Remedial Investigation, Volume I

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

July 2015

SDMS Doc ID 581107

U.S. Environmental Protection Agency

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VOLUME II

Human Health Risk Assessment
Screening Level Ecological Risk Assessment

AC ACRONYMS AND ABBREVIATIONS

1×10^{-4}	1 in 10,000
1×10^{-6}	1 in 1,000,000
bgs	below ground surface
AIP	Alling Industrial Park
BTEX	benzene, toluene, ethylbenzene, and xylene
cfs	cubic feet per second
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
DCE	dichloroethylene
DNAPL	dense non-aqueous phase liquid
DO	dissolved oxygen
DPT	direct push technology
EPA	United States Environmental Protection Agency
FS	Feasibility Study
ft	feet
GPR	ground penetrating radar
Hager	Hager GeoScience, Inc.
HI	Hazard Index
HQ	Hazard Quotient
HHRA	Human Health Risk Assessment
I_K	index of hydraulic conductivity
K	hydraulic conductivity
MCL	Maximum Contaminant Level
MSL	Mean Sea Level
Mitec Systems	Mitec Systems Corporation
mg/Kg	milligrams per kilogram
mV	millivolts
NAPL	non-aqueous phase liquid
NERL	New England Regional Laboratory
Nobis	Nobis Engineering, Inc.
NPL	National Priorities List
ORP	oxidation-reduction potential

PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene
PDB	passive diffuser bag
PID	photoionization detector
PPM	parts per million
QAPP	Quality Assurance Project Plan
QC	quality control
RI	Remedial Investigation
RSLs	Regional Screening Levels
Site	Commerce Street Plume Superfund Site
SLERA	Screening Level Ecological Risk Assessment
SOP	standard operating procedure
SOW	statement of work
Stone	Stone Environmental, Inc.
SVOC	semi-volatile organic compound
TAL	Target Analyte List
TCE	trichloroethylene
TOC	total organic carbon
µg/L	micrograms per liter
µg/Kg	micrograms per kilogram
EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VOA	volatile organic analyte
VOC	volatile organic compound
VP	vertical profiling
VT ANR	Vermont Agency of Natural Resources
VT DEC	Vermont Department of Environmental Conservation
VT DOH	Vermont Department of Health
VT GWPR	Vermont Groundwater Protection Rule
XRF	X-ray fluorescence

1.0 INTRODUCTION

This Remedial Investigation (RI) Report was prepared by Nobis Engineering, Inc. (Nobis) for the U.S. Environmental Protection Agency (EPA) under Contract No. EP-S1-06-03, Task Order No. 0036-RI-FS-019L. This report presents the investigations and data evaluation activities conducted for the Commerce Street Plume Superfund Site (Study Area) located in Williston, Vermont (Figure 1-1). EPA will utilize this RI, which includes the Human Health Risk Assessment (HHRA) and a Screening Level Ecological Risk Assessment (SLERA), to produce a Feasibility Study (FS) to select a remedial alternative and prepare a Record of Decision (ROD) for the Study Area.

1.1 Work Assignment and Report Purpose

This RI report is based on available information and data collected by Nobis as well as investigations that were conducted by Potentially Responsible Parties (PRPs), Vermont Department of Environmental Conservation (VT DEC) and/or by EPA prior to the Site's inclusion on the National Priorities List (NPL) of Superfund sites in 2005.

The overall objective of the RI is to characterize the nature and extent of contamination and the risks posed by hazardous substances at the Site. Specific objectives of this RI were to:

- Compile and evaluate available Site data; obtain additional data required to adequately characterize the Study Area conditions.
- Determine the source and the nature and extent of contamination in the groundwater, surface water, soil, and sediment at the Site and in the surrounding areas.
- Assess the fate and transport conditions of Site contaminants.
- Evaluate the potential threats to human health and the environment within the Study Area through risk assessments.

1.2 Report Organization

This RI report was prepared in accordance with the *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (EPA/540/G-89-004; October 1988). The RI was performed consistent with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund

Amendments and Reauthorization Act (SARA) of 1986; and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

This report is organized as follows:

- Section 1 of the report provides a description of the Site and summarizes previous investigations;
- Section 2 presents details on the investigations performed at the Site by Nobis since 2008;
- Section 3 presents the site characteristics;
- Section 4 presents an evaluation of the nature and extent of contamination;
- Section 5 presents the contaminant fate and transport;
- Section 6 presents a summary of the baseline human health risk assessment and a screening level ecological risk assessment; and
- Section 7 presents a summary of the findings.

Appendices are attached to the document and provide additional information pertaining to the RI.

1.3 Site Background

This section describes the Study Area and surrounding area, as well as summarizes the operational history and environmental history of the Study Area

1.3.1 Site Location and Description

The Commerce Street Plume Superfund Site is located in Williston, Chittenden County, Vermont, four miles east of Burlington, Vermont (Figure 1-1). The Study Area encompasses the former 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 (Weston, 1998a). The Study Area is located within the Winooski River watershed at an elevation between 330 and 350 feet above mean sea level (MSL). The Study Area is roughly bounded to the north by Vermont State Route 2 (Williston Road), to the east by Harvest Lane, to the south by Omega Drive, and to the west by South Brownell Road (Figure 1-2). The final boundaries of the Site will be determined at the time of the ROD.

Current zoning allows 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 is entirely residential. South Brownell Road is residential with some commercial development. Public pedestrian access is unrestricted within the Study Area.

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 just east of Commerce Street that flows in a southerly direction into Tributary #4 to Muddy Brook. A small wetland area is associated with the confluence of the unnamed stream and Tributary #4 at the southern end of Commerce Street beyond the Study Area.

All surface waters in Vermont are State-designated areas for protection and maintenance of aquatic life under the Clean Water Act. The unnamed stream and associated wetlands were assessed for and found to be unlikely potential habitat for the two Vermont-listed threatened species – the eastern sand darter and eastern pearl shell mussel (Normandeau, 2004). No other rare, threatened, or endangered species have been identified (VT DEC, 2014). Downstream of the Study Area, Muddy Brook flows into the Winooski River, which is a known fishery.

On the western edge of the Study Area near the intersection of Shunpike and South Brownell Roads is an “unmapped intermittent stream” – a topographic depression with culverts in some areas that conveys intermittent groundwater discharge (VT DEC, 2014).

Compounds found in groundwater beneath the Study Area include trichloroethylene (TCE), tetrachloroethylene (PCE), benzene, toluene, ethylbenzene and xylene compounds (commonly referred to as BTEX), cadmium, and chromium. Previous studies identified three properties within the industrial park as locations of former manufacturing and/or fabrication operations that could have contributed to groundwater contamination. Refer to Figure 1-2 for the location of parcels identified by lot numbers in the discussion below and throughout this report.

1. **Lot 7:19:11 (Former Mitec Systems property/96 Commerce Street)**: The property formerly leased by Mitec Systems Corporation (Mitec Systems) occupies one acre and currently includes one 6,000 square foot building. Mitec Systems manufactured electronic

and microwave components. After an employee complaint was received in 1982, the Vermont Agency of Natural Resources (VT ANR) inspected the facility and found Mitec Systems in violation of hazardous waste regulations regarding chromium-contaminated waste disposal (Weston, 1998a). Two potential sources were identified on this parcel during the VT ANR (now Vermont Department of Environmental Conservation or VT DEC) investigations: an unlined wastewater disposal lagoon behind the building and a leach field next to it. The leach field was reportedly for sanitary use only however, a significant TCE plume appears to be emanating from it.

2. **Lot 8:19:12 (Bove-Fagan property/87 Commerce Street)**: Two underground storage tanks were removed from this lot in 1994 revealing a previous release of BTEX compounds. Groundwater samples from shallow monitoring wells at the property contained elevated BTEX concentrations.

3. **Lot 8:19:2 (Former EMCO property/63 Commerce Street)**: Manufacturing operations began in 1947 and both a disposal pit and two outfall pipes protruding into the bank of the unnamed stream were identified in the back (eastern portion) of the property. Only Shelburne Industries, a tenant that manufactured sporting goods from 1958 to 1961, is thought to have used chlorinated solvents at this location (TRCC, 1993). Between 1995 and 1997, approximately 25 cubic yards of soil were removed from the former disposal pit and another 30 cubic yards of sediment removed from the adjacent stream by the landowner (Weston, 1998b).

In September 2004, EPA proposed the Commerce Street Plume Site for the NPL (a.k.a., “Superfund”) based on the occurrence of contaminants, in particular TCE, in the groundwater. It was placed on the NPL in April 2005.

1.4 Site History

Development in the AIP started in 1946 when Alling Enterprises began manufacturing cup hooks and caster caps on Lot 8:19:2. Aerial photographs from 1937 show a vegetated area with a dirt road (later Commerce Street) surrounded by agricultural land (EPA, 2008). Since then, AIP has had and continues to have various light industrial and commercial tenants.

In 1960, George and Beatrice Alling developed and leased Lot 7:19:11 (96 Commerce Street) to the Sunshine Biscuit Company for use as a warehouse and distribution center until 1972. In 1972, an unlined lagoon was excavated and used until 1977 by Qual Tech (1972- 1974) and North American Alloys (1974-1977) for on-site disposal of wastewater (NUS, 1987). Garmont International operated a ski boot warehouse and distribution center on the property from 1977 to 1979. In 1979, Mitec Systems leased the property and for the next five years discharged an undetermined quantity of rinse waters and sludge wastes containing chromium, cadmium, cyanide, nickel and industrial solvents associated with electroplating operations through a pipe that had been installed from the building directly to the unlined lagoon (Weston, 1998a). In addition, although the leach field was reportedly for sanitary use only, a TCE plume that appears to be emanating from it suggests that it was also used for the disposal of industrial degreasers. After a Mitec Systems employee expressed concern to the VT ANR in March 1982, the State found the company in violation of hazardous waste regulations for the disposal of chromium contaminated wastes. Contaminated soil was removed from the lagoon in 1985 and 1989.

In 1984, chromium was detected in groundwater in monitoring wells installed by Mitec Systems downgradient of the lagoon. In July 1985, sampling by Vermont Department of Health (VT DOH) showed six residential private drinking water wells downgradient of the lagoon and leach field to be contaminated with TCE and PCE at concentrations above federal maximum contaminant levels (MCLs) for drinking water. The 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 were detected starting in 1989 in the indoor air of six South Brownell Road residences. Monitoring was subsequently discontinued for most of these locations after the risk posed by indoor air was determined to be minimal. The residence with the highest TCE concentrations was investigated further in 1996. The residence had a continuously operating sump pump that removed groundwater that accumulates in a sump beneath the basement floor. According to the VT DEC, 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 (HSI GeoTrans, 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 µg/L and 660 µg/L, respectively, throughout the former AIP. In 1996, soil samples collected for the VT DEC identified TCE concentrations up to 1,790 µg/Kg directly downgradient of the leach field located at the Mitec Systems property (Binkerd, 1996). Additional studies detected dichloroethene (DCE) concentrations of up to 180 µg/L, chromium at 3.4 µg/L, TCE at 170 µg/L, and vinyl chloride at 11 µg/L in a surface water sample collected from the stream and associated wetlands.

In 1999, groundwater samples taken by the VT ANR found TCE in groundwater at levels as high as 90,000 µg/L downgradient of the former Mitec Systems facility. In 2002, EPA detected elevated levels of 11 volatile organic compounds (VOCs) and 13 metals in monitoring wells located throughout AIP and surrounding residential areas.

Groundwater contamination continues to be detected in the area surrounding the 96 Commerce Street property. Public water is supplied throughout the Study Area and there are no current exposures. However, because the groundwater has a Vermont Class III designation, it has the potential to be used as a source of drinking water. If a water well is drilled within the plume, any users could be exposed to contaminated groundwater.

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 and to a lesser extent PCE, were found to be the most widespread and are present throughout the Study Area groundwater contaminant plume. The VT DEC Site Investigation (Binkerd, 1996) determined that metals contamination was confined to the areas near 96 Commerce Street (Mitec Systems property) 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. Samples collected during this remedial investigation confirmed the localized occurrence of metal contamination in groundwater.

1.5 Previous Investigations and Remedial Actions

Many environmental investigations in and around the former AIP were conducted prior to the Site being placed on the NPL in 2005. They focused primarily on groundwater and the impacts of contamination on private drinking water supplies, indoor air, and surface water. These studies were conducted by, and in some cases under the auspices of the State of Vermont, as well as

EPA's site assessment program. Presented below is a chronological summary of previous environmental investigations and remedial actions that guided EPA's remedial investigation, which began in 2008. Refer to Figure 2-1 for the location of all groundwater monitoring wells discussed below and throughout this report.

- December 1984: Mitec Systems 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 the Mitec Systems property. The wells were installed to a maximum depth of 17 feet below ground surface (ft bgs) and sampled for heavy metals and VOCs.

- March – May 1985: Mitec Systems hired a contractor to remove material from the bottom and sides of the wastewater lagoon. Approximately 30 cubic yards of material was transported off site and disposed of by hazardous waste haulers licensed in the State of Vermont.

- June – July 1985: VT DOH surveyed private potable water supply wells on South Brownell Road and found them to be contaminated with TCE and PCE above federal and state drinking water standards. All residences were subsequently connected to the Williston public water supply system.

- July 1985 – January 1986: Vermont Agency of Environmental Conservation (VT AEC) installed wells AL-1 through AL-21, expanding the groundwater monitoring network along Commerce Street and into the residential neighborhoods on Kirby Lane and South Brownell Road.

- March 1986: Based on data collected from the 30 monitoring locations, VT AEC delineated four discrete plumes of groundwater contamination (TCE, PCE, chromium and cadmium) directly downgradient of the former wastewater lagoon. VT AEC identified a fifth plume (also TCE) which it attributed possibly to the disposal practices of other entities currently or formerly operating in the industrial park and recommended additional subsurface investigations.

- March 1987: A Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Preliminary Assessment (PA) of the Mitec Systems facility was completed for EPA. Additional investigations to identify all potential sources of contamination in the AIP, and further define the extent of groundwater contamination resulting from Mitec Systems' past waste disposal practices, were recommended.

- February 1989: VT DEC completed a PA of the AIP and recommended further investigation of the Study Area, including suspected contamination on Lot 8:19:2 (former EMCO).

- April 1989: VT DEC began a multi-year study of indoor air in six residences (three each on Kirby Lane and South Brownell Road) recommended by VT DOH to determine if any off-gassing of volatile constituents in groundwater was entering and accumulating in homes. It was later determined that only one of the six residences was impacted, and a mitigation system was installed.

- July 1990: A site investigation was conducted for Lot 7:19:20 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.

- July 1993: A site investigation of the AIP was conducted for EPA. The primary focus was Lot 8:19:2 (former EMCO). Limited sampling and analysis did not identify a source for the TCE contamination along Commerce Street.

- July 1993: A site investigation was conducted for Lot 7:19:5 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 adjacent Mitec Systems.

- September 1994: A site investigation was performed on Lot 7:19:23. 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: A site investigation was performed on Lot 8:19:12 (Bove-Fagan) in response to a petroleum release. Shallow monitoring wells were installed and analysis revealed the presence of BTEX contamination in groundwater.

- July 1995: A site investigation was performed on Lot 7:19:30 on behalf of a financial institution. Monitoring wells NO-1 through NO-4 were installed and sampled. TCE was detected in groundwater at concentrations up to 19,000 µg/L.

- October 1996: A site investigation was performed on behalf of VT DEC to further delineate the nature and extent of contamination in the AIP. Several monitoring wells were installed, and TCE-contaminated groundwater under the Mitec Systems leach field was identified.

- December 1997 to January 2000: HSI GeoTrans performed a site investigation within the former AIP and adjacent residential areas on behalf of Mitec Systems, under the direction of VT DEC. Results confirmed the presence of PCE, TCE and BTEX-contaminated groundwater, surface water and sediments throughout the area. It also identified Mitec Systems' leased property (Lot 7:19:11) and a depression in the clay layer beneath Lot 7:19:23 as likely sources of groundwater contamination (HSI GeoTrans, 2000).

- July 1999: A limited groundwater investigation was completed by the Johnson Company (Johnson, 1999) for the VT DEC. TCE was the primary contaminant noted at negligible concentrations at shallow depths but increasing with depth to concentrations up to 91,000 µg/L. Because TCE concentrations were orders of magnitude above the solubility limit, the presence of non-aqueous phase liquids (NAPL) was suggested as a possibility.

- April 2003: The Expanded Site Inspection Draft Summary Trip Report was completed by Weston for EPA. Soil, sediment, surface water, and groundwater samples were collected. This comprehensive report, and a wetland and habitat assessment completed in July 2004, formed the basis for EPA's decision to propose in September 2004 the former Alling Industrial Park and surrounding area for the NPL. In April 2005, the Site was placed on the NPL, making it eligible for remediation under the federal Superfund program.

1.6 Superfund Remedial Investigations

Below is a summary of the environmental investigations conducted for the remedial investigation (RI), each of which is discussed in detail in the following sections of this report. The purpose of the RI is to determine the nature and extent of contamination at the site, and, assess the potential for risk to human health and the environment from those site conditions. This information is subsequently used to develop, screen, and evaluate alternative remedial actions, which are presented in the Feasibility Study (FS).

