = SEI-74-FD
WP-07-19.9	"	"	1623	"	"	1655	1	2	2	-		✓		SE175	MJM	
WP-08-10.10	DC	"	1544	"	"	1655	1	2	2	-		✓		SE196	MJM	
WP-08-14.94	"	"	1614	"	"	1655	1	2	2	-		✓		SE197	MJM	
WP-08-20.2	"	"	1644	"	"	1720	1	2	2	-		✓		SE178	MJM	
WP-08-25.17	"	"	1729	"	"	1840	1	2	2	-		✓		SE179	MJM	
WP-08-30.1	"	"	1804	"	"	1840	1	2	2	-		✓		SE180	MJM	FD = SEI-80-FD
WP-07-29.1	LJR	"	1821	"	"	1840	1	2	2	-		✓		SE181	MJM	MS/D
WP-07-25	"	"	1704	"	"	1840	1	2	2	-		✓		SE182	MJM	
VP-51-10	KTK	9/2/11	0850	"	"	0936	1	2	2	-		✓		SE183	MJM	
VP51-15	"	"	0910	"	"	0936	1	2	2	-		✓		SE184	MJM	

* Type of Sample: (1) water (2) soil
 ** Container: (1) bag (2) bottle (3) other
 *** (1) ice (2) HCl (3) Other



LABORATORY ANALYTICAL RESULTS

Onsite Laboratory Results Mobile Laboratory 2

Client: Nobis
Location: Williston, VT
Project ID: Nobis
SEI Project No.: 11NOBIS-R
Matrix: GW
Location ID: VP48

Report Date: 9/13/2011
Date(s) Sampled: 08/30/2011 - 08/30/2011
Date(s) Analyzed: 08/30/2011 - 08/30/2011
Test Method: SW8260B, SW8260B
Results Given as: ug/L



All of the tests results were performed in accordance with the NELAC standards and meet all NELAC requirements for parameters for which accreditation is required or available. The reports were completed according to contract specific reporting requirements. Any exceptions to the NELAC standard requirements are noted and the data has been qualified accordingly.

Depth		01500		02000		02500		03000		03500		04000		04500	
Sample Name	CAS #	VP48-015.00		VP48-020.00		VP48-025.00		VP48-030.00		VP48-035.00		VP48-040.00		VP48-045.00	
Analysis Date		8/30/2011	N												
1,1-Dichloroethene	75-35-4	2.0 U													
trans-1,2-Dichloroethene	156-60-5	2.0 U													
cis-1,2-Dichloroethene	156-59-2	2.0 U		2.0 U		3.2		3.0		7.9		2.4		2.0 U	
1,1,1-Trichloroethane	71-55-6	2.0 U													
Trichloroethene	79-01-6	2.0 U		4.9		1900		1500		3900		1000 E		2.2	
Tetrachloroethene	127-18-4	2.0 U		2.0 U		41		83		6.4		2.0 U		2.0 U	
Chlorobenzene	108-90-7	2.0 U													
Bromofluorobenzene (SS)	460-00-4	94 %		97 %		93 %		95 %		92 %		93 %		107 %	

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 D = Sample analyzed at a dilution.
 N = Normal sample.
 EB = Equipment Blank
 B = Indicates blank contamination.

Onsite Laboratory Results Mobile Laboratory 2

Client: Nobis
Location: Williston, VT
Project ID: Nobis
SEI Project No.: 11NOBIS-R
Matrix: GW
Location ID: VP49

Report Date: 9/13/2011
Date(s) Sampled: 08/29/2011 - 08/29/2011
Date(s) Analyzed: 08/30/2011 - 08/30/2011
Test Method: SW8260B, SW8260B
Results Given as: ug/L



All of the tests results were performed in accordance with the NELAC standards and meet all NELAC requirements for parameters for which accreditation is required or available. The reports were completed according to contract specific reporting requirements. Any exceptions to the NELAC standard requirements are noted and the data has been qualified accordingly.

Depth		010.00		015.00		020.00		025.00		030.00		035.00		037.50	
Sample Name	CAS #	VP49-010.00		VP49-015.00		VP49-020.00		VP49-025.00		VP49-030.00		VP49-035.00		VP49-037.50	
Analysis Date		8/30/2011	N												
1,1-Dichloroethene	75-35-4	2.0	U												
trans-1,2-Dichloroethene	156-60-5	2.0	U												
cis-1,2-Dichloroethene	156-59-2	2.0	U												
1,1,1-Trichloroethane	71-55-6	2.0	U												
Trichloroethene	79-01-6	69		2.0	U	2.0	U	35		440		390		49	
Tetrachloroethene	127-18-4	2.0	U												
Chlorobenzene	108-90-7	2.0	U												
Bromofluorobenzene (SS)	460-00-4	95	%	94	%	107	%	96	%	97	%	84	%	92	%

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 D = Sample analyzed at a dilution.
 N = Normal sample.
 EB = Equipment Blank
 B = Indicates blank contamination.

Onsite Laboratory Results Mobile Laboratory 2

Client: Williston, VT
Location: Nobis
Project ID: Nobis
SEI Project No.:
Matrix: GW
Location ID: VP51

Report Date: 9/13/2011
Date(s) Sampled: 09/02/2011 - 09/02/2011
Date(s) Analyzed: 09/02/2011 - 09/02/2011
Test Method: SW8260B, SW8260B
Results Given as: ug/L



All of the tests results were performed in accordance with the NELAC standards and meet all NELAC requirements for parameters for which accreditation is required or available. The reports were completed according to contract specific reporting requirements. Any exceptions to the NELAC standard requirements are noted and the data has been qualified accordingly.

Depth		010.00		015.00		020.00		025.00		030.00		035.00		040.00		040.00	
Sample Name	CAS #	VP51-010.00		VP51-015.00		VP51-020.00		VP51-025.00		VP51-030.00		VP51-035.00		VP51-040.00-FD		VP51-040.00	
Analysis Date		9/2/2011	N	9/2/2011	FD	9/2/2011	N										
1,1-Dichloroethene	75-35-4	2.0	U	2.0	U	2.0	U										
trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	U	2.0	U										
cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	U	2.0	U										
1,1,1-Trichloroethane	71-55-6	2.0	U	2.0	U	2.0	U										
Trichloroethene	79-01-6	2.0	U	2.0	U	2.0	U										
Tetrachloroethene	127-18-4	2.0	U	2.0	U	2.0	U										
Chlorobenzene	108-90-7	2.0	U	2.0	U	2.0	U										
Bromofluorobenzene (SS)	460-00-4	94	%	83	%	93	%	94	%	93	%	107	%	91	%	94	%

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 D = Sample analyzed at a dilution.
 N = Normal sample.
 EB = Equipment Blank
 B = Indicates blank contamination.

Onsite Laboratory Results Mobile Laboratory 2

Client:
Location: Williston, VT
Project ID: Nobis
SEI Project No.:
Matrix: GW
Location ID: VP52

Report Date: 9/13/2011
Date(s) Sampled: 08/30/2011 - 08/30/2011
Date(s) Analyzed: 08/30/2011 - 08/31/2011
Test Method: SW8260B, SW8260B
Results Given as: ug/L



All of the tests results were performed in accordance with the NELAC standards and meet all NELAC requirements for parameters for which accreditation is required or available. The reports were completed according to contract specific reporting requirements. Any exceptions to the NELAC standard requirements are noted and the data has been qualified accordingly.

Depth		015.00		020.00		025.00		030.00		035.00		040.00		045.00	
Sample Name	CAS #	VP52-015.00		VP52-020.00		VP52-025.00		VP52-030.00		VP52-035.00		VP52-040.00		VP52-045.00	
Analysis Date		8/30/2011	N	8/31/2011	N										
1,1-Dichloroethene	75-35-4	2.0 U													
trans-1,2-Dichloroethene	156-60-5	2.0 U													
cis-1,2-Dichloroethene	156-59-2	2.0 U													
1,1,1-Trichloroethane	71-55-6	2.0 U													
Trichloroethene	79-01-6	2.0 U													
Tetrachloroethene	127-18-4	2.0 U													
Chlorobenzene	108-90-7	2.0 U													
Bromofluorobenzene (SS)	460-00-4	97 %		92 %		79 %		79 %		79 %		76 %		76 %	

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 D = Sample analyzed at a dilution.
 N = Normal sample.
 EB = Equipment Blank
 B = Indicates blank contamination.

Onsite Laboratory Results Mobile Laboratory 2

Client:
Location: Williston, VT
Project ID: Nobis
SEI Project No.:
Matrix: GW
Location ID: WP-01

Report Date: 9/13/2011
Date(s) Sampled: 08/31/2011 - 08/31/2011
Date(s) Analyzed: 08/31/2011 - 09/01/2011
Test Method: SW8260B, SW8260B
Results Given as: ug/L



All of the tests results were performed in accordance with the NELAC standards and meet all NELAC requirements for parameters for which accreditation is required or available. The reports were completed according to contract specific reporting requirements. Any exceptions to the NELAC standard requirements are noted and the data has been qualified accordingly.

Depth		001.00		010.00		015.00		020.00		025.00		030.00		035.00		039.70	
Sample Name	CAS #	WP-01-EB-01		WP-01-010.00		WP-01-015.00		WP-01-020.00		WP-01-025.00		WP-01-030.00		WP-01-035.00		WP-01-039.70	
Analysis Date		8/31/2011	EB	8/31/2011	N												
1,1-Dichloroethene	75-35-4	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	1.3	J	5.3		0.70	J
trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	1.6	J	3.9		2.0	U
cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	U	2.0	U	2.0	U	2.0		55		110		10	
1,1,1-Trichloroethane	71-55-6	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Trichloroethene	79-01-6	2.0	U	2.0	U	2.0	U	41		74		7200		58000		3700	
Tetrachloroethene	127-18-4	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	1.2	J	9.6		2.0	U
Chlorobenzene	108-90-7	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Bromofluorobenzene (SS)	460-00-4	75	%	80	%	78	%	81	%	91	%	81	D	75	%	76	%

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 D = Sample analyzed at a dilution.
 N = Normal sample.
 EB = Equipment Blank
 B = Indicates blank contamination.

Onsite Laboratory Results Mobile Laboratory 2

Client:
Location: Williston, VT
Project ID: Nobis
SEI Project No.:
Matrix: GW
Location ID: WP-02

Report Date: 9/13/2011
Date(s) Sampled: 08/31/2011 - 08/31/2011
Date(s) Analyzed: 08/31/2011 - 09/01/2011
Test Method: SW8260B, SW8260B
Results Given as: ug/L



All of the tests results were performed in accordance with the NELAC standards and meet all NELAC requirements for parameters for which accreditation is required or available. The reports were completed according to contract specific reporting requirements. Any exceptions to the NELAC standard requirements are noted and the data has been qualified accordingly.