- November-December 2008: Nobis conducted a well survey to locate historical 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 (Nobis, 2009b) and Conceptual Site Model (Nobis, 2009a). Findings presented in the report include water quality conditions indicating that most of the TCE resides in the deep overburden groundwater. The report also presents groundwater flow directions and subsurface geological conditions.

- May-November 2010: Nobis conducted an extensive field investigation consisting of a ground-penetrating radar (GPR) and seismic geophysical survey, porewater sampling of the stream, groundwater vertical profiling to characterize VOC concentrations, soil boring and dense NAPL (or DNAPL) testing, monitoring well installations, and a full round of groundwater monitoring well sampling. Nobis presented the results of these investigations with an updated conceptual site model in a 2010 Data Summary Report (Nobis, 2011a). Findings presented in the report include more detailed groundwater quality information with respect to plume delineation in addition to the discovery of a second TCE hot spot at the western edge of the Study Area. Additional findings included the detection of TCE in porewater discharging into the stream on the eastern boundary of the Study Area, depths to various stratigraphic units as determined by the geophysical survey, and identified data gaps that were addressed in future investigations.

- August-September 2011: Nobis conducted groundwater investigations, which included vertical profiling to collect groundwater samples and Waterloo Advanced Profiling System™ (Waterloo™) sampling to also collect groundwater samples and determine relative hydraulic conductivity. 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 within 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 layers so that a water sample could be collected. Samples were collected from 26 vertical profiling locations. Samples were sent to EPA's on-site mobile laboratory for VOC screening and the results used to determine additional sample locations. A subset of samples was sent off site to a fixed lab for confirmatory analyses of VOCs, dissolved and total metals, and 1,4-dioxane.

Eight Waterloo™ profiling locations were sampled along Commerce Street and on adjacent residential properties. For both the vertical profiling and Waterloo™ profiling, a groundwater sample was collected every five feet until the top of the clay layer was encountered. The groundwater samples were submitted to an on-site mobile laboratory for VOC screening. In addition to groundwater samples, geochemical parameters (e.g., pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP)) and the index of hydraulic conductivity (I_K) were continuously recorded with depth during profiler advancement between sample locations within a borehole.

Additional groundwater elevation measurements were collected in October 2011 from monitoring wells across the site to support a more detailed evaluation of the potentiometric surface.

- June-August 2012: Nobis collected groundwater samples from 17 monitoring wells in June for analysis of VOCs, semivolatile organic compounds (SVOCs), and metals. In addition, soil samples were collected from six soil borings in August and sent for analysis of VOCs, SVOCs and metals to fill data gaps from the 2011 sampling effort.

- June 2012-January 2013: EPA collected indoor air and sub-slab soil vapor samples from five residential and two commercial buildings. The results of this investigation did not show a complete vapor intrusion pathway and no contaminants associated with the Site were detected above conservative EPA risk based screening levels.

- September 2012: EPA collected surface water, sediment and aquatic invertebrate samples within the stream on the eastern boundary of the Study Area to evaluate the potential for ecological risk (see RI Volume II).

- January 2013: Nobis conducted slug tests at five monitoring wells to characterize areas without previous hydraulic conductivity (K) data.

- December 2013: Nobis performed two additional soil borings in the area of the former Mitec Systems lagoon and one at the corner of South Brownell Road and Shunpike Road to determine what fraction, if any, of the chromium previously detected in soil is present in the hexavalent form.

- July 2014: Nobis performed hand-auger soil borings and basement sump water sampling at several residential properties located on South Brownell Road and Kirby Lane to determine if contaminated water was entering the basements and if so, if the contaminated water being discharged is impacting the surface soils on the properties. The borings were located in areas proximate to the discharges from sump pumps, as identified by residents of those dwellings. In addition, air samples were collected at selected residences.

  Additional indoor air sampling was performed in July 2014 following VT DEC remedial work at the residential property located at 830 South Brownell Ave (Lot 7:3:23). Grab samples from the first floor and the basement were collected and screened in the field. Additional 24-hour Summa canister samples were collected with the windows and doors of the home closed for the entire period.

2.0 INVESTIGATIONS

The following section summarizes the field investigation and characterization activities conducted in support of the RI. Sections 2.1 through 2.4 pertain only to field investigation performed by Nobis for EPA. Subsequent investigations conducted by VT DEC are discussed in Section 2.4.16. Data from investigations conducted prior to the Site's listing on the NPL either by or under the auspices of VT DEC are not included herein, but these data were considered in the evaluation of the nature and extent of contamination (Section 4 of this report).

2.1 Field Investigations and Technical Approach

As described in Section 1.5, numerous investigations had been undertaken at the Site by the property owners, and by VT DEC prior to EPA's involvement.

Under the direction of EPA, Nobis performed several field sampling efforts that were described in Annual Data Summary Reports (Nobis 2009b and 2011a) to document the nature and extent of contaminants and support the FS process, the HHRA, the SLERA and this RI report.

2.2 Chemical Analysis and Analytical Methods

Each of the samples described in Section 2.3 below was analyzed in accordance with methods specified in the approved Site-Specific Work Plans and Quality Assurance Project Plans (QAPP) (Nobis, 2008a, 2008b, 2010, 2011b and 2012, respectively). Tables 2-1 through 2-11 present summaries of the samples collected by environmental medium as part of the remedial investigation.

2.3 Field Methodologies

During the course of the RI field investigation, samples were collected from surface and subsurface soil, overburden groundwater, sediment, sediment porewater, and surface water in accordance with the Site-Specific QAPPs. Macro invertebrate, indoor air and soil vapor samples were collected by EPA in support of the HHRA and SLERA. Section 2.4 describes the means and methods used to collect the samples. Monitoring well installation and construction summaries for previously installed wells and wells installed by Nobis are included in Table 2-12. Boring logs from previous investigations and from the RI fieldwork are provided in Appendix A and Appendix B, respectively.

2.4 Environmental Media Sampling

The following sections discuss environmental field investigations and sampling events that occurred in support of the remedial investigation.

2.4.1 2008 Groundwater Sampling

A field survey to locate and assess the condition of existing groundwater monitoring wells was conducted in November 2008. A total of 23 viable monitoring wells (12 shallow overburden, 10 deep overburden, and one in glacial till screened directly above bedrock) were re-developed and sampled during the week of December 14, 2008. Groundwater monitoring well locations are depicted on Figure 2-1. The findings were used to develop a Conceptual Site Model (Nobis, 2009a) and are presented in a Data Summary Report (Nobis, 2009b).

The sample collection, handling, preservation, and shipping were conducted in accordance with the QAPP (Nobis, 2008b) and addendum dated December 12, 2008. Groundwater sampling was performed in accordance with the EPA Region 1 procedure for low stress (low flow) sampling (EPA, 2010).

Table 2-1 presents a list of all groundwater samples collected during the December 2008 sampling round. The sample identification, dates of sample collection, quality control (QC) designation (as appropriate), and the analyses performed are listed. Field log sheets are provided in Appendix C. Complete analytical results are provided in Appendix D-1 (groundwater VOCs) and Appendix D-2 (groundwater non-VOCs).

Peristaltic pumps were utilized for purging and collecting groundwater samples during the December 2008 round. Teflon or Teflon-lined polyethylene tubing was used and left in the wells after sampling for future sampling events.

Investigation-derived waste (IDW) was temporarily stored in 30-gallon polyethylene and 55-gallon steel drums at the former Mitec Systems property. The drums were picked up for off-site disposal and treatment on January 21, 2009 by ENPRO Services, Inc. of Williston, Vermont. A total of 150 gallons of water was generated during the December 2008 groundwater sampling event.

All the monitoring wells were sampled for VOCs and SVOCs analyses using the Contract Laboratory Program (CLP) Routine Analytical Services (RAS) Statement of Work (SOW) SOM01.2 and for target analyte list (TAL) total and dissolved metals using the RAS SOW ILM05.4. Fifteen samples were analyzed for polychlorinated biphenyls (PCBs) analysis using the RAS

SOW SOM01.2 and for dioxins/furans using the SOW DLM.02.0 during December 2008 (Nobis, 2008b).

2.4.2 2010 Geophysical Survey

From June 7 to June 17, 2010, a geophysical survey was performed by Hager GeoScience, Inc. (Hager) of Woburn, Massachusetts with the objective of identifying the depth to the clay and bedrock surfaces throughout AIP and adjacent residential areas. The survey primarily used low frequency GPR and seismic reflection/refraction methods. The information was subsequently used to help select locations for groundwater vertical profiling and soil boring/monitoring well installation locations.

In all, 27 GPR transects totaling 9,093 feet and four seismic profiles totaling 3,335 feet were made in the project area. Figure 2-2 displays the GPR and seismic transect lines. The Hager report is provided as Appendix E.

2.4.3 2010 Porewater Sampling

Porewater samples were collected from areas identified as potential infiltration points of groundwater into the stream at the eastern boundary of the Study Area. All sample collection, handling, preservation, and shipping were conducted in accordance with the QAPP (Nobis, 2008b) and addendum dated December 12, 2008. Table 2-2 presents the porewater sample identification and analyses performed.

On June 28 and June 29, 2010, Nobis performed temperature profiling throughout the stream to identify potential groundwater infiltration points along the stream channel. Measured temperature differences between porewater and surface water ranged from 1.9 degrees Celsius (°C) to 9.8°C. The average temperature variation was 6.1°C. Variations in the temperature of porewater and surface water can indicate whether a stream is receiving groundwater, or discharging to groundwater. Porewater temperatures closer to ambient groundwater temperatures suggest that groundwater is discharging to the stream in that area. Measurements at or greater than the average variation of 6.1°C were considered potential groundwater infiltration points. Temperature variations for the final porewater sample locations are included in Appendix F.

On July 7 and July 8, 2010, porewater samplers were placed in the potential infiltration locations as well as other evenly distributed locations to cover the stream channel, for a total of 20 locations (PW-1 through PW-20). Porewater sample locations are depicted on Figure 2-3.

A 3-inch diameter stainless steel hand auger was used to create borings to depths ranging from 12 to 18 inches below the bottom of the stream channel. Passive diffuser bags (PDBs) were then placed in each boring by hand and tied to a wooden stake for retrieval. The PDBs are 2 inches in diameter when full and were filled with deionized water in the field prior to each installation. The PDBs were enclosed in a hard plastic mesh to protect against puncturing. Once the PDBs were installed, the boring was filled in with native material and the PDBs were allowed to equilibrate for 14 days. On July 22, 2010, 25 porewater samples including quality control samples were collected and submitted for CLP analysis of VOCs. In addition, 22 samples were provided to the EPA mobile laboratory for screening of a selected group of VOCs including cis-1,2-DCE and TCE. These results are discussed on Section 3.2 and are included in Appendix D-1 (Groundwater VOC Results) and Appendix D-2 (Groundwater non-VOC Results).

The porewater sampling was performed in accordance with the Site-Specific Porewater Sampling Standard Operating Procedure (SOP) (Nobis, 2010). Data from porewater sampling was used to assess the potential impact of groundwater on the stream.

2.4.4 2010 Groundwater Vertical Profiling

Groundwater vertical profiling was conducted to collect “grab” (e.g., non-stabilized) groundwater samples from multiple depths at each location. No soil samples were collected during the profiling activities. The samples were collected by driving a direct-push technology (DPT) dual-tube casing and Macrocore sampler to the target depth, removing the Macrocore sampler and replacing it with a 12 inch long, ¾ inch diameter, 0.0010 ft slotted schedule 40 PVC screen, and retracting the outer casing to the top of the screen. Once the screen was exposed, a peristaltic pump was used to collect the sample. The groundwater profiling results were used to construct initial TCE plume maps, which are included in Appendix G. The only change in stratigraphy noted during the vertical profiling was the assumed clay contact, which was represented by an inability to pump water. All sample collection, handling, preservation, and shipping were conducted in accordance with the QAPP (Nobis, 2010). Table 2-3 presents the 2010 vertical profiling sample identification, sample

depths and analyses performed. Sample results are provided in Appendix D-1 and Appendix D-2 and discussed in Section 3.3.

From July 12 to July 24, 2010, samples were collected from 26 vertical profiling locations throughout AIP and adjacent private properties. From August 23 to August 25, 2010, groundwater samples were collected from an additional five locations. All 2010 vertical profiling locations (VP-01 through VP-31) are shown on Figure 2-4. Upon collection, one 40-milliliter (mL) volatile organic analyte (VOA) vial was transferred to the on-site EPA mobile laboratory for screening analysis of select VOCs including the primary VOCs of interest, TCE and PCE. A total of 178 samples were collected for VOC screening. As results became available from the EPA mobile laboratory, representatives from Nobis and EPA held discussions to determine the most appropriate locations of subsequent profiling locations in order to maximize coverage and to effectively delineate the extent of contamination.

Three additional 40 mL vials were collected and held, pending the results from the EPA mobile lab. Based on these results, roughly one interval per profile location (generally the interval with the highest TCE concentration) was selected for confirmation analysis by an EPA CLP laboratory for the full suite of VOCs. A total of 57 samples were sent for CLP VOC confirmation analysis and 12 samples were collected for laboratory analysis of metals.

The vertical profiling points were advanced to the assumed top of the clay layer encountered at depths ranging from 36 ft bgs to 54 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. Sample log sheets are provided in Appendix C.

2.4.5 2010 Soil Boring Advancement and Sampling

From August 25 to August 27, 2010, seven soil borings (SB-01 through SB-07) were advanced via Geoprobe® direct push technology in the locations displayed in Figure 2-5, in accordance with the QAPP (Nobis, 2010). Sample identification and depths are provided in Table 2-4. Samples from SB-07 were not sent for VOC analysis. The purpose of the soil borings was to study subsurface conditions (e.g., lithology, water table location, etc.) and to look for evidence of DNAPL. Locations were chosen based on the geophysical survey and groundwater vertical

profiling results. SB-02 and SB-03 were selected to provide further stratigraphic and chemical information at locations where the highest TCE concentrations were encountered during vertical profiling. SB-05 was chosen to explore conditions adjacent to the unnamed stream; and SB-01 and SB-06 was chosen to explore suspected source areas based on historical results. SB-07 was chosen to evaluate soil stratigraphy within the residential area. At each location, Macrocores® (five feet long and two inches in diameter) were advanced and collected continuously from the ground surface to the top of the clay layer (approximately 40 ft bgs). Several locations were advanced two to three feet into the clay to confirm the depths reported in the Hager report (Appendix E).

Upon retrieval of the cores, information related to the volume of material recovered, lithology, and photoionization detector (PID) readings were recorded on the appropriate field logs (Appendix C). In one location (SB-02/S-8) where the PID reading was greater than 100 parts per million (ppm), the Oil-Red-O shake test (Nobis, 2012) was performed to confirm the presence/absence of NAPL at that location. Finalized boring logs are included in Appendix B.

A total of 48 soil samples were collected and submitted to the on-site EPA mobile laboratory for screening analysis of TCE, PCE, and cis-1,2-DCE. For risk assessment purposes, in the first 0-5 ft bgs core, one sample was collected from 0-1 ft bgs at the interval displaying the highest PID reading; a second sample was collected from 1-5 ft bgs at the interval displaying the highest PID reading. One additional sample from each subsequent core deeper than 5 ft bgs was collected at the location displaying the highest PID reading. Due to running sand conditions, samples were not retrieved from 25 to 40 ft bgs in SB-01 and from 30 to 40 ft bgs in SB-04. The results of this analysis are discussed in Section 4.

2.4.6 2010 Monitoring Well Installation

From November 9 to November 12, 2010, 15 overburden monitoring wells were installed utilizing direct push methods throughout AIP and the adjacent residential areas. These “MW” series wells are shown in Figure 2-1. On November 23, 2010, well MW-8S was replaced since the initial well was not set at the proper depth. The purpose of the wells was to address data gaps identified by the previous 2010 investigations and to help delineate the extent of groundwater contamination. Prior to mobilization, representatives from Nobis, EPA, and VT DEC discussed and approved the proposed well locations.

The wells consisted of two shallow overburden (< 20 ft bgs), five intermediate overburden (20-30 ft bgs), and eight deep overburden (> 30 ft bgs). All wells were constructed using 2-inch diameter schedule 40 PVC with five feet of 0.010-inch slotted pre-pack sand pack screen. Due to the presence of running sands and silts, pre-pack screens were used to help minimize screen clogging and eliminate any potential for hole-collapse that may occur while pulling steel casing from the hole. Table 2-12 presents well construction details for the new wells and well construction logs are included in Appendix B.

2.4.7 2010 Groundwater Sampling

Two rounds of groundwater sampling were conducted in 2010. All groundwater samples were collected using EPA low-flow sampling protocols in accordance with the QAPP (Nobis, 2010). As part of the low-flow sampling protocol, geochemical parameters were recorded for temperature, pH, conductivity, DO, ORP and turbidity with the applicable meters. Appendix F includes the results of the final geochemical parameter reading prior to sample collection for both rounds. Sampling details for each round are provided below.