Depth		001.00		010.05		014.81		019.74		024.80		029.72		034.80	
Sample Name	CAS #	WP-02-EB-01		WP-02-010.05		WP-02-014.81		WP-02-019.74		WP-02-024.80		WP-02-029.72		WP-02-034.80	
Analysis Date		8/31/2011	EB	8/31/2011	N										
1,1-Dichloroethene	75-35-4	2.0	U	2.0	U	1.6	J	9.7		50		120		7.8	
trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	U	4.7		26		120		200	E	9.9	
cis-1,2-Dichloroethene	156-59-2	2.0	U	0.94	J	430		3400		17000		31000		2800	
1,1,1-Trichloroethane	71-55-6	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Trichloroethene	79-01-6	2.0	U	2.6		4.4		3.2		1.0	J	940		59	
Tetrachloroethene	127-18-4	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chlorobenzene	108-90-7	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Bromofluorobenzene (SS)	460-00-4	77	%	77	%	77	D	79	%	80	%	76	D	79	%

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 D = Sample analyzed at a dilution.
 N = Normal sample.
 EB = Equipment Blank
 B = Indicates blank contamination.

Onsite Laboratory Results Mobile Laboratory 2

Client:
Location: Williston, VT
Project ID: Nobis
SEI Project No.:
Matrix: GW
Location ID: WP-03

Report Date: 9/13/2011
Date(s) Sampled: 08/31/2011 - 08/31/2011
Date(s) Analyzed: 08/31/2011 - 09/01/2011
Test Method: SW8260B, SW8260B
Results Given as: ug/L



All of the tests results were performed in accordance with the NELAC standards and meet all NELAC requirements for parameters for which accreditation is required or available. The reports were completed according to contract specific reporting requirements. Any exceptions to the NELAC standard requirements are noted and the data has been qualified accordingly.

Depth		001.00		010.00		015.00		020.00		025.00		041.20	
Sample Name	CAS #	WP-03-EB-01		WP-03-010.00		WP-03-015.00		WP-03-020.00		WP-03-025.00		WP-03-041.20	
Analysis Date		8/31/2011	EB	8/31/2011	N	8/31/2011	N	9/1/2011	N	9/1/2011	N	9/1/2011	N
1,1-Dichloroethene	75-35-4	2.0	U	2.0	U	2.0	U	0.51	J	2.0	U	2.0	U
trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
cis-1,2-Dichloroethene	156-59-2	0.93	J	2.0	U	0.43	J	3.6		2.0	U	2.0	U
1,1,1-Trichloroethane	71-55-6	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Trichloroethene	79-01-6	3.0		2.0	U	14		1300		7.3		2.0	U
Tetrachloroethene	127-18-4	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chlorobenzene	108-90-7	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Bromofluorobenzene (SS)	460-00-4	74	%	86	%	75	%	91	%	78	%	81	%

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 D = Sample analyzed at a dilution.
 N = Normal sample.
 EB = Equipment Blank
 B = Indicates blank contamination.

Onsite Laboratory Results Mobile Laboratory 2

Client:
Location: Williston, VT
Project ID: Nobis
SEI Project No.:
Matrix: GW
Location ID: WP-04

Report Date: 9/13/2011
Date(s) Sampled: 08/31/2011 - 08/31/2011
Date(s) Analyzed: 08/31/2011 - 09/01/2011
Test Method: SW8260B, SW8260B
Results Given as: ug/L



All of the tests results were performed in accordance with the NELAC standards and meet all NELAC requirements for parameters for which accreditation is required or available. The reports were completed according to contract specific reporting requirements. Any exceptions to the NELAC standard requirements are noted and the data has been qualified accordingly.

Depth		001.00		009.93		014.90		019.95		025.20		030.30	
Sample Name	CAS #	WP-04-EB-01		WP-04-009.93		WP-04-014.90		WP-04-019.95		WP-04-025.20		WP-04-030.30	
Analysis Date		8/31/2011	EB	8/31/2011	N	9/1/2011	N	9/1/2011	N	9/1/2011	N	9/1/2011	N
1,1-Dichloroethene	75-35-4	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
cis-1,2-Dichloroethene	156-59-2	1.1	J	2.0	J	1.1	J	0.45	J	1.0	J	0.61	J
1,1,1-Trichloroethane	71-55-6	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Trichloroethene	79-01-6	2.0	U	2.0	U	1.2	J	1.1	J	110		67	
Tetrachloroethene	127-18-4	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chlorobenzene	108-90-7	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Bromofluorobenzene (SS)	460-00-4	78	%	79	%	90	%	91	%	88	%	86	%

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 D = Sample analyzed at a dilution.
 N = Normal sample.
 EB = Equipment Blank
 B = Indicates blank contamination.

Onsite Laboratory Results Mobile Laboratory 2

Client: Nobis
Location: Williston, VT
Project ID: Nobis, Williston
SEI Project No.: 112353-R
Matrix: GW
Location ID: WP-05

Report Date: 9/13/2011
Date(s) Sampled: 09/01/2011 - 09/01/2011
Date(s) Analyzed: 09/01/2011 - 09/01/2011
Test Method: SW8260B, SW8260B
Results Given as: ug/L



All of the tests results were performed in accordance with the NELAC standards and meet all NELAC requirements for parameters for which accreditation is required or available. The reports were completed according to contract specific reporting requirements. Any exceptions to the NELAC standard requirements are noted and the data has been qualified accordingly.

Depth		00100		00515		01000		01500		02000		02500		03000	
Sample Name	CAS #	WP-05-EB-01		WP-05-005.15		WP-05-010.00		WP-05-015.00		WP-05-020.00		WP-05-025.00		WP-05-030.00	
Analysis Date		9/1/2011	EB	9/1/2011	N										
1,1-Dichloroethene	75-35-4	2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U	
trans-1,2-Dichloroethene	156-60-5	2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U	
cis-1,2-Dichloroethene	156-59-2	2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		0.81 J	
1,1,1-Trichloroethane	71-55-6	2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U	
Trichloroethene	79-01-6	2.0 U		2.0 U		2.0 U		0.71 J		0.57 J		58		160	
Tetrachloroethene	127-18-4	2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U	
Chlorobenzene	108-90-7	2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U		2.0 U	
Bromofluorobenzene (SS)	460-00-4	88 %		89 %		89 %		89 %		90 %		88 %		89 %	

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 D = Sample analyzed at a dilution.
 N = Normal sample.
 EB = Equipment Blank
 B = Indicates blank contamination.

Onsite Laboratory Results Mobile Laboratory 2

Client:
Location: Williston, VT
Project ID: Nobis
SEI Project No.:
Matrix: GW
Location ID: WP-06

Report Date: 9/13/2011
Date(s) Sampled: 09/01/2011 - 09/01/2011
Date(s) Analyzed: 09/01/2011 - 09/02/2011
Test Method: SW8260B, SW8260B
Results Given as: ug/L



All of the tests results were performed in accordance with the NELAC standards and meet all NELAC requirements for parameters for which accreditation is required or available. The reports were completed according to contract specific reporting requirements. Any exceptions to the NELAC standard requirements are noted and the data has been qualified accordingly.

Depth		001.00		005.22		010.25		015.15		015.15		020.08		024.85		030.20	
Sample Name	CAS #	WP-06-EB-01		WP-06-005.22		WP-06-010.25		WP-06-015.15-FD		WP-06-015.15		WP-06-020.08		WP-06-024.85		WP-06-030.20	
Analysis Date		9/1/2011	EB	9/1/2011	N	9/1/2011	N	9/1/2011	FD	9/1/2011	N	9/1/2011	N	9/1/2011	N	9/1/2011	N
1,1-Dichloroethene	75-35-4	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	1.2	J	0.46	J	2.0	U
trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	U	2.0	U	1.7	J	1.7	J	5.8		2.7		1.3	J
1,1,1-Trichloroethane	71-55-6	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Trichloroethene	79-01-6	2.0	U	2.0	U	2.0	U	590		590		13000		2100		630	
Tetrachloroethene	127-18-4	2.0	U	2.0	U	2.0	U	27		25		60		0.86	J	2.0	U
Chlorobenzene	108-90-7	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Bromofluorobenzene (SS)	460-00-4	88	%	87	%	86	%	85	%	88	D	85	%	86	%	88	%

Depth		035.11	
Sample Name	CAS #	WP-06-035.11	
Analysis Date		9/2/2011	N
1,1-Dichloroethene	75-35-4	2.0	U
trans-1,2-Dichloroethene	156-60-5	2.0	U
cis-1,2-Dichloroethene	156-59-2	2.0	U
1,1,1-Trichloroethane	71-55-6	2.0	U
Trichloroethene	79-01-6	0.78	J
Tetrachloroethene	127-18-4	2.0	U
Chlorobenzene	108-90-7	2.0	U
Bromofluorobenzene (SS)	460-00-4	89	%

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 D = Sample analyzed at a dilution.
 N = Normal sample.
 EB = Equipment Blank
 B = Indicates blank contamination.

Onsite Laboratory Results Mobile Laboratory 2

Client: Nobis
Location: Williston, VT
Project ID: Nobis, Williston
SEI Project No.: 112353-R
Matrix: GW
Location ID: WP-07

Report Date: 9/13/2011
Date(s) Sampled: 09/01/2011 - 09/01/2011
Date(s) Analyzed: 09/01/2011 - 09/02/2011
Test Method: SW8260B, SW8260B
Results Given as: ug/L



All of the tests results were performed in accordance with the NELAC standards and meet all NELAC requirements for parameters for which accreditation is required or available. The reports were completed according to contract specific reporting requirements. Any exceptions to the NELAC standard requirements are noted and the data has been qualified accordingly.

Depth		00100		00520		01020		01500		01500		01990		02500		02910	
Sample Name	CAS #	WP-07-EB-01		WP-07-005.20		WP-07-010.20		WP-07-015.00-FD		WP-07-015.00		WP-07-019.90		WP-07-025.00		WP-07-029.10	
Analysis Date		9/1/2011	EB	9/2/2011	N	9/2/2011	N	9/2/2011	FD	9/2/2011	N	9/2/2011	N	9/2/2011	N	9/2/2011	N
1,1-Dichloroethene	75-35-4	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
1,1,1-Trichloroethane	71-55-6	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Trichloroethene	79-01-6	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Tetrachloroethene	127-18-4	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Chlorobenzene	108-90-7	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Bromofluorobenzene (SS)	460-00-4	87	%	90	%	89	%	91	%	83	%	82	%	86	%	84	%

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 D = Sample analyzed at a dilution.
 N = Normal sample.
 EB = Equipment Blank
 B = Indicates blank contamination.