From May 17 to May 21, 2010, 29 groundwater samples (including duplicates) were collected from 27 monitoring wells. The wells consisted of 13 shallow overburden, six intermediate overburden, seven deep overburden and the one glacial till well. In addition to the 23 wells sampled previously in December 2008, groundwater samples were collected from four additional wells (AL-2, AL-12, ASI-3D2, and AIP-01) discovered on-site during the May event. The groundwater samples were submitted for CLP analysis of VOCs, SVOCs, and TAL metals (total only). May 2010 groundwater sampling details are summarized in Table 2-5. Sample field log sheets are located in Appendix C.

From November 28 to December 3, 2010, 45 groundwater samples (including duplicates) were collected from 42 monitoring wells. The wells consisted of the 27 wells sampled in May in addition to the 15 newly installed wells described in Section 2.4.6. The groundwater samples were submitted for CLP analysis of VOCs, SVOCs and TAL metals (total only). Additionally, samples from each well were collected and submitted for 1,4-dioxane analysis to EPA's New England Regional Laboratory (NERL) in Chelmsford, Massachusetts. November 2010 groundwater sampling details are summarized in Table 2-6. Sample log sheets are located in Appendix C.

2.4.8 2011 Vertical/Waterloo Profiling Sampling

When used in conjunction with the data collected in 2010, 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 in three dimensions and to delineate the clean boundaries of the plume. The groundwater profiling consisted of two methods: vertical groundwater profiling used to collect grab groundwater samples (as described in Section 2.4.4) and Waterloo™ sampling. The Waterloo™ sampler measures the relative hydraulic conductivity (Ik) continuously as the probe is advanced, and is used to collect point groundwater samples. All 2011 vertical profiling locations are shown on Figure 2-4. Sample logs for the groundwater profiling are provided in Appendix C. Complete analytical results are included in Appendix D-1 and D-2. The Waterloo™ sampling logs are provided in Appendix H. Soil sample logs are not available as soil is not brought to the surface during the vertical profiling activities.

From August 15 to 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 residential properties. On August 31 and September 1, 2011, the Waterloo™ profiling was conducted (WP-01 through WP-08). On October 4 and 5, 2011, groundwater samples were collected from an additional four locations (designated as VP-55 through VP-58). The vertical profiling samples are summarized in Table 2-7. Table 2-8 summarizes the Waterloo™ profiling samples.

During the week of August 15, 2011, upon collection, one 40 mL VOA vial from each profiling interval was transferred to the on-site EPA mobile laboratory for screening analysis of select VOCs including 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, roughly one sample (at a pre-determined depth) per profile location was collected and sent off site to EPA's NERL for confirmation analysis of the full suite of VOCs.

During the week of August 22, 2011, all vertical profile samples required the collection of four preserved 40 mL VOA vials, which were sent to EPA's NERL for screening analysis.

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 H in their "Data Package for Waterloo™ Profiling and MobiLab Services". Similarly, with EPA's mobile laboratory, one additional sample (at a pre-determined depth) per profile location was collected and sent off-site to NERL for full-suite confirmation analysis of the full suite of VOCs.

In addition to VOCs, during the weeks of August 15 and 22, 2011, 16 samples (including one duplicate) for total and dissolved metals and 16 samples (including one duplicate) for 1,4-dioxane were collected at pre-determined depths. All samples were shipped to and analyzed by EPA's NERL.

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.

2.4.9 2012 Groundwater Sampling

Groundwater samples were collected from 17 wells between June 5 and June 7, 2012 using low-flow sampling techniques. Groundwater samples (including QC samples) were submitted for laboratory analyses of VOCs and total TAL metals. In order to support the RI and FS Reports, groundwater samples were also analyzed for geochemical parameters to evaluate the effectiveness of various remedial technologies including, but not limited to, monitored natural attenuation, bioremediation, and chemical oxidation. The parameters included sulfide, total organic carbon (TOC), volatile fatty acids (VFAs), ethane/ethane/methane, carbon dioxide, alkalinity, nitrate, sulfate, and chloride. These parameters were collected concurrently from six of the 17 monitoring wells. Table 2-9 summarizes the 2012 groundwater samples collected. Analytical results are tabulated in Appendix D-1 and Appendix D-2.

2.4.10 2012 Soil Sampling

Additional soil samples were collected in August 2012 to evaluate data gaps presented in the 2011 Data Summary Report (Nobis, 2011a). The samples were advanced using DPT. Table 2-10 summarizes the 2012 soil samples, including sample identification, depths sampled and analyses. The full analytical results are tabulated in Appendix D-3 (soil).

Nobis advanced four soil borings (SB-12-1 through SB-12-4; see Figure 2-5) to depths ranging from 35 to 45 bgs in the area west of South Brownell Road, which the groundwater profiling identified as a previously unmapped area of elevated concentrations of VOCs. The borings terminated two to three feet into the known clay layer at the Study Area. Every four to five feet, a soil sample was collected for laboratory analysis of VOCs, SVOCs and metals for a total of eight samples per boring (for a total of 34 samples collected in this area). Additionally, upon retrieval, each core was screened for VOCs with a PID and the soil was characterized and inspected for the presence of NAPL. If PID readings were greater than 100 ppm, the samples were tested for the presence of NAPL using the “Oil Red O Test” procedure.

In addition, two soil borings (SB-12-5 and SB-12-6) were advanced using direct-push drilling in the area of the lagoon on the former Mitec Systems property, above the metals plume. At each location, samples were collected from up to three intervals: 0-1 foot bgs, 2-4 ft bgs, and just above the water table (from 5 to 6 ft bgs). A total of seven samples were analyzed for VOCs, SVOCs and metals. The soils were screened and characterized in the same fashion as those located along South Brownell/Shunpike Road.

2.4.11 2012 Indoor Air and Subslab Sampling

In order to evaluate the potential for the transport of volatile compounds from contaminated groundwater at the Study Area, EPA sampled sub-slab soil gas and indoor air at five residential and two commercial properties in June 2012 and January 2013. These seven properties were selected as representative of those most likely to be impacted (e.g., proximity over shallowest and/or most contaminated portions of the groundwater plume) or with sensitive populations (e.g., children, elderly). The results do not show a complete vapor intrusion pathway, and no contaminants associated with the Site were detected above conservative risk-based screening levels. The results of this assessment are summarized in Section 6.0.

2.4.12 2012 Aquatic Invertebrate Sampling

In September 2012, an EPA team collected aquatic invertebrate, surface water and sediment samples from the stream on the eastern boundary of the Study Area. The objectives were to determine if the invertebrate community structure and function in the stream at different sampling stations was affected by groundwater-impacted discharges from the Study Area, and if any observed differences in the invertebrate community could be attributed directly to the presence of site-related contaminants in surface water and/or sediment.

Benthic samples were collected from five sample locations in the stream, coinciding with the five surface water/sediment locations discussed in the following section. In an effort to collect infaunal invertebrates (i.e., benthic fauna living in the sediment substrate), four replicate sediment samples were collected in the vicinity of each sample location using a percussion sediment corer. Sediment was retrieved four times at each replicate sample location, and then placed in a sieve bucket to rinse out the fines and collect the benthic invertebrates. They were placed into a sample jar with a preservative of 70 percent ethanol.

EPA prepared a SLERA based on the results of these investigations. The results of the SLERA indicated that site contaminants entering the surface water pose no significant ecological impacts to aquatic macroinvertebrates. The SLERA is included in RI Volume II.

2.4.13 2012 Sediment and Surface Water Sampling

EPA collected surface water and sediment samples from five locations at the unnamed stream in September 2012 (Figure 2-6). The results of these activities samples were used in support of the ecological risk assessment (TechLaw, 2012). Sample details are provided in Table 2-11. Complete surface water and sediment results are provided in Appendix D-4 and Appendix D-5, respectively.

Surface water at each sample location was measured for temperature, pH, dissolved oxygen, and specific conductance. One set of readings was taken at the center of the stream with the probe halfway down the water column. Two surface water samples were collected at each sampling location to support VOC analysis as well as chloride analysis.

EPA collected sediment samples from the same stations as the surface water samples. Two VOC samples were collected from each location to support the analysis of VOCs and moisture content. Sediment for the remaining analyses, SVOCs, metals, and TOC was collected from three 6-inch holes at each location and homogenized prior to placement in sample containers.

2.4.14 2013 Hydraulic Conductivity Testing

In January 2013, Nobis conducted slug tests in five monitoring wells to determine hydraulic conductivity: BR-1, MW-6M, MW-7M, MW-8S, and MW-11S. The slug testing was conducted in accordance with Nobis SOP NEISOP-17. Rising and falling head tests were performed for all wells except for BR-1, which recovered too slowly to allow for complete stabilization and performance of a rising head test. Slug testing was performed by inserting (falling head) and removing (rising head) a 1.25-inch PVC rod. Hydraulic conductivity was determined using the Bouwer and Rice method using AQTESOLV.

2.4.15 2013 Chromium Speciation Soil Boring

In December 2013, three additional soil borings were advanced at the Site; two in the footprint of the former lagoon area at 96 Commerce Street and the third at the southwestern corner of South Brownell Road and Shunpike Road (see Figure 2-5). It was intended that the borings were performed as close as possible to previous borings containing elevated concentrations of total chromium to help clarify the assumptions made in the HHRA about the presence of the toxic hexavalent chromium versus the less toxic trivalent chromium. The borings were performed using a Geoprobe® direct-push drilling method and extended to 6 feet bgs. Samples were collected from the 0 to 2 feet bgs and 2 to 6 feet bgs intervals and were submitted to the laboratory for total chromium and hexavalent chromium analyses.

2.4.16 2013 VT DEC Site Investigation

In December 2013, VT DEC contracted with Lincoln Applied Geology, Inc. (LAG) to perform soil boring and piezometer installation, groundwater sampling, soil vapor survey, and a sensitive receptor survey in the area of South Brownell Road and Shunpike Road. LAG performed six soil borings completed with piezometers and installed two additional piezometers in the bed of the intermittent stream near the western boundary of the study area and submitted six soil samples for VOC analysis. Twelve groundwater samples were collected at the time of soil boring

performance through the drill string and two groundwater water samples were collected from installed piezometers. The groundwater samples were submitted for VOC analysis. Concurrent with the boring and sampling work, 14 soil vapor probes were installed in the area. Passive soil vapor samplers were used to collect soil vapor VOC data from each of the probes. The results were reported in the Site Investigation Report, Commerce Street Plume Project, prepared by LAG, dated February 11, 2014 (LAG, 2014).

2.4.17 2014 Residential Surface Soil and Sump Water Survey Investigation

In July 2014, Nobis performed hand-auger soil borings on nine properties previously identified to contain basements with sumps to collect infiltrating groundwater that discharge to the ground surface. The locations of the samples are displayed on Figure 2-7. Soil samples for VOCs and metals were collected from intervals of 0 to 1 foot bgs, 1 to 3 feet bgs, and 3 to 6 feet bgs from each boring unless refusal was met at a more shallow depth. The soil samples were analyzed on-site by the EPA mobile laboratory. Nobis also collected eight grab water samples from seven sumps in the basements of each property, which contained water, and three soil samples from the sump bottom at properties where the sumps did not contain water. The water and soil samples were analyzed by the mobile laboratory for VOCs and total chromium by x-ray fluorescence (XRF). EPA representatives from the mobile laboratory collected grab air samples from eight properties, including the vacant former Mitec Systems building, based on the water quality results obtained from the EPA mobile laboratory. The air samples were submitted to EPA's NERL for VOC analysis. A subset of the soil and groundwater samples was also submitted to the EPA NERL for quality assurance purposes.

2.4.18 2014 Indoor Air and Sump Water Sampling

In April 2014, VT DEC collected indoor air samples and a sample of the water contained in the basement sump of the residential property located at 830 South Brownell Road. VT DEC detected elevated levels of TCE and PCE in the home and installed an engineered remedy for the property that included capturing the vapors emanating from the sump and discharging sump water outside to the lawn. Post-installation sampling of the indoor air in July 2014 showed that while concentrations in the living space on the first floor had decreased, concentrations of TCE in the basement increased. TCE concentrations in the sump water had also increased from 75.7 µg/L to 104 µg/L.

As a follow-up to VT DEC's investigation, EPA also sampled the indoor air at 830 South Brownell in December 2014 (EPA, 2015). A survey of the contents of the home was performed to identify other sources of TCE and PCE. Approximately 50 items were removed from the home prior to sampling to reduce the potential for cross-contamination. Grab samples from the first floor and the basement were collected and screened in the field. Additional 24-hour Summa canister samples were collected with the windows and doors of the home closed for the entire period. Neither TCE nor PCE were detected in the home (see RI Volume II, Section 1, Appendix C).

3.0 SITE CHARACTERISTICS

Physical site characteristics are described in the following subsections.

3.1 Surface Features

The Study Area is generally flat and slopes gently to the southwest. The Study Area contains a large number of separate parcels, as indicated on Figure 1-2, with both residential and commercial areas. Williston Road (Vermont Route 2) and South Brownell Road are major commercial arteries for the town of Williston, while Kirby Lane and Commerce Street are both dead-end roads used only for local traffic. Surface drainage is generally to the stream in the eastern portion of the Study Area. Surface water is discussed further in Section 3.3.

3.2 Meteorology

The Site is located in a temperate climate characterized by wide variations in seasonal and daily temperatures. The following climate data were obtained between 1981 and 2010 from the Burlington International Airport, Vermont COOP Weather Station Number 431081 located 2.5 miles northwest of the Site. The average annual monthly temperature is 46°F, with an average high temperature of 55°F and an average low of 37°F. The maximum average low temperature recorded over the period is 60°F in July, while the maximum average high temperature recorded was 81°F, also in July. The minimum average low temperature for the period is 10°F in January and the minimum average high temperature is 27°F, also reported in January. The average annual precipitation for the period was 37 inches, with the driest month being February with an average of 1.8 inches of precipitation falling. Conversely, the wettest month recorded is July with

an average of 4.2 inches of precipitation falling. The average total annual snowfall over the period was 85 inches.

3.3 Surface Water Hydrology

The Site is located in the Lake Champlain drainage basin and Winooski sub-basin in the northwest portion of Vermont. The sub-basin drainage area is estimated to be 1,044 square miles.

Surface water at the Site consists of the unnamed stream that runs behind the buildings on the eastern side of Commerce Street, which flows in a southerly direction into Tributary #4 to Muddy Brook. The stream has been referred to as an intermittent stream. However, it has been observed to flow continuously throughout the year, even in periods of relatively low surface water discharge in the area, such as the summer of 1999, when a river gauging station on the Winooski River recorded the lowest precipitation in more than 30 years. A small wetland area is associated with the confluence of the unnamed stream and Tributary #4 at the southern end of Commerce Street.

Tributary #4 joins the Muddy Brook one mile south of the Site, near Interstate 89. The flow rate of Muddy Brook has been calculated at 36.5 cubic feet per second (cfs) based on drainage area estimates (TRCC, 1993). Muddy Brook flows northward and joins the Winooski River, which flows to the northwest and discharges to Lake Champlain. The Winooski River flow rate is regulated by a hydroelectric dam located one mile upstream of the confluence of Muddy Brook. The closest United States Geologic Survey (USGS) hydrograph for the Winooski River is located at Essex Junction (station 04290500). The average annual flow rate for the river from 1929 to 2011 is 1,801 cfs; however, this varies significantly on a monthly and annual basis, with an average low in September of 721 cfs and an average high in April of 5,190 cfs.

On the western edge of the Study Area near the intersection of Shunpike and South Brownell Roads is an “unmapped intermittent stream”; a topographic depression with culverts in some areas that conveys intermittent groundwater discharge (VT DEC, 2014).

3.4 Geology

The following subsections present data detailing site geology. Regional geology is based on published maps and reports. Site-specific geology is based on the drilling programs conducted by previous contractors and by Nobis, as well as surface geophysical surveys that were

conducted to determine the contacts for the various units. GPR, seismic refraction and seismic reflection were used to delineate the surface of the clay, till, and bedrock. Geophysical reports are presented in Appendix E.

3.4.1 Surficial Deposits

The borings installed for this remedial investigation and previous site investigations encountered three overburden units: a sand unit fining downward to silt with some cross-bedding, clay, and glacial till. The borings installed as part of the RI drilling program conducted by Nobis penetrated only as far as the top several feet of the clay layer; surface geophysics and borings from previous investigations were also used to determine Study Area subsurface conditions. The units are represented on cross-sections A-A' through E-E'. The cross-section locations are depicted on Figure 3-1; the cross-sections themselves are provided in Figure 3-2 through Figure 3-6. The units are described separately below.

This observed stratigraphy is consistent with previously published interpretations for the local area (Stewart and MacClintock, 1969, Denny 1974) that describe deltaic deposits overlying sub-aqueous fans, which in turn overlie lacustrine silts and clays. These strata were deposited during the retreat of the last continental glaciers less than 12,000 years ago.

Sand

A thick sand unit extends to approximately 40 feet bgs across the Study Area. Boring logs (Appendix A and Appendix B) indicate that the sand material generally fines downward, with medium to coarse sand noted in more shallow intervals (less than 20 feet bgs) and fine sand predominating below this depth. Silty layers were more common at depth; however, borings encountered units with varying amounts of silt throughout the sandy unit. The vertical profiling performed in August/September 2011 by Stone using the Waterloo™ Profiler APS-D system indicated that the sand unit is layered with thin zones of lower relative hydraulic conductivity (I_k) compared to the unit as a whole. Based on the I_k plots in the final data package included in Appendix H, these layers occur generally between 20 feet bgs and the clay layer at approximately 40 feet bgs.