Onsite Laboratory Results Mobile Laboratory 2

Client:
Location: Williston, VT
Project ID: Nobis
SEI Project No.:
Matrix: GW
Location ID: WP-08

Report Date: 9/13/2011
Date(s) Sampled: 09/01/2011 - 09/01/2011
Date(s) Analyzed: 09/01/2011 - 09/02/2011
Test Method: SW8260B, SW8260B
Results Given as: ug/L



All of the tests results were performed in accordance with the NELAC standards and meet all NELAC requirements for parameters for which accreditation is required or available. The reports were completed according to contract specific reporting requirements. Any exceptions to the NELAC standard requirements are noted and the data has been qualified accordingly.

Depth		001.00		005.20		010.10		014.94		020.20		025.17		030.10		030.10	
Sample Name	CAS #	WP-08-EB-01		WP-08-005.20		WP-08-010.10		WP-08-014.94		WP-08-020.20		WP-08-025.17		WP-08-030.10-FD		WP-08-030.10	
Analysis Date		9/1/2011	EB	9/1/2011	N	9/2/2011	FD	9/2/2011	N								
1,1-Dichloroethene	75-35-4	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	0.62	J	2.0	U	2.0	U
trans-1,2-Dichloroethene	156-60-5	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
cis-1,2-Dichloroethene	156-59-2	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	5.7		2.0	U	2.0	U
1,1,1-Trichloroethane	71-55-6	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Trichloroethene	79-01-6	2.0	U	2.0	U	2.0	U	0.82	J	10		3900		2.4		3.1	
Tetrachloroethene	127-18-4	2.0	U	2.0	U	2.0	U	2.0	U	1.2	J	2.0	U	2.0	U	2.0	U
Chlorobenzene	108-90-7	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U
Bromofluorobenzene (SS)	460-00-4	84	%	86	%	102	%	86	%	91	%	90	D	104	%	85	%

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 D = Sample analyzed at a dilution.
 N = Normal sample.
 EB = Equipment Blank
 B = Indicates blank contamination.

QA / QC SUMMARIES

*Stone Environmental Inc. Project Number: 112353
Laboratory Matrix Spike/Matrix Spike Duplicate Analyses Summary Sheet*

Sample ID: VP-51-020.00
 Sample Date: 9/2/2011
 Analysis Date: 09/02/2011
 Method: SW8260B

Analyte	Original Conc. (ug/L)	MS Conc. (ug/L)	MS % Recovery	MSD Conc. (ug/L)	MSD % Recovery	RPD < 30	QC Limits (% Recovery)
Spike Amount (ug/L):		20		20			
Vinyl Chloride	2.0 U	22	110	24	120	9	70 - 130
1,1-Dichloroethene	2.0 U	22	110	24	120	9	70 - 130
trans-1,2-Dichloroethene	2.0 U	21	105	22	110	5	70 - 130
cis-1,2-Dichloroethene	2.0 U	18	90	29	145 *	47	70 - 130
1,1,1-Trichloroethane	2.0 U	21	105	23	115	9	70 - 130
Trichloroethene	2.0 U	25	125	25	125	0	70 - 130
Tetrachloroethene	2.0 U	24	120	25	125	4	70 - 130

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 * = Percent Recovery outside QC Limits

*Stone Environmental Inc. Project Number: 112353
Laboratory Matrix Spike/Matrix Spike Duplicate Analyses Summary Sheet*

Sample ID: WP-02-034.80
 Sample Date: 8/31/2011
 Analysis Date: 09/02/2011
 Method: SW8260B

Analyte	Original Conc. (ug/L)	MS Conc. (ug/L)	MS % Recovery	MSD Conc. (ug/L)	MSD % Recovery	RPD < 30	QC Limits (% Recovery)
Spike Amount (ug/L):		20		20			
Vinyl Chloride	1.6 J	26	122	25	117	4	70 - 130
1,1-Dichloroethene	7.8	33	126	33	126	0	70 - 130
trans-1,2-Dichloroethene	9.9	32	111	31	106	3	70 - 130
cis-1,2-Dichloroethene	2800	3600 E	4000 *	3200 E	2000 *	12	70 - 130
1,1,1-Trichloroethane	2.0 U	23	115	24	120	4	70 - 130
Trichloroethene	59	84	125	79	100	6	70 - 130
Tetrachloroethene	2.0 U	24	120	25	125	4	70 - 130

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 * = Percent Recovery outside QC Limits

*Stone Environmental Inc. Project Number: 112353
Laboratory Matrix Spike/Matrix Spike Duplicate Analyses Summary Sheet*

Sample ID: WP-07-029.10
 Sample Date: 9/1/2011
 Analysis Date: 09/02/2011
 Method: SW8260B

Analyte	Original Conc. (ug/L)	MS Conc. (ug/L)	MS % Recovery	MSD Conc. (ug/L)	MSD % Recovery	RPD < 30	QC Limits (% Recovery)
Spike Amount (ug/L):		20		20			
Vinyl Chloride	2.0 U	23	115	23	115	0	70 - 130
1,1-Dichloroethene	2.0 U	23	115	23	115	0	70 - 130
trans-1,2-Dichloroethene	2.0 U	21	105	21	105	0	70 - 130
cis-1,2-Dichloroethene	2.0 U	19	95	19	95	0	70 - 130
1,1,1-Trichloroethane	2.0 U	22	110	22	110	0	70 - 130
Trichloroethene	2.0 U	26	130	21	105	21	70 - 130
Tetrachloroethene	2.0 U	24	120	23	115	4	70 - 130

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 * = Percent Recovery outside QC Limits

*Stone Environmental Inc. Project Number: 112353
Laboratory Matrix Spike/Matrix Spike Duplicate Analyses Summary Sheet*

Sample ID: WP-08-005.20
 Sample Date: 9/1/2011
 Analysis Date: 09/02/2011
 Method: SW8260B

Analyte	Original Conc. (ug/L)	MS Conc. (ug/L)	MS % Recovery	MSD Conc. (ug/L)	MSD % Recovery	RPD < 30	QC Limits (% Recovery)
Spike Amount (ug/L):		20		20			
Vinyl Chloride	2.0 U	22	110	23	115	4	70 - 130
1,1-Dichloroethene	2.0 U	24	120	23	115	4	70 - 130
trans-1,2-Dichloroethene	2.0 U	22	110	21	105	5	70 - 130
cis-1,2-Dichloroethene	2.0 U	19	95	18	90	5	70 - 130
1,1,1-Trichloroethane	2.0 U	23	115	22	110	4	70 - 130
Trichloroethene	2.0 U	26	130	24	120	8	70 - 130
Tetrachloroethene	2.0 U	23	115	21	105	9	70 - 130

U = Not detected above the specified reporting limit.
 J = Estimated value.
 E = Estimated value, marginally above the calibration levels.
 * = Percent Recovery outside QC Limits

Stone Environmental Inc. Project Number: 112353
Volatile Standard Analyses Summary

QC Batch: AD
 Analysis Date: 08/30/2011
 Spike Amount: 20

Analyte	VSTD Conc. (ug/L)	VSTD % Difference (Acceptable Limit <=20 %)
Vinyl Chloride	18.01	9.9
1,1-Dichloroethene	19.3	3.5
trans-1,2-Dichloroethene	19.27	3.7
cis-1,2-Dichloroethene	18.9	5.5
1,1,1-Trichloroethane	19	5.0
Trichloroethene	19.3	3.5
Tetrachloroethene	22.89	-14.5
Bromofluorobenzene (SS)	100.85 %	100.85 %

U = Not detected above the specified reporting limit.
 J = Estimated value.
 * = Outside acceptable limit

Stone Environmental Inc. Project Number: 112353
Volatile Standard Analyses Summary

QC Batch: AE
 Analysis Date: 08/31/2011
 Spike Amount: 20

Analyte	VSTD Conc. (ug/L)	VSTD % Difference (Acceptable Limit <=20 %)
Vinyl Chloride	17.71	11.5
1,1-Dichloroethene	17.98	10.1
trans-1,2-Dichloroethene	18.58	7.1
cis-1,2-Dichloroethene	19.58	2.1
1,1,1-Trichloroethane	17.57	12.2
Trichloroethene	19.28	3.6
Tetrachloroethene	21.81	-9.0
Bromofluorobenzene (SS)	103.85 %	103.85 %

U = Not detected above the specified reporting limit.
 J = Estimated value.
 * = Outside acceptable limit

Stone Environmental Inc. Project Number: 112353
Volatile Standard Analyses Summary

QC Batch: AG
 Analysis Date: 09/01/2011
 Spike Amount: 20

Analyte	VSTD Conc. (ug/L)	VSTD % Difference (Acceptable Limit <=20 %)
Vinyl Chloride	19.42	2.9
1,1-Dichloroethene	19.88	.6
trans-1,2-Dichloroethene	20.29	-1.5
cis-1,2-Dichloroethene	21.11	-5.6
1,1,1-Trichloroethane	19.71	1.5
Trichloroethene	21.7	-8.5
Tetrachloroethene	20.55	-2.8
Bromofluorobenzene (SS)	104.1 %	104.1 %

U = Not detected above the specified reporting limit.
 J = Estimated value.
 * = Outside acceptable limit

Stone Environmental Inc. Project Number: 112353
Volatile Standard Analyses Summary

QC Batch: AH
 Analysis Date: 09/02/2011
 Spike Amount: 20

Analyte	VSTD Conc. (ug/L)	VSTD % Difference (Acceptable Limit <=20 %)
Vinyl Chloride	18.8	6.0
1,1-Dichloroethene	18.89	5.6
trans-1,2-Dichloroethene	19.68	1.6
cis-1,2-Dichloroethene	20.46	-2.3
1,1,1-Trichloroethane	18.97	5.2
Trichloroethene	23.21	-16.1
Tetrachloroethene	19.97	.2
Bromofluorobenzene (SS)	104.95 %	104.95 %

U = Not detected above the specified reporting limit.
 J = Estimated value.
 * = Outside acceptable limit

Stone Environmental Inc. Project Number: 112353
Laboratory Blank Sample Analysis Summary

Sample ID VBLK-AD
Date Analyzed 8/30/2011

Analyte	Result (ug/L)
Vinyl Chloride	2.0 U
1,1-Dichloroethene	2.0 U
trans-1,2-Dichloroethene	2.0 U
cis-1,2-Dichloroethene	2.0 U
1,1,1-Trichloroethane	2.0 U
Trichloroethene	2.0 U
Tetrachloroethene	2.0 U
Bromofluorobenzene (SS)	92 %

U = Not detected above the specified reporting limit.
J = Estimated value.