Running or heaving sands were common from approximately 30 to 40 feet bgs, indicating that the material was composed of relatively fine and uniform grains that could readily flow under

hydrostatic pressure. Investigators frequently had difficulty collecting samples and installing monitoring wells in this interval. However, relative hydraulic conductivity measured during the Waterloo™ profiling (Appendix H) can provide an approximation of the stratigraphy. Several of these borings (WP-03, WP-04, and WP-06) indicate interbedded units with much higher I_k (representative of clean sands) and much lower I_k (representative of silty units) which will affect contaminant transport.

Clay

Beneath the sandy material is a clay unit that appears to be continuous across the Site, which is presumably acting as a barrier to the downward movement of contaminated groundwater. The contact between the sand unit and the clay is a sand/silt mixture consisting of thin, interbedded clay and silt layers and lenses. For example, Waterloo™ boring WP-02 has a zone of relatively high conductivity at approximately 42 feet bgs, immediately above a layer with minimal hydraulic conductivity. Therefore, the unit boundaries indicated by geophysics are approximate and may not reflect the thin layers, which may significantly impact groundwater and contaminant behavior.

The evaluation of the clay stratigraphy that covered the largest area was the Hager report performed in 2010. Hager's interpretation of the clay layer based on geophysical results generally correlates with previous findings (HSI GeoTrans, 2000). According to Hager's report (Appendix E), the depth to the clay layer ranges from 36 to 54 ft bgs across the Study Area, with localized lows along Commerce Street and larger depressions in the east and west portions of the survey area (Figure 3-7). A depression in the upper surface of the clay layer in Lot 7:19:23 appears to be a much broader feature in Hager's interpretation. These depths translate to observed elevations of 281 and 305 feet above sea level and are consistent with the range determined from boring logs and previous geophysical investigations. The unit's thickness varies from an estimated 7 to 29 feet.

Clay depths observed by Nobis personnel during soil boring advancements were compared to Hager's results. In general, Nobis observations corresponded with Hager's results, indicating fine to medium sands with varying amounts of silt found above the clay layer. Increasing amounts of silt were present as borings were advanced towards the clay layer. In several borings (e.g., SB-03 and SB-06), the clay layer was found to be up to five feet lower or higher than what was

approximated in the geophysical survey. Such discrepancies did not affect the outcome of any of the investigations.

Till

Beneath the clay layer, a dense glacial till was encountered at approximately 60 to 100 feet bgs. This unit is expected to impede groundwater flow between the overburden and bedrock. The till surface elevation is highest in the vicinity of the northern portion of Commerce Street, with relatively low elevations located to the west of Kirby Lane and within the southern portion of the Study Area. The contours of the till surface are presented as Figure 3-8.

3.4.2 Bedrock

Bedrock in the area is mapped as the Beckman Formation, which is part of the Hinesburg Synclinorium structure. The Beckman Formation is Lower Ordovician in age and consists of white marble and massive gray limestone and dolomite. Bedrock was encountered by others in two borings at 99 feet bgs and 115 feet bgs at the Site, and was a meta-dolostone. The bedrock contour surface is presented in Figure 3-9. The bedrock surface has a strong elevation change from the relatively high northeast section of the Study Area to the southeast, which coincides with a potential fracture zone noted by the seismic reflections. The topographic relief of the inferred bedrock surface across the Study Area is approximately 36 feet.

3.5 Hydrogeology

Synoptic water level measurement rounds, stratigraphic changes noted during drilling, and several sets of hydraulic conductivity tests (both single-well slug tests and pumping tests) from previous investigations were used to evaluate Site hydrogeology. Additional slug tests and the Waterloo™ profiling were also conducted for the RI to expand the area evaluated and fill data gaps from the earlier investigations. Site hydrogeology is described for the sand-silt aquifer because it is significantly more transmissive than the underlying clay and, therefore, is expected to be the dominant transport pathway for Site contaminants.

It should be noted that 184 potentially intact monitoring wells were identified during HSI GeoTrans's 1999-2000 investigation. Using location figures from HIS GeoTrans and Weston Solutions, Inc., Nobis personnel were able to locate only 68 of these wells and successfully

identified 12 locations (e.g., NO series) where wells had clearly been decommissioned, destroyed, or abandoned (e.g., paved over, filled in with sand, etc.). This inventory resulted in 104 wells that were unaccounted for. Additional wells were installed in 2010 to address these and other data gaps.

3.5.1 Groundwater Elevations – Sand Unit

Several groundwater level measurement rounds have been conducted at the Site throughout the years. Water level measurements from 2008 through 2012 are provided in Table 3-1. Water levels ranged from 1.2 to 10 feet bgs. The primary aquifer is the sand unit above the clay. Although this unit has lenses of finer (silty) material, none of the layers are consistent from boring to boring or otherwise appear to be laterally extensive. In order to compare groundwater transport throughout the aquifer, monitoring wells and other observations have been separated into shallow (less than 20 feet bgs), intermediate (between 20 and 30 feet bgs), and deep (more than 30 feet bgs) overburden.

Although not every well was measured during each round, several wells were consistently measured (fall 2008, winter 2008/2009, spring 2010, fall 2010, fall 2011). The water levels from these wells were averaged to determine the seasonal variation as shown in Table 3-2. Water levels in the intermediate and deep overburden were generally stable, with the average water level varying by about a foot between the six events. Water levels in the shallow overburden were less stable, with average water levels varying by almost 1.5 feet. This may be in part due to the shallow water table with a relatively low horizontal gradient and the presence of numerous shallow topographical depressions and surface water bodies all of which will react significantly to local precipitation events. It is also possible that the presence of sumps in buildings may cause local variations in in shallow groundwater levels.

Water levels collected during the fall of 2010 and fall of 2011 represent the most complete list of wells for which water levels were recorded. The fall 2010 data depict the water table at the lowest observed conditions and the fall 2011 data depict the water table at the highest observed conditions of the two events. Groundwater elevation contour maps based on water levels for the shallow overburden wells are presented in Figure 3-10 (low water table conditions) and Figure 3-11 (high water table conditions). Figure 3-12 depicts water level contours for intermediate/deep wells under low water table conditions and Figure 3-13 depicts

intermediate/deep wells under high water table conditions. These conditions are described in detail in the following subsections.

3.5.2 Groundwater Flow Directions – Sand Unit

Groundwater flow in the primary aquifer is generally from north-northeast to south-southwest. However, the groundwater flow path has a component of radial flow in the central portion of the Study Area, with groundwater moving to both the southeast and southwest in both shallow and deep overburden and under low and high water conditions. This flow path probably exists because of two factors. First, the stream along the eastern boundary of the Study Area may create a localized southeasterly diversion to a generally southwesterly groundwater flow direction. In addition, the operation of sump pumps located in several residences on South Brownell Road may cause localized westerly diversion to a generally southerly groundwater flow direction southwest of Kirby Lane.

A preferential flow path was likely created in 1985 and 1986 when the sewer and water lines were extended down Commerce Street. The sewer lines lie to the west of Commerce Street and the water lines to the east of Commerce Street. Based on a discussion with Bruce Hoar, Director of Williston Public Works, the sewer line trenches were dug to a minimum depth of 10 ft bgs; the water line trenches were dug to a minimum depth of 8 ft bgs (Town of Williston, 2014). The excavation of the trenches and any backfill would create isolated areas of higher permeability along the center of Commerce Street, relative to water levels collected in locations some distance from the utility trenches.

3.5.3 Gradients – Sand Unit

Gradients are a unit less measure determined by dividing the change in water level (dh) by the distance between measuring points (dl). Larger gradients indicate a higher potential for groundwater movement.

Vertical Gradients

Vertical gradients were calculated at each point where a shallow and intermediate/deep overburden well couplet exists. Vertical gradients are tabulated in Table 3-3 and displayed on Figure 3-14. The vertical gradients in the Study Area are generally low and negative (downward),

with only one cluster with gradients greater than 0.1 (ASI-8S/D). Gradients are more varied in the wells closest to the stream (ASI-2S/D2, ASI-5S/D2 and ASI-8S/D) and in the central portion of the Study Area (ASI-13S/DASI-15S/D2, ASI-16 S/D2 and ASI-23S/D), possibly because of the influence of surface water on shallow groundwater elevations.

The low gradients indicate that groundwater (and by extension contamination) has a relatively low potential to move downward (or upward). This suggests that gravity and the denser-than-water properties of the contaminants at the Study Area were the primary initial drivers for carrying contamination to deeper portions of the overburden aquifer.

Horizontal Gradients

Horizontal groundwater potentiometric surface gradients are summarized in Table 3-4 and are generally small. The horizontal gradients are slightly higher in shallow groundwater, with an average gradient of 0.0043 for shallow/water table groundwater and 0.0037 for intermediate/deep groundwater. Average horizontal gradients are also slightly higher during relatively high water level conditions (0.0043 in fall 2011 versus 0.0038 in fall 2010).

These low gradients reflect the subdued topography, relatively uniform geologic stratigraphy, and lack of known pumping or injection wells (with the possible exception of domestic sump pumps in the west and southwestern portion of the Study Area).

3.5.4 Hydraulic Conductivity – Sand Unit

Three methods were used to determine hydraulic conductivity (K). Single-well slug tests and a multi-well pump test were performed to determine hydraulic conductivity for the sandy aquifer materials in previous investigations. Slug tests were also conducted at new wells in January 2013; detailed analyses are provided in Appendix I. In addition, I_k was determined as part of the Waterloo™ groundwater profiling performed in 2011. Results for all three methods are provided in Table 3-5. The locations of the wells where slug tests were performed are provided in Figure 3-15.

Based on the slug tests, shallow aquifer wells had a wider range of K values and generally higher K values than wells in deeper aquifers. Shallow aquifer (less than 20 feet bgs/water table) K values ranged from 1 to 26 ft/day. Intermediate aquifer (screens generally deeper than 20 feet

bgs, with a total depth of less than 30 feet bgs) K values ranged from 0.86 to 8.76 ft/day. Deep aquifer (screen deeper than 30 feet bgs) K values ranged from 1.1 to 9.4 ft/day. These values compare well to the values determined in previous reports.

The pumping test performed by HIS GeoTrans indicated that radial (lateral) hydraulic conductivity was significantly higher than vertical hydraulic conductivity (HSI GeoTrans, 2000). This is supported by drilling observations of layered sands and silts, as well as the Waterloo™ profile results (Appendix H), which indicated the presence of thin layers with contrasting hydraulic conductivities. Although soils were not logged, these layers likely represent lenses of relatively clean or silty sands.

3.5.5 Groundwater Velocity – Sand Unit

Overburden groundwater velocities and vertical gradients were calculated for the Study Area based on the low water table conditions (fall 2010) and high water table conditions (fall 2011) groundwater elevation measurements and using average hydraulic conductivities from the slug tests as described in the previous subsection for shallow and intermediate/deep aquifers.

Using a geometric mean hydraulic conductivity (K) value of 13 ft/day in the shallow overburden and 3.8 ft/day in the intermediate/deep overburden, six different groundwater velocities (v) in the intermediate/deep overburden were calculated in the direction of groundwater flow along several portions of the Study Area. The velocities were calculated using the following formula, where an effective porosity (n_e) of 0.20 for fine sand/silt was assumed (Kresic, 2007) and the hydraulic gradient (dh/dl) calculated as the difference in groundwater elevation between two wells divided by the linear distance between them:

$$v = \frac{K\ dh}{n_e\ dl}$$

When the different overburden units were averaged for both low and high water conditions, the average groundwater velocity was 0.18 feet/day, or 61 feet/year, across the Study Area. Table 3-4 lists the locations used for each calculation and the corresponding groundwater velocities. The highest groundwater velocities were calculated in the shallow groundwater. In general, groundwater velocities were higher during high water conditions.

3.5.6 Other Aquifers

The primary aquifer for the Site is the upper sandy material, which has a higher hydraulic conductivity in the upper portions (the medium to fine sand) and a lower conductivity in the lower interbedded silts and fine sands. Hydraulic testing was not conducted in the clay and till at the Site. Hydraulic conductivity of clay is expected to be extremely low, on the order of inches per day (Freeze and Cherry, 1976). Therefore, the clay immediately beneath the sand aquifer is not expected to be a significant medium for transport of groundwater.

One monitoring well, BR-1, is screened within the glacial till directly above the bedrock. This well was originally intended to be in the bedrock but was completed in the till instead. Hydraulic conductivity testing performed in 2013 at BR-1 indicated that the till conductivity was approximately 8.6×10^{-4} ft/day; however, other areas of the till may have significantly different conductivities – up to a 1 ft/day – due to the highly heterogeneous nature of till deposits (Freeze and Cherry, 1976).

No bedrock wells were available for testing. Study Area groundwater flow direction and velocity in either the bedrock or till aquifers could not be determined.

3.6 Demography and Land Use

Population demographics and regional land usage are used to determine the receptors who may be potentially affected by contamination from the Study Area.

3.6.1 Demographics

Williston is a town located in northwestern Vermont. According to 2010 census data, the approximate year-round population of Williston is 8,700, with a total household count of 3,500, a median age of 44.1, and a population density of 290 per square mile (USCB, 2012).

3.6.2 Land Use

Current zoning allows for mixed residential, business, and industrial uses. The industrial park is surrounded by light industrial, commercial, residential, and agricultural land. Pedestrian access is

generally unrestricted. 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 is entirely residential. South Brownell Road is residential with some commercial developments.

Vermont groundwater protection statute defines all groundwater in Vermont as Class III, which is suitable for use as a potable water supply unless it is reclassified as Class IV (non-potable). Currently the groundwater within the Study Area is Class III.

Local municipal water is served by the Champlain Water District (Champlain Water District, 2011), which uses an offshore source in Shelburne Bay (Lake Champlain). Lake Champlain is outside of the 15-mile surface water pathway.

The Vermont Natural Resources Atlas (Atlas) contains a single category for potable water supply well, which may be used for industrial use in addition to public use. According to the Atlas (accessed September 4, 2014), one public drinking water supply well (the Williston Fire District Well No. 1) is located 2.5 miles southeast of the property. However, this public water supply is located in a different hydrogeological area and is unlikely to be impacted by contamination migrating from the Study Area (VT DEC, 2013). No other public drinking water supply wells, wellhead protection areas, or sole source aquifers were identified in close proximity to the Study Area. One private water supply well has been confirmed to be located within 0.5 miles and in the same hydrogeologic area as the current plume. The well serves a commercial property and is used for irrigation of a retail garden center south of the Study Area.

The unnamed stream along the eastern boundary of the Study Area has approximately 2.5 miles of wetland frontage. In the 15-mile downstream pathway from the Study Area, additional wetland frontage includes 4.7 miles of wetlands adjacent to Muddy Brook and 2.9 miles of wetland adjacent to the Winooski River. Both Muddy Brook and the Winooski River are documented fisheries.

4.0 NATURE AND EXTENT OF CONTAMINATION

This section presents the summaries of analytical results developed by several investigations performed at the Site to characterize the nature and extent of chemical contamination in the Site

environmental media. To help clarify the analytical results, Section 4 provides an overview of potential contaminant sources and comparisons of analytical results for Site environmental data to available benchmark criteria.

4.1 Contaminant Screening Criteria

To evaluate the nature and extent of the contamination at the Site, a series of screening values or benchmarks were utilized. The following provides the selected screening criteria by environmental media:

4.1.1 Soil

- EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites, Residential Soil Scenario, January 2015.
    - Screening levels established by EPA for the purposes of evaluating contamination at Superfund Sites, using generic exposure scenarios and chemical-specific toxicity values.
    - Though current land use includes light commercial activities, Williston zoning allows for residential use of any parcel. Residential use is therefore assumed across the Study Area.
    - Utilized to evaluate contaminant impacts on a residential human health population via direct contact, such as walking, recreating, or yard work.
- Vermont Department of Health Risk-Based Residential Soil Concentrations for Carcinogens, Investigation and Remediation of Contaminated Properties Procedure, April 2012.
    - Screening levels based on a *de minimis* incremental lifetime carcinogenic risk of 1×10^{-6} and assumes a 70-year residential exposure scenario.
- EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites – Industrial Soil Scenario, January 2015.

- Screening levels established by EPA for the purposes of evaluating contamination at Superfund Sites, using generic exposure scenarios and chemical-specific toxicity values.

- Applies to the portions of the Study Area occupied by commercial/industrial land usage.

- Utilized to evaluate contaminant impacts on an industrial/commercial (worker) human health population via direct contact, such as walking, driving, or office work.

4.1.2 Groundwater

- Maximum Contaminant Levels, National Primary Drinking Water Regulations, 40 CFR 141 Subparts B & G, July 1, 2010.
  - Legally enforceable standards that apply to public water systems.

- Vermont Water Supply Rule - Drinking Water Quality Requirements, Maximum Contaminant Levels, Environmental Protection Rules, Chapter 21, revised December 1, 2010.
  - Screening levels for public water systems.

- Vermont Groundwater Rule and Strategy, Environmental Protection Rules, Chapter 12, Primary Groundwater Quality Enforcement Standards, effective February 14, 2005.
  - Establishes state groundwater enforcement standards including compounds that do not have a federal MCL.