Stone Environmental Inc. Project Number: 112353
Laboratory Blank Sample Analysis Summary

Sample ID VBLK-AE
Date Analyzed 8/31/2011

Analyte	Result (ug/L)
Vinyl Chloride	2.0 U
1,1-Dichloroethene	2.0 U
trans-1,2-Dichloroethene	2.0 U
cis-1,2-Dichloroethene	2.0 U
1,1,1-Trichloroethane	2.0 U
Trichloroethene	2.0 U
Tetrachloroethene	2.0 U
Bromofluorobenzene (SS)	92 %

U = Not detected above the specified reporting limit.
J = Estimated value.

Stone Environmental Inc. Project Number: 112353
Laboratory Blank Sample Analysis Summary

Sample ID VBLK-AF
Date Analyzed 9/1/2011

Analyte	Result (ug/L)
Vinyl Chloride	2.0 U
1,1-Dichloroethene	2.0 U
trans-1,2-Dichloroethene	2.0 U
cis-1,2-Dichloroethene	2.0 U
1,1,1-Trichloroethane	2.0 U
Trichloroethene	2.0 U
Tetrachloroethene	2.0 U
Bromofluorobenzene (SS)	80 %

U = Not detected above the specified reporting limit.
J = Estimated value.

Stone Environmental Inc. Project Number: 112353
Laboratory Blank Sample Analysis Summary

Sample ID VBLK-AG
Date Analyzed 9/1/2011

Analyte	Result (ug/L)
Vinyl Chloride	2.0 U
1,1-Dichloroethene	2.0 U
trans-1,2-Dichloroethene	2.0 U
cis-1,2-Dichloroethene	2.0 U
1,1,1-Trichloroethane	2.0 U
Trichloroethene	2.0 U
Tetrachloroethene	2.0 U
Bromofluorobenzene (SS)	92 %

U = Not detected above the specified reporting limit.
J = Estimated value.

Stone Environmental Inc. Project Number: 112353
Laboratory Blank Sample Analysis Summary

Sample ID VBLK-AH
Date Analyzed 9/2/2011

Analyte	Result (ug/L)
Vinyl Chloride	2.0 U
1,1-Dichloroethene	2.0 U
trans-1,2-Dichloroethene	2.0 U
cis-1,2-Dichloroethene	2.0 U
1,1,1-Trichloroethane	2.0 U
Trichloroethene	2.0 U
Tetrachloroethene	2.0 U
Bromofluorobenzene (SS)	88 %

U = Not detected above the specified reporting limit.
J = Estimated value.

Stone Environmental Inc. Project Number: 112353
Laboratory Control Sample Summary

QC Batch: AD

Analysis Date: 08/30/2011

Method: SW8260B

Spike Amount: 20

Analyte	Lab Blank Conc. (ug/L)	LCS Conc.(ug/L)	LCS % Recovery	QC Limits (% Recovery)
Vinyl Chloride	2.0 U	18	92	70 - 130
1,1-Dichloroethene	2.0 U	19	97	70 - 130
trans-1,2-Dichloroethene	2.0 U	19	96	70 - 130
cis-1,2-Dichloroethene	2.0 U	19	95	70 - 130
1,1,1-Trichloroethane	2.0 U	18	92	70 - 130
Trichloroethene	2.0 U	22	113	70 - 130
Tetrachloroethene	2.0 U	21	103	70 - 130
Bromofluorobenzene (SS)	92 %	84 %	84 %	70 - 130

U = Not detected above the specified reporting limit.

J = Estimated value.

NA = Compound not present.

* = Percent Recovery outside QC Limits

Stone Environmental Inc. Project Number: 112353
Laboratory Control Sample Summary

QC Batch: AE

Analysis Date: 08/31/2011

Method: SW8260B

Spike Amount: 20

Analyte	Lab Blank Conc. (ug/L)	LCS Conc.(ug/L)	LCS % Recovery	QC Limits (% Recovery)
Vinyl Chloride	2.0 U	19	93	70 - 130
1,1-Dichloroethene	2.0 U	21	103	70 - 130
trans-1,2-Dichloroethene	2.0 U	19	97	70 - 130
cis-1,2-Dichloroethene	2.0 U	18	90	70 - 130
1,1,1-Trichloroethane	2.0 U	18	93	70 - 130
Trichloroethene	2.0 U	20	101	70 - 130
Tetrachloroethene	2.0 U	25	125	70 - 130
Bromofluorobenzene (SS)	92 %	83 %	83 %	70 - 130

U = Not detected above the specified reporting limit.

J = Estimated value.

NA = Compound not present.

* = Percent Recovery outside QC Limits

Stone Environmental Inc. Project Number: 112353
Laboratory Control Sample Summary

QC Batch: AF

Analysis Date: 09/01/2011

Method: SW8260B

Spike Amount: 20

Analyte	Lab Blank Conc. (ug/L)	LCS Conc.(ug/L)	LCS % Recovery	QC Limits (% Recovery)
Vinyl Chloride	2.0 U	20	100	70 - 130
1,1-Dichloroethene	2.0 U	21	103	70 - 130
trans-1,2-Dichloroethene	2.0 U	20	101	70 - 130
cis-1,2-Dichloroethene	2.0 U	20	100	70 - 130
1,1,1-Trichloroethane	2.0 U	19	95	70 - 130
Trichloroethene	2.0 U	23	117	70 - 130
Tetrachloroethene	2.0 U	21	104	70 - 130
Bromofluorobenzene (SS)	80 %	85 %	85 %	70 - 130

U = Not detected above the specified reporting limit.

J = Estimated value.

NA = Compound not present.

* = Percent Recovery outside QC Limits

*Stone Environmental Inc. Project Number: 112353
Laboratory Control Sample Summary*

QC Batch: AG

Analysis Date: 09/01/2011

Method: SW8260B

Spike Amount: 20

Analyte	Lab Blank Conc. (ug/L)	LCS Conc.(ug/L)	LCS % Recovery	QC Limits (% Recovery)
Vinyl Chloride	2.0 U	20	99	70 - 130
1,1-Dichloroethene	2.0 U	20	102	70 - 130
trans-1,2-Dichloroethene	2.0 U	20	101	70 - 130
cis-1,2-Dichloroethene	2.0 U	20	103	70 - 130
1,1,1-Trichloroethane	2.0 U	20	98	70 - 130
Trichloroethene	2.0 U	21	103	70 - 130
Tetrachloroethene	2.0 U	21	107	70 - 130
Bromofluorobenzene (SS)	92 %	87 %	87 %	70 - 130

U = Not detected above the specified reporting limit.

J = Estimated value.

NA = Compound not present.

* = Percent Recovery outside QC Limits

Stone Environmental Inc. Project Number: 112353
Laboratory Control Sample Summary

QC Batch: AH

Analysis Date: 09/02/2011

Method: SW8260B

Spike Amount: 20

Analyte	Lab Blank Conc. (ug/L)	LCS Conc.(ug/L)	LCS % Recovery	QC Limits (% Recovery)
Vinyl Chloride	2.0 U	20	101	70 - 130
1,1-Dichloroethene	2.0 U	22	108	70 - 130
trans-1,2-Dichloroethene	2.0 U	20	101	70 - 130
cis-1,2-Dichloroethene	2.0 U	19	94	70 - 130
1,1,1-Trichloroethane	2.0 U	20	101	70 - 130
Trichloroethene	2.0 U	24	120	70 - 130
Tetrachloroethene	2.0 U	23	114	70 - 130
Bromofluorobenzene (SS)	88 %	95 %	95 %	70 - 130

U = Not detected above the specified reporting limit.

J = Estimated value.

NA = Compound not present.

* = Percent Recovery outside QC Limits

5. INTEGRATED SITE INVESTIGATION SOLUTIONS

Integrated Site Investigation Solutions

Stone Environmental, Inc. (Stone) provides rapid-adaptive, high-resolution site characterization field service solutions to environmental consultants, companies, and government agencies. Our solutions consist of powerful, specialized technologies and techniques that enable site investigators to more effectively meet their clients' environmental challenges.

Stone provides vertical groundwater profiling services (Waterloo^{APS}™), NELAP-accredited onsite laboratory services (MobiLab™), characterization of rock environments via the discrete fracture network approach (CORE^{DFN}™), membrane interface probe (MIP) surveys, direct push technology (DPT) services, data management, and 2-D and 3-D visualization support.

Services

Waterloo Advanced Profiling System

The Waterloo^{APS}™ is a subsurface data acquisition system that collects both groundwater samples and an integrated set of companion data in a single, continuous direct push. Uniquely offered by Stone, the Waterloo^{APS} is a proprietary modification of the original Waterloo Profiler developed by Dr. John Cherry's research team at the University of Waterloo.

The Waterloo^{APS} is the premier tool for groundwater profiling because of its short vertical sampling interval and unique dual screen sampling port design. It captures with pinpoint accuracy the significant changes in contaminant concentrations that can occur in just centimeters, while reliably providing defensible quality groundwater samples.

MobiLab

Stone's MobiLab™ is a NELAP-accredited onsite analytical service that provides near-real-time, definitive, field-based analysis of volatile organic compounds

(VOCs) in groundwater, soil, and soil gas media. We generate, manage, and present fully defensible analytical chemistry data onsite, offering the subsurface investigation and remediation community a timely and extremely reliable product.

CORE Discrete Fracture Network Approach

CORE^{DFN}™ is a unique solution for investigating contamination in fractured, porous bedrock aquifers. Developed by Professor Beth Parker and her research team, CORE^{DFN} includes specialized techniques for sampling, rapidly extracting, and analyzing contaminants present within the rock matrix to assess the effects of diffusion of contaminants from fractures into the porous rock matrix and subsequently back out of the matrix and into the groundwater in the fractures.

Membrane Interface Probe

The MIP is a rapid screening tool for locating VOCs in the subsurface. Invented and manufactured by Geoprobe Systems®, the MIP collects real-time, vertically continuous data on the distribution of VOCs as well as subsurface electrical conductance.

Platform Environmental Drilling and Remediation Services

Platform™ specializes in direct push and rotary drilling methods and remedial system construction services, as well as the use of the membrane interface probe. Our services include continuous or discrete soil coring, discrete groundwater sampling, and hydrostratigraphic profiling.

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High-Resolution Site Characterization

Systematic Project Planning/Support

Waterloo APSTM
ADVANCED PROFILING SYSTEM

MobiLabTM
DEFENSIBLE REAL-TIME
ANALYTICS

CORE DFNTM
DISCRETE FRACTURE
NETWORK APPROACH

**Membrane Interface Probe
Geoprobe® Services**

Data Management & Visualization

Field Investigation Services



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