4.1.3 Surface Water

- National Recommended Water Quality Criteria – as required by the Clean Water Act Section 304(a)(1), 2009.
  - NRWQC – HH - EPA National Recommended Water Quality Criteria, Human Health (water + organism)

- Vermont Water Quality Criteria for the protection of Human Health and Aquatic Biota, Vermont Water Quality Standards, effective October 30, 2014.
    - Protection of Human Health, Consumption of Water and Organisms

4.1.4 Sediment

- EPA Region 3 Freshwater Sediment Screening Benchmarks, 2004.

- Vermont Sediment Quality Guidelines for the Protection of Aquatic Biota in Freshwater Ecosystems, Vermont ANR, Investigation and Remediation of Contaminated Properties Procedure, April 5, 2012.

4.1.5 Indoor Air

- EPA Regional Screening Levels for Superfund Sites – Residential Air Screening Level, May 2012.
- EPA Regional Screening Levels for Superfund Sites – Industrial Air Screening Level, May 2012.
- VT DEC Investigation and Remediation of Contaminated Properties Procedures, April 2012.

4.2 Potential Source Descriptions

As noted in Section 1.3 and 1.4, the former AIP has been used by commercial and light industrial tenants since 1946. Earlier investigations identified three properties as locations of operations that could have contributed to groundwater contamination. Two of those, Lot 8:19:12 (Bove-Fagan) and Lot 8:19:2 (former EMCO), while subject to past remedial actions to address contamination, do not appear to have contributed significantly, if at all, to the groundwater plume that has been mapped in the Study Area.

On the western portion of the Study Area, the property at 85 Shunpike Road (formerly 20 Shunpike Road), was investigated by VT DEC for improper storage of drums in 1997. The building also contained floor drains, an underground waste oil tank, and oil-water separator. Soil, groundwater, and surface water samples were collected; however, the only VOC detected was

MTBE in two wells at concentrations below the Vermont GWPR of 40 µg/L (Johnson Company, 1997).

The most likely source of contamination in the Study Area, given the nature, extent and distribution of contaminants; processes typical to the electroplating industry; and known disposal practices, is the former Mitec Systems facility which leased Lot 7:19:11 between 1979 and 1986. During that time, Mitec Systems operated as an electroplater of microwave components. Although also used by previous tenants on the property, a pipe installed in 1979 allowed Mitec Systems to dispose of wastewater contaminated with metals and spent solvents directly from the building to an unlined lagoon (VT ANR, 1990). A leach field located adjacent to the building was reported for sanitary use only; however, a significant TCE plume appears to be emanating from it suggesting that TCE waste may have been disposed in the septic system. Both areas are suspected sources of TCE, PCE and/or metals because of the electroplating operations performed at the property. Contaminated soil was removed from the wastewater lagoon in 1985, and additional soil was removed in 1989.

4.3 Soil Analysis Results and Interpretation

Soil samples were collected as part of this investigation during 2010, 2012, 2013, and 2014. Boring locations are shown on Figure 2-5. Statistical summaries of detected contaminants can be found on Tables 4-1 through 4-25.

4.3.1 2010 Soil Results

Soil samples collected during 2010 were analyzed on site for cis-1,2-DCE, PCE, and TCE. A statistical summary of the results is provided in Table 4-1. Complete results are provided in Appendix D-3. TCE was the only compound detected, and it was detected at all seven boring locations, in 18 of the 48 total samples collected. TCE was not detected in samples collected from less than 17 feet bgs. TCE concentrations ranged from 1 µg/Kg at SB-03 at 17.0 ft bgs to 12,500 µg/Kg at SB-02 at 37.5 ft bgs. Concentrations tended to increase with depth. Borings with concentrations above screening values included SB-02 (from 30 to 38 ft bgs), SB-03 (from 34.5 to 27 ft bgs), and SB-04 (24.5 to 41 ft bgs). All three borings are located in the area of elevated groundwater concentrations discussed in Section 4.3, and not in the historically identified source zones.

In addition to the laboratory VOC results, one soil sample collected from SB-02/S-8 at a depth of 35 to 40 ft bgs demonstrated a PID reading greater than 100 parts ppm. An Oil-Red-O shake test (Nobis, 2010) was performed for this sample, and the test was negative for NAPL.

4.3.2 2012 Soil Results

Soil samples collected during 2012 were analyzed for VOCs, SVOCs, and metals. Complete results are provided in Appendix D-3.

4.3.2.1 VOCs in Soil

Analytical results from soil samples collected in 2012 had similar concentrations to 2010 results in the same areas and depths. TCE was the primary detected compound, and was detected in seven of the 41 total samples collected. TCE concentrations ranged from 92.7 µg/Kg to 2,100 µg/Kg. TCE was only detected at two of the six boring locations, SB-12-1 and SB-12-2 (located on Lot 7:3:27), and only in samples collected from more than 10 feet bgs. Minor concentrations of acetone were also detected in five of the samples; however, it is likely the result of the laboratory processes. The statistical summary of these sample results is shown on Table 4-2.

Although none of the samples exhibited PID readings greater than 100 ppmv, the “Oil-Red-O” shake test was performed on two samples (SB-12-01, S-6 and SB12-02, S-6) where the highest readings were measured (9 ppm and 10 ppmv, respectively). The results of these tests did not indicate the present of NAPL in either sample.

4.3.2.2 SVOCs in Soil

Seven SVOCs were detected in one soil sample at the Study Area (Table 4-3). These SVOCs were only detected in the sample from one foot bgs at SB-12-5 (located on the former Mitec Systems property). Concentrations of benzo(a)anthracene, benzo(a)pyrene and benzo(b)fluoranthene exceeded EPA residential regional screening levels (RSLs) in that sample. The concentration of benzo(a)pyrene also exceeded the industrial/commercial RSL and the VT risk-based soil screening level.

4.3.2.3 Inorganics in Soil

A variety of metals was detected in soil samples collected from the Study Area. Table 4-4 provides a statistical summary of the detected inorganic results in soils. Only arsenic and chromium were detected in excess of action/screening criteria and are discussed below.

Arsenic in Soil

Arsenic was detected in all but one soil sample collected from the Study Area, irrespective of sample depth or location. Figure 4-1 provides a distribution summary of the arsenic detections in soil samples.

The arsenic concentrations ranged from 2.6 mg/Kg to 9.2 mg/Kg. All soil samples contained arsenic concentrations in excess of the EPA RSL values of 0.39 mg/Kg for residential soils and 1.6 mg/Kg in commercial soils. Higher concentrations appear to be prevalent through all sample depths, and appear to be somewhat higher at SB-12-1. The RSL values for arsenic are low, and likely below the typical background associated with the northeast. Vermont uses a value of 10 mg/Kg as indicative of background conditions.

Chromium in Soil

Samples were analyzed for total chromium, and because there is no action level for total chromium, the sample results are compared to the action level for hexavalent chromium. Total chromium was detected in every soil sample, with concentrations ranging from 10 mg/Kg to 320 mg/Kg. All sample results exceeded EPA's action level for hexavalent chromium, 0.29 mg/Kg. As shown on Figure 4-2, the maximum concentrations of total chromium (320 mg/Kg, 300 mg/Kg, and 260 mg/Kg [duplicate]) were detected at SB-12-5 in the area of the lagoon on the former Mitec Systems property.

In the samples collected, concentrations appear to be highest in the 2 ft to 10 ft bgs range. The average concentration was 29 mg/Kg in the 0 ft to 1 ft bgs range, 82.46 mg/Kg in the 2 ft to 10 ft bgs range, and 18.08 mg/Kg in the greater than 10 ft bgs range.

4.3.3 2013 Soil Results

Soil samples collected during December 2013 were analyzed for total chromium, and hexavalent chromium. Three soil borings were performed — two in the former unlined lagoon area in the rear of the former Mitec Systems property and one to the southwest of the intersection of South Brownell Road and Shunpike Road. These locations were selected based on the historical concentrations of total chromium previously observed in the vicinity. Table 4-5 provides a statistical summary of the total and hexavalent chromium results in soils. Complete results are provided in Appendix D-3.

Samples were analyzed for total chromium and hexavalent chromium. Total chromium was detected in every soil sample, with concentrations ranging from 7.5 mg/Kg to 16 mg/Kg. Hexavalent chromium was detected in only one sample at a concentration of 0.85 mg/Kg and exceeded EPA's action level for hexavalent chromium of 0.29 mg/Kg. The sole detection of hexavalent chromium was in a sample collected from boring SB-13-02 from the 3 to 6 feet bgs interval in the southern end of the former unlined lagoon area. Figure 4-2 displays the chromium distribution in Study Area soil.

4.3.4 2014 Soil Results

Soil samples collected during July 2014 were screened for VOCs and total chromium and were analyzed for VOCs and total metals. The statistical summary of these sample results (non-screening) is shown on Table 4-6. Complete results are provided in Appendix D-3.

4.3.4.1 VOCs in Soil

Soil samples were analyzed on site by the EPA mobile laboratory for TCE and selected samples were submitted to the EPA NERL fixed laboratory for the full list of VOCs for QA purposes. Analytical results indicate that TCE was detected in the samples collected from borings SB-14-04 and SB-14-05 only. The fixed laboratory results confirmed the mobile laboratory detections. The highest TCE concentration was detected in the 0 to 1 foot bgs sample from SB-14-04 at 697 mg/Kg (910 mg/Kg in the confirmation sample from the fixed laboratory). Minor concentrations of acetone were also detected in two of the samples submitted to the fixed laboratory; however, it is likely the result of the laboratory processes.

4.3.4.2 Inorganics in Soil

Samples were analyzed for total chromium by XRF by the mobile laboratory and selected samples were analyzed for the target analyte list (TAL) by inductively coupled plasma – atomic emission spectrometry (ICP-AES) by the EPA NERL fixed laboratory. Total chromium was detected in 15 of the 42 soil samples, with concentrations ranging from 28 mg/Kg to 116 mg/Kg. Each of the detected exceedances of total chromium results exceeded EPA's action level for hexavalent chromium 0.29 mg/Kg. As shown on Figure 4-2, the maximum concentrations of total chromium (116 mg/Kg) were detected at SB-14-04 in the area of the residential property located at 830 South Brownell Road. The statistical summary of these sample results is shown on Table 4-6. Complete results are provided in Appendix D-3.

4.4 Groundwater Analysis Results and Interpretation

Groundwater samples have been collected from a variety of monitoring wells throughout the Study Area since the 1980s. In 1987 and 1988, concentrations of TCE and PCE were detected in groundwater up to 3,300 µg/L and 660 µg/L, respectively, throughout the former AIP. In 1996, samples collected by VT DEC identified TCE concentrations up to 1,790 µg/L directly downgradient of the leach field located at the former Mitec Systems property. In 1999, groundwater samples taken by the VT ANR found TCE in ground water at levels as high as 90,000 µg/L downgradient of the former Mitec Systems facility. In 2002, EPA detected elevated levels of 11 VOCs and 13 metals in monitoring wells located throughout the industrial park and surrounding residential area. Groundwater contamination continues to be detected directly downgradient of the Mitec Systems property. This RI Report evaluates groundwater results from sampling performed by Nobis beginning in 2008 through 2014.

4.4.1 VOCs in Groundwater

Although groundwater samples were first collected from the Study Area in 1984, the recent rounds of sampling initiated in December 2008 and completed in July 2014 are the focus of the interpretation in this RI. The overburden has been divided into shallow, intermediate, and deep overburden as discussed in Section 3.5.1. In addition to the four rounds of monitoring well sample collection, vertical profiling samples were collected in 2010 and 2011 and Waterloo™ samples were collected in 2011. Those analytical results will be evaluated as separate events. Table 4-7 through Table 4-12 provide statistical data summaries for VOCs in groundwater (Table 4-9 depicts

statistics for VOCs in porewater). Appendix D-1 contains tables with complete analytical results for groundwater VOC sampling. Groundwater concentrations for TCE (the contaminant of greatest concern in the Study Area) are depicted in plan view on Figure 4-3 through 4-5 and in cross-sections in Figure 4-6 through 4-10.

December 2008

A total of 23 overburden monitoring wells were sampled in 2008: 11 shallow (0-20 ft bgs), six intermediate (20-30 ft bgs), and six deep (greater than 30 ft bgs). Seventeen VOCs were detected with half the analytes detected only once (Table 4-7). 1,2-dibromo-3-chloropropane, methylene chloride, and TCE were the only analytes with concentrations exceeding action levels. Only TCE concentrations exceeded the action level in more than one well and the range of observed concentrations was 0.1 µg/L to 5,300 µg/L. In shallow monitoring wells TCE concentrations did not exceed the action level of 5 µg/L. High concentrations of TCE were detected primarily in intermediate overburden wells. Two deep overburden wells at the center of the Study Area between Commerce Street and Kirby Lane also contained high TCE concentrations.

Details of sampling results compared to action levels can be found in Appendix D-1.

May 2010

Twenty-seven monitoring wells were sampled in May 2010; 13 shallow overburden, 6 intermediate, and 8 deep overburden wells. Twelve VOCs were detected with seven analytes detected only once (Table 4-8). Cis-1,2-DCE and TCE were the only analytes with concentrations exceeding action levels. Cis-1,2-DCE exceeded the EPA MCL and VT GWPR in only one sample, ASI-03D2. The highest TCE concentration was also detected at ASI-03D2. TCE was detected in 10 additional wells at concentrations greater than the action levels. Concentrations ranged from 0.15 µg/L to 6,100 µg/L. Wells with TCE concentrations above 50 µg/L which were sampled in both 2008 and 2010 (ASI-02D2, ASI-11D2, ASI-14D2, ASI-15D2, ASI-23D2, and BM-3D) had similar concentrations in both rounds, although concentrations were slightly lower in 2010.

In the shallow overburden aquifer (0-20 ft bgs), analytes detected included TCE, PCE, chloroform, dichlorodifluoromethane, and 1,4-dichlorobenzene (1,4-DCB). Of the VOCs detected in the shallow overburden groundwater, none was present at concentrations exceeding their respective

action levels. Intermediate and deep overburden samples revealed high concentrations of TCE in the center and eastern Study Area, with concentrations ranging up to 6,850 µg/L in ASI-03D2.

Sampling results compared to action levels can be found on tables in Appendix D-1.

June 2010 Porewater

Porewater samples collected from the stream at the east side of the Study Area were analyzed for VOCs to determine whether contaminants in groundwater are being discharged into the stream. Cis-1,2-DCE, methylene chloride, TCE, and vinyl chloride were detected at concentrations exceeding their EPA action levels (Table 4-9).

The highest concentrations of VOCs in porewater were located between PW-06 and PW-11, close to the locations of high TCE concentrations in intermediate overburden groundwater. Figure 4-11 depicts porewater concentrations detected in the stream. In contrast to the groundwater concentrations nearby, the significant VOCs in porewater included cis-1,2-DCE and vinyl chloride. These two compounds are daughter products of the TCE degradation process, which is described further in Section 5.

July 2010 Vertical Profiling Groundwater

Results of the 2010 vertical profiling showed TCE concentrations ranging from 0.04 µg/L (VP-04 at 35 ft bgs) to 61,000 µg/L (VP-16 at 40 ft bgs). Figure 2-4 depicts the 2010 vertical profiling locations. Table 4-10 provides a TCE statistical summary at each vertical profiling location as reported by the EPA mobile laboratory. Complete results for the 2010 groundwater profiling are provided in Appendix D-1. The on-site mobile laboratory generated real-time results and quick analytical turnaround times so that location adjustments could be made to define the clean zones in the event a sample exceeded applicable VOC standards.

In general, the highest TCE concentrations were observed in the deep (> 30 ft bgs) overburden groundwater along central portions of Commerce St. Locations VP-15, VP-16, and VP-19 demonstrated average TCE concentrations above 5,000 µg/L, with VP-16 and VP-19 exceeding 10,000 µg/L. The higher concentrations at depth may be from dissolution of DNAPL that migrated downward directly after being released into the environment, or from movement downward from surface infiltration.

High concentrations of TCE were also observed in residential areas to the west/southwest (e.g., VP-21, VP-26, VP-27, and VP-28), consistent with previous investigations (e.g., HSI GeoTrans) and recent intermediate/deep overburden groundwater sampling results from ASI-16D2 and ASI-23D2. The nature of the contamination is consistent with that found on Commerce Street and the distribution is consistent with transport from a source on the former Mitec Systems property under the influence of several site-specific factors including regional groundwater flow, anthropogenic activities (e.g., sump pumps) and the intermittent unmapped stream along the western edge of the Study Area acting as a potential groundwater discharge zone. The western edge of the TCE contamination appears to have been delineated in the vicinity of WP-05.

As discussed in Section 2, the interval demonstrating the highest TCE concentration was selected from each profiling location for confirmation sampling by an EPA CLP Laboratory. In general, the fixed laboratory results were slightly higher, but within the same order of magnitude as the EPA mobile laboratory results.

Cis-1,2-DCE was also observed in the vertical profiling results at concentrations from non-detect to 18,200 µg/L. The maximum concentration of cis-1,2-DCE was detected in VP-22 located adjacent to the stream along the eastern boundary of the Study Area. The results indicated some level of reductive dechlorination causing the formation of less-chlorinated compounds. Refer to Section 5 for more information regarding reductive dechlorination at the Study Area.

November/December 2010

Forty-one monitoring wells were sampled in November/December 2010; 15 shallow overburden, 11 intermediate, and 15 deep overburden wells. Nineteen VOCs were detected with five analytes detected only once (Table 4-11). TCE was detected most frequently, in 30 of 45 samples (including QC samples). Twenty-seven of those 30 samples had concentrations exceeding EPA and VT standards. Cis-1,2 DCE was also detected frequently, and four concentrations exceeded action levels. Concentrations of 1,2-dichloroethane, 1,2-dichloropropane, methylene chloride, PCE and vinyl chloride also exceeded standards in at least one sample.

The November/December 2010 TCE concentrations were similar to those detected in previous sampling rounds. Shallow overburden samples continued to have relatively low concentrations, if

detected. The one exception is the western-most monitoring well, MW-08S, which had a TCE concentration of 3,400 µg/L and is associated with an intermediate well (MW-08M) with a TCE concentration of 7,200 µg/L. Other intermediate overburden wells on the southern side of the Study Area contained the lowest concentrations (e.g., non-detect in OE-2A) while wells in the center and eastern areas of the Study Area contained the highest concentrations (maximum concentration of 75,000 µg/L in MW-04D). Either the wells east of the eastern unnamed stream had TCE concentrations below 1 µg/L or TCE was not detected.

2011 Vertical/Waterloo™ Profiling

The 2011 groundwater vertical and Waterloo™ analytical data were used to address data gaps identified in the 2010 Data Summary Report (Nobis, 2011a). Most 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 (Figure 2-4). The on-site mobile laboratory generated real-time results and quick analytical turnaround times so that location adjustments could be made to define the clean zones in the event a sample exceeded applicable VOC standards.

According to the 2011 results displayed in Appendix G, vertical profile locations successfully delineated the northern boundary, the southwest boundary, and most of the eastern boundary of the plume (east of the unnamed stream). Data south of VP-55 and east of the stream are unavailable, but VP-55 appears to be positioned to intercept the bulk of the southern plume and elevated concentrations are not expected to the south. The southern boundary appeared to be partially delineated as indicated by non-detections observed in VP-41 and previous non-detect results from monitoring wells at the OE-2 cluster to the south. Exceedances were noted in VP-56 (maximum of 230 µg/L at 30 ft bgs).

The 2011 profiling also confirmed 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 remaining areas of uncertainty with respect to plume delineation were western portions of the Study Area along Shunpike Road and properties along the west side of South Brownell Road where TCE concentrations remained 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). However, given the general trend of declining concentrations moving west, the overall reduced magnitude of TCE in WP-05 (a maximum of 160 µg/L in a screening sample), and the role of the intermittent stream near the western boundary of the Study Area as a potential groundwater discharge zone, it is reasonable to conclude that the TCE plume terminates in closer proximity to WP-05, rather than VP-58 which is located 1,500 feet west of WP-05 along Shunpike Road and where TCE concentrations were below the detection limit during field screening.

June 2012

Seventeen monitoring wells were sampled in June 2012; 2 shallow overburden, 5 intermediate, and 12 deep overburden wells. Four VOCs were detected, but only dichlorodifluoromethane and TCE were detected more than once. TCE concentrations ranged from 39 µg/L to 55,000 µg/L, with 13 samples exceeding action levels. At MW-11S, north of the 96 Commerce Street property, no TCE was detected. At MW-08S and MW-08M, TCE concentrations continued to be elevated. Other intermediate overburden wells located south of MW-08M also had elevated concentrations similar to previous sampling rounds. However, intermediate overburden wells east of MW-08M contained considerably lower TCE concentrations. Deep overburden wells at the center of the Study Area also showed elevated concentrations. One anomaly is the lack of TCE at MW-05D2 where it had been detected at 12,000 µg/L in November 2010. Research into the chains of custody, sample delivery, and analytical protocol revealed no explanation why TCE was not detected in this location during this sampling event.

TCE was detected in 13 samples at concentrations that exceeded the MCL and VT GWPR. The highest concentration, 55,000 µg/L, was detected at MW-04D. Eight of the samples with TCE had concentrations lower than the December 2011 sampling round.

A summary of the compounds detected in groundwater and associated concentrations from the June 2012 samples are presented in Table 4-12.

June/July 2014

In response to the TCE detection in the sump water at the residential property located at 830 South Brownell Ave (sample collected by VT DEC) , a residential sump investigation was complete in June/July 2014. Water samples were collected from the residences located on the northern end of South Brownell Road and one property on Kirby Lane previously identified to have

basements with sumps installed. The samples were screened by the EPA Mobile Laboratory, and selected samples were split and submitted to the EPA Office of Environmental Management and Evaluation (OEME) fixed laboratory for analysis of VOCs. No VOCs were detected in exceedance of the criteria in any of the nine samples collected.

A summary of the analytical results in groundwater and associated concentrations from the June/July 2014 samples are presented in Table 4-13.

4.4.2 Summary of VOCs in Groundwater from December 2008 to July 2014

The groundwater studies conducted for this remedial investigation show a distribution of contamination consistent with those conducted in the Study Area prior to it being listed on the Superfund NPL. The contaminant of greatest concern in the groundwater in terms of areal extent and concentrations is TCE.

Groundwater plume maps are provided for the TCE results from the most recent sampling of monitoring wells (June 2012) in Figure 4-3, Figure 4-4, and Figure 4-5 (shallow, intermediate, and deep overburden, respectively). Figures showing the TCE plume contoured at a smaller scale are included in Appendix G. Cross-sections are provided in Figure 4-6 through Figure 4-10 using the transects shown on Figure 3-1. The nature and extent of the TCE plume at depth is described below.

Figures 4-3, 4-8 and 4-10 show that the shallow (0 – 20 ft bgs) overburden TCE contamination is primarily located near the intersection of South Brownell and Shunpike Roads, along the western boundary of the Study Area and in the vicinity of VP-36 (380 µg/L) and VP-38 (6,100 µg/L) along the eastern boundary of the Study Area. In the western area, samples from monitoring wells and the groundwater profiling (MW-8S, VP-24, and WP-06) depicted PCE at concentrations that exceed screening criteria in addition to TCE. In the eastern portion of the Study Area, porewater results (Figure 4-11) indicate that the unnamed stream is intercepting the more-shallow TCE plume in the eastern portion of the Study Area. The only other locations with TCE contamination are immediately southeast of Mitec Systems (with a maximum concentration of 6.1 µg/L, only slightly above criteria at VP-01). Based on these results, a residual shallow source does not appear to be present in the Mitec Systems source areas identified in historical reports and shown

on Figure 1-2. The elevated VOC concentrations in shallow overburden west of South Brownell Road are consistent with that found on Commerce Street and distribution is consistent with transport from a source on the former Mitec Systems property under the influence of several site-specific factors, including regional groundwater flow, anthropogenic activities (e.g., sump pumps), and the intermittent unmapped stream along the western edge of the Study Area acting as a potential groundwater discharge zone.

Figure 4-4 depicts several zones of higher groundwater concentrations in the intermediate (20-30 ft bgs) overburden. In the western portion of the plume, the area of high TCE concentrations in the intermediate depth appear to be separated from similar intermediated depth elevated TCE concentrations on the east side of Kirby Lane by lower-concentration zones (AL-2, MW-9M and VP-43), and, PCE was detected in the western area above standards (maximum of 83 µg/L), whereas other sample locations to the east show none of the PCE historically detected there. The most elevated concentrations of TCE (42,900 µg/L in VP-20 and 13,000 µg/L in VP-36) are close to the stream near the eastern boundary of the Study Area.

Figure 4-5 shows that the bulk of the deep (below 30 ft bgs) overburden groundwater contamination is in the eastern portion of the plume along Commerce Street, with extremely elevated concentrations (above 10,000 µg/L) in MW-04D, MW-05D, and MW-06D. The extent of this area of high concentrations is confirmed by nearby profiling points VP-16, VP-19, VP-20, and WP-01. Concentrations of up to 1,000 µg/L were detected immediately southwest of Mitec Systems, one of the historical potential source locations. The stream near the eastern boundary of the Study Area acts as a controlling feature and a discharge zone for the areas to both the west and east of the stream.

Figure 4-12 shows the extent of the plume of TCE that exceeds federal and state drinking water standards covers approximately 76 acres. It runs along the length of Commerce Street and to the west, under Kirby Lane to just beyond the intersection of South Brownell and Shunpike Roads. To the east of the unnamed stream, TCE was not detected in VP-34, VP-35, VP-37, and VP-55, suggesting that contamination generally does not continue past the stream to a significant degree. Most of the VOC contamination resides in the intermediate and deep overburden groundwater, mainly between 30 and 40 ft bgs.

Present within the TCE plume are two distinct “hot spots” a deeper one along Commerce Street in the southeastern portion of the Study Area, and a shallower one near along the western edge of the Study Area near the intersection of Shunpike and South Brownell Roads. The southeastern hot spot appears to be influenced by the unnamed stream that is a likely groundwater discharge area. Here, the shallow overburden concentrations are generally relatively low and are likely captured by the unnamed stream. In the western hot spot, the intermittent stream appears to be exhibiting enough influence on groundwater flow in this area of relatively flat horizontal gradients to prevent further migration to the west.

Figure 4-13 shows the extent of the plume of PCE that exceeds federal and state drinking water standards covers approximately 1.8 acres. It extends from the South Brownell Road/Shunpike Road intersection southwest to the western edge of the Kirby Lane cul-de-sac. Beyond this extent, PCE has not been detected at concentrations exceeding state and federal criteria since 2008.

4.4.3 SVOCs in Groundwater

SVOCs were analyzed in samples collected during December 2008, May 2010, and November 2010. In 22 samples collected during 2008, 15 SVOCs were detected (Table 4-14). Bis(2-ethylhexyl)phthalate, found in 20 samples, was detected most often. Concentrations ranged from 0.28 µg/L to 4 µg/L, with no results exceeding the action level. Naphthalene was detected in five of 22 samples with concentrations ranging from 0.3 µg/L to 23 µg/L. The remaining 13 SVOCs were detected in fewer than three samples, and no concentrations exceeded action levels. Most detections occurred toward the western portion of the Study Area in BR-1, the well installed in the till and straddling the weathered bedrock surface, and nearby AL-1, an intermediate overburden well.

In May 2010, fewer SVOCs (9) were detected; however, they were detected more frequently. Acetophenone, benzaldehyde, and bis(2-ethylhexyl)phthalate were detected in all 29 samples. Caprolactam was detected in 15 of 29 samples. Bis(2-ethylhexyl)phthalate was the only compound to exceed the action level. The highest concentrations of SVOCs were most often detected in intermediate overburden well AL-2. Table 4-15 presents the concentrations of detected SVOCs.

In November 2010, only four SVOCs were detected in any of the 45 samples. Each of the four SVOCs was only detected once, and no concentrations exceed action levels (Table 4-16).

4.4.4 Metals in Groundwater

The groundwater metals data include filtered (i.e., dissolved) and unfiltered (i.e., total) metals samples for the 2008 round, but only total metals for the remaining three rounds. The total and dissolved metals statistical summaries for 2008 are presented in Table 4-17 and Table 4-18, respectively. Tables 4-19, 4-20, and 4-21 present the statistical summaries for total metals during the May 2010, November 2010, and June 2012 rounds, respectively. Complete analytical results for non-VOCs in groundwater are provided in Appendix D-2. Certain metals of interest (arsenic, barium, cadmium, lead, and manganese) that frequently exceeded the screening criteria are discussed in detail below. Chromium results are also discussed below due to its relationship with hexavalent chromium detected in soil in the former Mitec Systems lagoon area.

Arsenic

Arsenic was detected in eight of 22 samples collected in 2008. Concentrations ranged from 2 µg/L to 10.2 µg/L and exceeded the action level of 10 µg/L in one sample. In the dissolved metals samples, arsenic was detected in five of 22 samples and concentrations ranged from 2.1 µg/L to 8.2 µg/L with no exceedances of the action level. The dissolved and total arsenic concentrations were similar, which suggests that most of the arsenic was present in the dissolved phase. The highest total and filtered results were from the same sample at ASI-04D2 on the east side of the unnamed stream, but the action levels were not exceeded at that location.

The May 2010 results revealed slightly higher concentrations of arsenic than in 2008. The mean concentration was 7.48 µg/L compared to 5.45 µg/L in 2008. The November 2010 mean arsenic result of 9.41 µg/L is slightly higher than previous rounds, and it was detected in 29 of 45 samples. Eleven of those detections exceeded the action level. In June 2012, the mean arsenic result was 9.7 µg/L and it was detected in all 18 samples.

Overall, arsenic is most concentrated in the south of the Study Area, in intermediate and deep overburden wells.

Barium

Barium was detected in nearly every sample. In 2012, barium was detected in 14 of 18 samples. Mean concentrations over the four sampling rounds were similar. The highest mean of 381 µg/L was measured in June 2012. Four samples had concentrations that exceeded the EPA action level of 2,000 µg/L. Those exceedances were detected in each of the four sampling rounds at BR-1. Samples from that well have consistently had very high concentrations. Three additional locations had concentrations that exceeded the VT action level of 200 µg/L. They were MI-08 and AL-15 (shallow overburden wells), and ASI-11D2 (a deep overburden well).

Cadmium

Cadmium was detected in about 20 percent of the samples collected. It was most frequently detected in May 2010 when it was detected in 16 of 29 samples. The highest concentrations were detected during the November 2010 sampling round with a mean concentration of 29.6 µg/L (significantly above the screening criteria of 58 µg/L); however, cadmium was only detected in two samples. Additionally, two samples from the previous round in May 2010, and one sample in 2008 showed elevated cadmium concentrations that exceeded action levels. Exceedances were detected at MI-8 and AL-2 for all rounds from which samples were collected.

Chromium

Total chromium was detected in several samples during each of the four sampling rounds. The highest mean concentration of 24.7 µg/L was detected during the November 2010; however, none of the samples from any of the four rounds exceeded the EPA and VT action levels of 100 µg/L.

A limited round of groundwater sampling for hexavalent chromium at three locations was performed in December 2013 to support the preparation of the HHRA. Samples were analyzed for hexavalent chromium although total chromium had not been detected exceeding the screening criteria. Of the three samples, total chromium and hexavalent chromium exceeded screening criteria in one sample (MI-8); however, the remaining samples had detection limits significantly higher than the screening criteria required for the HHRA. MI-8 is located to the west of the Mitec Systems facility.

Lead

Lead was detected in all but two samples collected in the four sampling rounds. The highest mean concentration of 12.8 µg/L was detected during the November 2010 sampling round, however, only one sample exceeded the EPA and VT action levels of 10 µg/L. During the 2012 round, two samples had concentrations exceeding the action levels.

Manganese

Manganese was detected in all but two samples collected in the four sampling rounds. Mean concentrations increased each round with the highest mean of 1,270 µg/L detected at MW-05D2 during June 2012. Sample results most frequently exceeded the action levels during the November 2011 sampling round, however, manganese concentrations were similar throughout the four sampling rounds.

4.5 Surface Water Analysis Results and Interpretation

Six surface water samples, collocated with sediment samples, were collected from the stream at the east side of the Study Area during September 2012 (Figure 2-6). One sample was collected upstream of the Study Area, REFERENCE-SW. One sample was collected from the furthest upstream location at the Study Area (PW-2-SW) and the furthest downstream location (PW-20-SW). Three additional samples were collected from the downstream half of the stream (PW-11-SW, PW-11-DUP-SW, and PW-17-SW).

Surface water samples were only analyzed for VOCs and anions. Statistical summaries of the surface water samples are reported in Table 4-22 and show detections of cis-1,2-DCE, TCE, and vinyl chloride. Reportable concentrations of chloride, nitrate, and sulfate were also detected. Complete results are provided in Appendix D-4.

In PW2-SW, the most upstream sample collected in the Study Area, no VOCs were detected. VOCs were detected in several surface water locations with the highest concentrations of cis-1,2-DCE, TCE, and vinyl chloride detected at PW-11-SW, located close to the southern end of Commerce Street. TCE concentrations decline downstream of PW-11: they were approximately half the original concentration (6 µg/L) by PW-17 and were below surface water standards at PW-20, the southernmost sampling location within the Study Area. 1,2-DCE concentrations

followed the same pattern. Vinyl chloride was not detected in samples other than PW-11-SW. At the REFERENCE-SW location collected upstream of the Study Area, no VOCs were detected.

4.6 Sediment Analysis Results and Interpretation

Six sediment samples were collected from the same locations as the surface water samples described above and shown on Figure 2-6. Samples were analyzed for VOCs, SVOCs, metals including mercury, and total organic carbon. Complete results are presented in Appendix D-5. One sample was collected upstream of the Study Area, REFERENCE-SED. One sample was collected from the furthest upstream location at the Study Area (PW-2-SED), and another from the furthest downstream location (PW-20-SED). Three additional samples were collected from the downstream half of the stream (PW-11-SED, PW-11-DUP-SED, and PW-17-SED).

4.6.1 VOCs in Sediment

No VOCs were detected in sediment samples.

4.6.2 SVOCs in Sediment

Relatively low concentrations of SVOCs were detected only in sample PW-20-SED, the most downstream sample, and in the REFERENCE-SED sample collected upstream of the Study Area. Concentrations of nearly all compounds exceeded the Region 3 Freshwater Sediment Benchmarks. However, none of the samples exceeded the Vermont probable effects concentration. Table 4-23 provides statistical summaries for SVOCs in sediment.

4.6.3 Metals in Sediment

Metals were detected in all six sediment samples collected from the stream. Table 4-24 provides statistical summaries for metals in sediment. The highest concentrations were detected almost exclusively in the most upstream sample, REFERENCE-SED. Only arsenic and copper concentrations were higher in other samples. In samples collected in the Study Area, the highest concentrations were detected primarily at PW-17-SED.

Manganese and zinc concentrations exceeded the Region 3 Freshwater Sediment Benchmarks at REFERENCE-SED. Copper concentrations exceeded the benchmark at PW-2. No other action levels were exceeded.

4.6.4 TOC in Sediment

TOC concentrations ranged from 0.24 percent to 1.8 percent, with the highest concentrations detected in the upstream reference sample. Other high TOC concentrations were detected in PW-7-SED and PW-2-SED. High TOC concentrations did not correspond with elevated metals or SVOC concentrations.

4.7 Indoor Air and Soil Vapor Intrusion

Indoor air sampling was conducted by EPA in June 2012, January 2013, and December 2014. Additional discussion of these sampling effort results are discussed in the HHRA included in Volume II. Table 4-25 provides statistical summaries for VOCs in residential air for the December 2014 sampling event.

EPA sampled various locations of residential and commercial buildings for the presence of TCE and PCE. Based on the results of the 2012 and 2013 events, EPA determined that the investigations did not show the potential for unacceptable risks via the vapor intrusion pathway and made the determination that there was no need for further investigation. However, VT DEC gained access to an additional residence in 2014 and collected air and sump water samples that contained high levels of TCE. VT DEC performed interim remedial measures to seal cracks in the basement floor and provide venting for the sump to reduce vapors entering the living space. In December 2014, no vapors were present in the living space of the home above criteria.

5.0 CONTAMINANT FATE AND TRANSPORT

The fate and transport of contaminants in the environment are determined by many factors. Their physical and chemical properties and the environmental media (i.e., soil, air, etc.) they are released to all determine the eventual fate of these chemicals. In the Commerce Street Plume Study Area, the combination of site-related contaminants, geologic and hydrogeologic conditions and surface features influence how contaminants migrate or become transformed as the result of degradation processes.

This section:

- describes the general fate and transport processes;
- identifies chemicals found in site-related media; and
- presents a qualitative assessment of the fate and transport of those particular chemicals.

Section 5.1 summarizes the general fate and transport processes and contaminant properties that influence fate and transport. Sections 5.2 through 5.4 discuss probable contaminant fates and transport in Study Area soils, groundwater, and surface water. Sediment is not considered to be a medium of concern because exceedances of screening criteria were detected only upstream of the Study Area or at the most distant downstream location. Section 5.5 summarizes the overall conceptual model of contaminant fate and transport in the Study Area.

5.1 Fate and Transport Processes

5.1.1 General Fate and Transport Processes of Soil Contaminants

Once organic and inorganic chemicals are released to the soil, a variety of processes occur that may cause them to become immobilized, degraded, or mobilized to another environmental medium. Some of these processes include:

- Volatilization – Chemicals having high Henry's Law coefficients or vapor pressures will readily enter the ambient air (volatilize) rather than remaining adsorbed to the soil particles. Once in the atmosphere, the chemicals may undergo further transport through additional processes such as advection, diffusion, or dispersion. Chemicals also can be transformed through chemical processes such as hydrolysis or photolysis.

- Leaching – Chemicals may be transported downward through the soil strata by dissolving in water from precipitation or by other liquids infiltrating through the soils. The leaching and subsequent mobilization are controlled by soil properties (e.g., adsorptive capacity, organic carbon content, clay content, or specific surface area) and by chemical properties (e.g., solubility, ability to partition to other phases).

- Runoff/Erosion – Even when chemicals are adsorbed (bound) to soil particles, they may still be physically mobilized from contaminated areas to other uncontaminated environmental media. Contaminants can be conveyed over land by runoff that occurs during precipitation events (dissolved in rainwater or adsorbed to suspended particles), or through the erosion of contaminated soils present on unstable slopes or topographic features. Additionally, wind erosion may act upon exposed contaminated soil and transport particulates from the original source area.

5.1.2 General Fate and Transport Processes of Groundwater Contaminants

Natural processes affect the fate and transport of chemicals that have migrated downward into groundwater from the vadose zone through precipitation, infiltration, and leaching. Advection is the principal contaminant transport mechanism in an aquifer. However, it is significantly affected by diffusion and dispersion. Chemicals can also be transformed by degradation and retardation. Each of the transport and transformation processes is described below briefly:

- Advection – Advection is the physical movement of dissolved phase contaminants or of particles within a natural fluid flow. This flow is in response to a gradient, such as pressure or hydrostatic. Dissolved contaminants which are conservative, that is, do not sorb to soil surfaces, will be transported at the same overall velocity as the groundwater.

- Molecular Diffusion – Diffusion is the propensity for chemical molecules to move along a concentration gradient from regions of higher concentrations to regions of lower concentrations as the result of random motion of molecules. Because this transport process occurs on the molecular scale, its effect is small in the early phases of release in comparison to the forces driving the more rapid advection processes; as time passes diffusion plays an important role in dissolved-phase plume spreading and persistence.

- Matrix Diffusion – Contaminants will diffuse into lower permeability materials causing contamination to spread away from preferential pathways where the majority of physical advection takes place in an aquifer. As contaminant concentrations drop in the preferential pathways, contaminants will diffuse back out of lower permeability zones into the

preferential pathways helping to maintain the dissolved phase plume in the preferential pathways. This is known as back diffusion.

- Dispersion – Dispersion results from groundwater flow around individual soil particles or lenses of material. The groundwater pathway becomes more convoluted as aquifer heterogeneity increases. Dispersion results in spreading of a contaminant plume over a larger area (both parallel and perpendicular to the hydraulic gradient) than would be expected by advective transport alone. The effect of dispersion is affected flow within preferential pathways.

- Geologic Preferential Flow – Preferential pathways for groundwater flow occur in aquifer systems due to heterogeneities in the subsurface soils and the bedrock matrix. Geologic materials that are more permeable and fractures allow greater flow of groundwater and chemicals. Even small variations in permeability and structure will create preferential flow pathways. This is a significant issue at most if not all contaminated sites.

- Infrastructure Preferential Flow – Preferential pathways for groundwater flow occur in aquifer systems due to utility trenches, building foundations, and other subsurface construction impacts. Buried utility piping and lines are often bedded in sand to prevent damage from cobbles and boulders shifting during settling. These zones of bedding sand are often significantly more permeable than the surrounding strata. Even small variations in permeability and structure will create preferential flow pathways. This is a significant issue at most if not all contaminated sites.

- NAPL Migration – NAPL transport differs from the transport of dissolved phase contaminants because it will have significantly different physical and chemical properties from water. When contacting the capillary fringe and water table, DNAPLs must displace groundwater to migrate below the water table. DNAPLs must have enough internal pressure head to exceed pore entry pressures caused by interfacial tension between the DNAPL and water. This is significantly affected by pore throat size and geometry. Geologic heterogeneities may cause the DNAPL entry pathways to be only a portion of the subsurface and cause tortuous DNAPL migration pathways. It is very common for DNAPLs to flow differently than groundwater is flowing. Once in place, the DNAPL serves a continuing source of contamination that may not be close to the original release.

- NAPL dissolution – Although considered non-aqueous, NAPLs such as TCE are soluble to a certain extent. NAPLs will dissolve into groundwater based on their solubility causing dissolved phase plumes. TCE may be considered to have higher solubility than some other DNAPLs and consequently, may no longer be present as DNAPL at sites where the TCE DNAPL was released years ago depending on the amount of TCE released.

- Biological Degradation – In biological degradation (biodegradation), microorganisms use available chemicals to obtain energy and nutrients through reduction-oxidation reactions (electron transfer). Biodegradation can occur under either aerobic or anaerobic conditions, depending on the organism and chemicals. Under aerobic conditions, carbon is oxidized by microorganisms to provide a net energy gain for growth and reproduction. Typically, low-molecular weight and soluble organic compounds are readily degraded. Aromatic hydrocarbons are used by microorganisms as a primary substrate (electron donor). Dissolved oxygen is used as the primary electron acceptor (chemical reduction) by the aerobic microorganisms. Once the oxygen is depleted, anaerobic microorganisms use other available electron acceptors causing those chemicals to be transformed to a reduced state. Chlorinated solvents are converted by anaerobic microorganisms to compounds with one less chlorine atom, and carbon dioxide to methane. The degradation process may produce chemicals not originally present in the Study Area. These daughter products may be more toxic than the original compounds released (e.g., vinyl chloride).

  Through sequential reductive dechlorination of chlorinated ethylenes, PCE may be degraded to ethane through the following sequence: *PCE → TCE → 1,1-DCE/cis-1,2-DCE/trans-1,2-DCE → vinyl chloride → ethene → ethane*. Ethene and ethane are readily used by other microorganisms. Certain strains of the naturally occurring bacteria *Dehalococcoides* can provide complete dechlorination of PCE-TCE through ethene. These, however, are not present at all sites.

- Abiotic Degradation – Abiotic degradation mechanisms include hydrolysis, oxidation, and reduction. Hydrolysis is the process where a chemical molecule and a water molecule are both split and recombine to form new chemicals. Oxidation consists of the loss of electrons by an organic compound or by a metal ion. Reduction is the chemical reactions whereby an organic compound or by a metal gains electrons. The dominance or effectiveness of

these transformation processes are governed by factors such as temperature, pH, solubility, etc.

- Retardation – Includes both adsorption/desorption and absorption.

- Reversible adsorption – Desorption reactions cause contaminants to move more slowly than normal groundwater flow. During migration through an aquifer, an organic molecule may adsorb organic carbon on soil particles slowing the overall chemical transport with the groundwater flow. The retardation factor (R) is governed by the compound specific partitioning coefficient (K_{oc}) of organic compounds and the fraction organic carbon content (f_{oc}) and may be expressed by the distribution coefficient (K_d):

$$K_{oc} \times f_{oc} = K_d$$

Retardation (R) can be estimated where $R = [1 + (\rho / n) \times K_d]$
where ρ = bulk density of porous media and n = porosity

Adsorption is a physical action and is reversible based on equilibrium partitioning between the concentration of contaminants in groundwater and the concentration of contaminants adsorbed to the f_{oc} in the aquifer matrix.

- Contaminants may also be attenuated when absorbed to the subsurface matrix. Absorption is a chemical reaction and not generally reversible.

5.2 Potential Sources

The primary contaminants in the Study Area are VOCs (TCE). Metals (primarily chromium) were identified as potential sources of contamination in historical investigations, but do not appear to be the primary contaminants at present. Fate and transport of these contaminants is described in the following sections.

5.2.1 VOC Sources

Previous investigations identified the leach field and unlined lagoon on the former Mitec Systems property as potential sources for the groundwater contamination in the Study Area (Figure 1-2).

Soil borings were performed there and in other areas of high potential contamination (such as subsurface topographic depressions) to determine if significant contaminant mass and/or DNAPL could be found.

The borings at the Mitec Systems property (SB-1, SB-6, SB-12-5, and SB-12-6) did not encounter concentrations of TCE above 66 µg/Kg in soil. These low concentrations were confirmed with the groundwater profiling (VP-01, VP-09, and VP-10) and monitoring well sampling (MI-01, MI-02, and MW-03D). Groundwater concentrations at depth ranged up to 320 µg/L (MW-03D), which suggests that there is not a significant mass of VOCs sorbed to the soil in the area of the unlined lagoon.

Any DNAPL that may have been disposed of at the Mitec Systems facility has likely migrated downwards and has sorbed to the finer grained sand and silt layers found at depth in the sandy unit of the overburden aquifer and is a continuing source of dissolved-phase contamination. As TCE is considered a higher solubility DNAPL, and the release likely took place at least 30 years ago, it is probable that minimal residual amounts of DNAPL, if any, remain at the Study Area.

Soil sampling was performed at other target locations with extremely high TCE concentrations in groundwater to attempt to find DNAPL and further characterize potential sources, however, TCE was detected in only one soil sample above 10,000 µg/Kg: 12,500 µg/Kg at approximately 38 ft bgs in SB-02 (Lot 7:19:23). DNAPL was not detected in any of these borings. Other potential sources identified in previous reports (e.g., Lot 8:19:2 and Lot 8:19:12) are located in the northern portion of the Study Area and do not appear to be continuing, significant sources of TCE contamination.

5.2.2 Metal Sources

The primary source of metals identified in previous reports was the Mitec Systems chromium plating waste lagoon shown on Figure 1-2. SB-12-5 was the only soil boring with elevated chromium in the subsurface (260 to 320 mg/Kg). All other borings had similar, relatively low (generally less than 20 mg/Kg) chromium concentrations, so the chromium source appears to be this lagoon. Chromium fate and transport is discussed further in Section 5.3.

5.3 Contaminant Fate and Transport in Soils

Plating rinse waste and sludge waste were released directly to an unlined wastewater lagoon. Material from the bottom and sides of the lagoon was excavated in 1985 and very little contamination remains in the soils in the vicinity of the former lagoon. The highest concentrations of VOCs in soils were detected at locations with high groundwater concentrations. One sample located close to the former lagoon (see Section 5.2) also contained the only SVOCs detected in soil. Because SVOCs were detected in only one sample, they are not described further in this section. Two metals, arsenic and chromium, exceeded screening criteria in numerous samples.

5.3.1 VOCs Fate and Transport

The fate of the VOCs in soil is dependent on the properties of the chemicals and the receiving environmental medium. For TCE in soils the fate includes volatilization, leaching to groundwater, or degradation in-place. The soils may also be eroded and transported via overland flow or dust dispersion, but given the relatively flat topography and presence of cover, these are not considered to be a significant source of VOC transport.

TCE has a relatively high vapor pressure and would be expected to volatilize from the shallow subsurface soils and potentially contribute to a vapor intrusion pathway. EPA collected indoor air and sub-slab soil gas from a representative sample of seven structures (five residential, two commercial) across the Study Area in June 2012 and January 2013, and made the determination that there is no widespread vapor intrusion pathway from the groundwater plume into buildings in the Study Area. At a sixth residential location near the intersection of South Brownell Road and Shunpike Road, vapors emanating directly from contaminated groundwater in a basement sump have the potential to impact indoor air quality. This is discussed further in Section 5.4.1.

Soil samples were collected in part, to determine locations and depths of potential DNAPL. However, even in locations with the highest groundwater concentrations, soil TCE concentrations were not higher than the nearby groundwater concentration as would be expected if DNAPL were present. For example, the highest TCE concentration (12,500 µg/Kg) was detected at approximately 38 ft bgs in SB-02 (Lot 7:19:23). This location is adjacent to MW-04D, which had a groundwater concentration of up to 55,000 µg/L suggesting that DNAPL may not be present and the groundwater contamination is more in the dissolved-phase. The detected TCE concentrations in soil (SB-01 through SB-06 and SB-12-1 through SB-12-2) were significantly

above the MCL-based leaching RSL (1.8 µg/Kg), suggesting that they could be a continuing source of groundwater contamination.

The lack of daughter products in the soil samples (DCE isomers or vinyl chloride) suggest that the biodegradation of the TCE adsorbed to soil particles has been minimal. Therefore, loss of TCE mass in the soil is likely to be due to other mechanisms. VOCs in groundwater are discussed in Section 5.4.

5.3.2 Metals Fate and Transport

As presented in Section 4, two metals, arsenic and chromium, are widespread in Study Area soils. No other metals exceeded any screening criteria in soil samples collected for the RI. Arsenic and chromium adsorbed to soil particles may be transported via fugitive dust emissions, erosion, or leaching to groundwater. Mass transport of soil particles via fugitive dust or water erosion is considered unlikely because grass or asphalt covers most of the Study Area, and it is relatively flat.

Arsenic concentrations were consistent across the Study Area and at all depths measured. The maximum concentration was approximately twice the minimum concentration of all RI samples collected. Chromium was more variable, with the highest concentration from one boring in the vicinity of the former Mitec Systems property. Arsenic and chromium exceeded screening criteria in depths up to 45 feet bgs, and at a location cross-gradient to any known source of metals (SB-12-3). This indicates that the metals may be a background condition rather than related to local operations.

The arsenic and chromium concentrations are consistently above the risk-based soil screening level (SSL) of 0.0013 mg/Kg and 0.00059 mg/Kg, respectively, suggesting that the metals detected in groundwater are from the ubiquitous concentrations in soil.

Chromium concentrations in soil were conservatively compared to the screening criteria for hexavalent chromium. Hexavalent chromium samples were collected in groundwater (VT AEC, 1986). Most of the total chromium in the source area samples collected in 1984 consisted of hexavalent chromium, but it decreased to approximately one third by mid-1985. Although the previous hexavalent chromium results from 1985 suggested that aquifer conditions encourage

trivalent chromium formation, chromium speciation sampling was not performed between 1986 and 2013.

In December 2013, as part of this RI, three soil borings were performed and three groundwater samples were collected for the purpose of chromium speciation. The locations were selected based on the historical total chromium results. Two of the soil borings were performed in the former lagoon area and one was performed on the property to the south of the intersection of Shunpike Road and South Brownell Road. Hexavalent chromium at a concentration exceeding the criterion was found in one of the three borings, in the area of the former lagoon. Only one of the three groundwater samples contained hexavalent chromium at a detectable concentration. Therefore, chromium in the saturated zone soils is expected to also be primarily trivalent chromium at present and chromium leachability is not expected to be an ongoing concern. This condition is consistent with the data obtained prior to 1986. Figure 4-14 depicts the current extent of hexavalent chromium impacted soils in the Study Area.

5.4 Contaminant Fate and Transport in Groundwater

Groundwater flows generally from north-northeast to south-southwest, with some amount of radial flow west toward Kirby Lane and east toward the stream near the eastern boundary of the Study Area. The Study Area contains discontinuous lenses of fine material that become more extensive with depth and eventually thicken to form the continuous clay layer. The presence of these lenses, the continuous clay layer, and the relatively flat gradient suggest that groundwater has relatively low potential to move upward or downward between the overburden and bedrock. Because of these conditions, the contamination is confined to the upper 30-40 feet of the subsurface. The contamination in the finer grained, low permeability materials will act as a continuing source of dissolved phase contamination in the higher permeability areas through the action of back diffusion.

Only one SVOC sample collected in 2010 and one nitrate sample collected in 2012 exceeded a screening criterion. None of the dioxin/furan groundwater samples collected as part of RI activities exceeded screening criteria, nor were PCBs detected in groundwater. Therefore, only VOCs and metals are discussed in the following subsections.

5.4.1 VOCs Fate and Transport in Groundwater

Current TCE concentrations are highest close to the bottom of the sandy unit (above the clay), with two hotspots: one close to the intersection of Shunpike Road and South Brownell Road, and one east of the southern end of Commerce Street. Groundwater contamination in the shallow zone is limited to the area west of Brownell Road and the immediate vicinity of the stream on the southeastern portion of the Study Area.

The only well available for evaluation beneath the clay layer is BR-1, which is screened at the bottom of the till. This well contained concentrations of TCE (generally, about 50 µg/L after the 2008 sampling) and low concentrations of BTEX compounds. The screened interval for the well is separated from the sand unit by approximately 50 feet of clay and till, and VOC migration through this material appears unlikely. The presence of VOCs in this well may be from drag-down during well construction, improper sealing from above, or another, non-local source of bedrock contamination.

Potential for DNAPL

DNAPL has not been observed or detected in the Study Area. Although elevated concentrations of TCE measured at depth (55,000 µg/L in MW-04D and 61,000 µg/L in VP-16) would suggest a DNAPL source, it is more likely that over time any residual DNAPL has dissolved and/or diffused into the finer grained material at depth and continues to act as a dissolved-phase source through back-diffusion. A relatively small volume of TCE could contaminate large areas of the aquifer. In areas where groundwater TCE concentrations exceeded 10,000 µg/L, three saturated soil samples were tested for the presence of DNAPL using the “Oil-Red-O” field test. The results of these tests did not indicate the presence of DNAPL. While it is probable that most of any TCE DNAPL has dissolved, limited amounts of residual phase DNAPL in the form of ganglia and small isolated blobs may remain in the Study Area.

VOC Transport

The data indicate that the most likely source of the release of TCE and PCE was the former Mitec Systems property. The VOCs appear to have been released at depth via the unlined lagoon and the sanitary leach field in the late 1970s and early 1980s. This long period from initial release has allowed the plume to migrate throughout the Study Area. Factors that may have influenced the

lateral movement of contaminated groundwater include radial groundwater flow in the area; on-going local pumping from sump pumps; pumping of residential wells along South Brownell Road prior to 1985; and the presence of utilities (water and sewer lines) at depths of eight or more feet below grade. Vertical movement of contaminated groundwater is likely most strongly impacted by the presence of silty layers in the subsurface and by the clay unit, which appears to act as an aquitard throughout the Study Area. These less permeable units may represent areas where sorbed VOCs may continue to be a secondary source of contamination, and have likely resulted in areas with distinct depths of contamination.

Any DNAPL at the initial release point would have migrated downward, and would be expected to accumulate at the top of the clay layer, although some may have come to rest on less permeable silty lenses. The DNAPL would be an on-going source of contaminated groundwater wherever it remains.

Discharge Zones

Some area residences have sump pumps installed to remove water from basements. The frequency of pump operation and rate of water removal varies between the residences depending on the elevation, materials, and construction of the basements, but the sump pumping represents shallow groundwater discharge and the potential to affect local groundwater flow and contaminant migration.

During the residential 2014 surficial soil and sump sampling event, it was determined that the water entering residential basements in properties on South Brownell Road and Kirby Lane and subsequently being discharged to the ground surface did not contain TCE or PCE at concentrations exceeding criteria with the exception of one property, 830 South Brownell Road. It appears that the operation of a sump pump is having a much-localized impact on the groundwater plume as it is shallower at this location and elevated concentrations of TCE were found in water samples taken from the basement sump. TCE was also detected in one of four locations where sump water is discharged to the ground surface, although at a concentration that did not exceed the residential screening level.

The porewater results and the groundwater results immediately east of the unnamed stream indicate that the Commerce Street plume at least partially discharges to the stream between PW-

4 and PW-16. Most of the porewater samples have significant concentrations of daughter products cis-1,2-DCE and vinyl chloride, unlike the overburden groundwater. The locations close to the Commerce Street portion of the plume also have significantly higher vinyl chloride concentrations than upstream concentrations. These two trends suggest that streambed conditions or the subsurface materials in the immediate vicinity of the stream promote TCE degradation, probably due to the higher amount of organic carbon available to support microbial growth.

Biodegradation and Plume Persistence

Historical groundwater analytical results indicate the presence, albeit rare and at low concentrations, of reductive dechlorination daughter products from the attenuation of TCE. The high concentrations of TCE, however, likely mask lower level daughter products in several wells due to elevated quantitation limits. Due to this occurrence, it is difficult to truly evaluate the presence of the daughter products that are generally observed at a much lower concentrations.

Concentrations of TCE have shown a slight decreasing trend when looking at the data between 2008 and 2012 at most locations, with the exception of the MW-08 series wells located in the western portion of the plume.

Microbial growth and degradation of TCE requires appropriate aquifer conditions and sufficient nutrients. The EPA natural attenuation protocol (EPA, 1998) can be used to score plumes for biodegradation. The EPA's BIOCHLOR natural attenuation model has a scoring process based on simple yes or no responses to determine if anaerobic biodegradation is possible. Possible scores are 0 to 5 (inadequate evidence for anaerobic biodegradation), 6 to 14 (limited evidence), 15 to 20 (adequate evidence), and more than 20 (strong evidence). The western hot spot centered on the MW-08 cluster scores 13, suggesting that the area has limited evidence of anaerobic biodegradation. The central portion of the dissolved phase plume in the deep overburden centered on MW-04D scores 11, suggesting that this area also has limited evidence of anaerobic biodegradation. These plumes were selected for further analysis using BIOCHLOR. Other areas of high TCE concentrations were too close to the stream and did not have enough downgradient well control to determine degree of natural attenuation.

Appendix J provides BIOCHLOR simulations of the western hot spot and the Commerce Street area. The modeled decay of TCE shown there fits relatively well with the actual downgradient TCE concentrations, if a 30 to 35-year old source is being modeled. This is consistent with the known history of the Study Area. However, accurate site-specific rates of biodegradation cannot be determined, because of the limited amount of daughter products reported above detection limits. In addition, there are only a few wells located downgradient of the plume. More detailed natural attenuation evaluations will be performed as part of the FS.

The elevated 1999 site investigation results (HSI GeoTrans, 2000) were compared to more recent (2010) results, using either the same well or a well within 50 feet laterally and a similar depth. At 3 of 4 wells, concentration decreased over the 11 years, likely because of advective groundwater flow. However, the elevated groundwater concentrations at the MW-06 cluster suggest no significant mass loss is occurring in this location. Although the plume centroid may have migrated slightly, the plumes appear to be persistent over the long term.

1999 Monitoring Well	TCE (µg/L)	DCE (µg/L)	2010 Monitoring Well	TCE (µg/L)	DCE (µg/L)
ASI-01D2	18,500	21	ASI-01D2	50,000	ND
ASI-02D2	15,000	20	ASI-02D2	435	42
ASI-15D2	11,000	10	ASI-15D2	5,500	26
ASI-16D2	11,000	8	ASI-16D2	5,400	15

5.4.2 Metals Fate and Transport in Groundwater

Several metals exceeded screening criteria, but the concentrations of the associated filtered samples were significantly lower. This suggests that the elevated metals concentrations measured were from sample turbidity and transported particulates, instead of metals dissolved in groundwater. Also note that a number of the samples were grab samples from groundwater profiling. These were collected prior to stabilization and from a part of the formation that had not been developed. Turbidity and metals in such samples are expected to be higher than in undisturbed groundwater. The metals, which generally exceeded screening criteria in monitoring wells, were arsenic and manganese. These two metals are common in Vermont soils and groundwater. Arsenic, iron, and manganese are common constituents in New England groundwater. Arsenic and manganese were detected in 8% and 46% of wells, respectively, in one

study (Ayotte et. al., 1999). Arsenic is often found in glacial drift in Vermont, with concentrations over 10 µg/L found in public supply wells across the state (Corenthal, 2010).

When dissolved, metals are conveyed with the ambient groundwater flow via advection, diffusion, and dispersion. As noted before, the primary groundwater flow direction is expected to be primarily lateral rather than vertical (downward) based on stratigraphy and groundwater gradients.

Geochemical conditions in the aquifer (pH, redox) suggest that some of the metals may transform to an insoluble state. Groundwater geochemistry encountered during transport and metals speciation play an important role in determining the adsorption/desorption and precipitation/dissolution of metals species to or from soil particulates. Groundwater metals results are generally low, well below solubility and not likely to be subject to precipitation. Therefore, the adsorption/desorption transport mechanism is likely the more-dominant influencing metals contaminants. Given the near neutral pH and moderate oxidative conditions (ORP generally between -100 and 100 mV) in groundwater, these metals are likely to adsorb or attenuate in groundwater. The generally low metals concentrations in groundwater in the Study Area support this hypothesis.

5.5 Contaminant Fate and Transport in Surface Water

The stream in the eastern portion of the Study Area is the primary receptor of contaminated groundwater, as indicated by the non-detect concentrations of TCE in deep overburden groundwater immediately across the stream from the center of the Commerce Street TCE plume. The upward gradient located along the stream may be allowing some shallow contamination through to the east side of the stream; however, the presumed westerly groundwater flow east of the stream contains the contamination locally. As described in the previous section, TCE in porewater within the streambed appears to be degrading. The stream itself also contains TCE and daughter products at and downgradient of where the TCE plume intersects it.

Reductive dechlorination processes are generally observed in anaerobic environments such as swamps, marshland, and other aquatic systems. Environments such as these often contain bacteria (e.g., *dehalococcoides*) capable of acting as electron donors by which they use hydrogen, produced as a natural byproduct of various fermentation reactions by other microorganisms, to replace chlorine atoms.

This scenario in which the stream is acting to naturally attenuate TCE discharging into the stream is supported by a comparison of the TCE concentrations detected at MW-06M/D (44,000-50,000 µg/L) and the porewater results at the two closest sampling points, PW-08 and PW-09 (41 µg/L and non-detect TCE shown on Figure 4-3). The scenario is also supported by the fact that at PW-08 and PW-09, porewater concentrations of cis-1,2-DCE are higher than the TCE concentrations, whereas at MW-06, the DCE concentrations are much lower than the TCE concentrations.

Surface water concentrations are significantly lower than porewater concentrations at the same sampling locations, likely because of dilution, and the individual VOC concentrations drop by approximately a third as the water moves from the plume (PW-11 to PW-17). Near PW-20, all concentrations have decreased to below screening criteria. This suggests that the stream is not contributing significant concentrations of VOCs to other surface water in the area.

5.6 Contaminant Fate and Transport Summary

The Site consists of an extensive TCE plume and smaller areas of metals contamination in soils and groundwater. The metals in the Study Area either are confined to the soils in the immediate vicinity of the former Mitec Systems lagoon, or represent background conditions.

The groundwater plume has two areas or “hot spots” of high concentrations of TCE (Figures 4-3 through 4-5). The western portion of the plume is centered on the intersection of Shunpike Road and South Brownell Road and consists of TCE, with associated lower concentrations of PCE. The highest VOC concentrations are in the shallow and intermediate sand unit possibly due to a localized groundwater discharge zone or the ongoing discharge of contaminated groundwater to the ground surface.

The highest TCE concentrations in the portion of the plume running the length of Commerce Street are found in the deep overburden and to a lesser extent, the intermediate overburden. Although the original source of this contamination is thought to be the discharge of free-phase and dissolved-phase chlorinated solvents in the former unlined lagoon and sanitary leach field on the Mitec Systems property, the current source of elevated TCE concentrations in groundwater is likely to be sorbed contaminants and to a lesser extent residual DNAPL migrating mainly through

advection and matrix diffusion toward the southeastern end of Commerce Street. Contaminant migration is likely mostly lateral due to layering of differing relative conductivities in the sand and silt units observed throughout the Study Area and downward and has come to rest on more resistant (silt or clay) layers. Vertical upward gradients near the eastern stream are minimal; however, the stream appears to be at least a shallow discharge zone for groundwater and serves as a flow divide even for the deeper groundwater explaining why higher concentrations are not typically found too far beyond the stream to the east. The exception is the stream's western meander in the vicinity of VP-38 (intermediate groundwater) and VP-22 (deep groundwater). Although the plume appears to migrate below the meander, the plume is bounded immediately south of (in line with) the rest of the plume.

Groundwater entering the unnamed stream along the eastern boundary of the Study Area appears to be partially attenuated by natural processes within the streambed, although some component of TCE contamination does enter the stream. Shortly after entering the stream, the TCE concentrations decrease significantly due to volatilization and/or dilution and do not pose risk to receptors beyond PW-20, at the southern edge of the Study Area.

Metals are common in soil and groundwater; however, the metals which exceed screening criteria are present at all depths and do not appear to coincide with the TCE plumes and are therefore considered to represent background conditions, given their relatively low mobility.

6.0 RISK ASSESSMENTS

Risk assessments were completed for human health and ecological receptors. The results of these assessments, included in Volume II, are summarized in the sections below.

6.1 Human Health Risk Assessment (HHRA)

This section presents a summary of the baseline HHRA conducted for the Site. The objective of the HHRA was to estimate potential current and future human health risks from the presence of contamination in the soil, groundwater, sediment, surface water and indoor air in support of the RI and to provide the basis for determining appropriate remedial measures (if applicable) for these media as part of a feasibility study.

Scenarios and receptors evaluated included:

- Current/future recreational visitors exposed to sediments and surface water at the unnamed stream,
- current/future construction workers exposed to shallow groundwater and vapors in excavation trenches,
- future residents exposed to groundwater as drinking water and other household uses,
- current/future residents exposed to contaminants in shallow groundwater through inhalation of volatiles in indoor air (semi-quantitative assessment), and
- current commercial/industrial workers and future residents exposed to contaminants in soil (semi-quantitative assessment).

The HHRA quantitatively evaluated non-cancer health hazards, cancer risks and lead exposures. Table 6-1 presents a summary of the quantitative risk assessment findings for the Site.

Sediment and Surface Water

For current/future recreational visitors exposed to sediments and surface water, non-cancer health hazards (individual contaminant hazard quotients (HQs) or organ-specific hazard indices (HIs)) were less than one and the cancer risk estimates were within or less than the EPA targeted cancer risk range (1×10^{-4} to 1×10^{-6}).

Groundwater

For current/future construction workers exposed to shallow groundwater and volatile compounds in trench air during excavation activities, the cancer risk estimates are within the EPA targeted cancer risk range (1×10^{-4} to 1×10^{-6}); however, the reasonable maximum exposure (RME) HI is greater than 1.0, indicating potential adverse non-cancer effects for these construction workers. The sole contaminant with an HQ in excess of 1.0 is TCE, which impacts the immune system. The HI for the immune system is the only target organ-specific HI greater than 1.0.

For hypothetical future residents exposed to groundwater as drinking water, HIs are greater than 1.0 and cancer risk estimates exceed the EPA targeted cancer risk range (1×10^{-4} to 1×10^{-6}). TCE is the greatest contributor to the total HIs. Individual HQs for cis-1,2-dichloroethene (cis-1,2-DCE), methylene chloride, cobalt, arsenic, and iron are also greater than 1.0. Target organ-

specific HIs exceed 1.0 for immune system, liver, kidney, thyroid, skin, and gastrointestinal tract. The greatest contributors to cancer risk are TCE, chromium, methylene chloride, vinyl chloride, arsenic and 1,2-dichloroethane (1,2-DCA). Individual cancer risk estimates for each of these contributors are greater than 1×10^{-6} under the RME scenario. Lead evaluation results using the Integrated Exposure Uptake and Biokinetic (IEUBK) model for estimating the probability of a child's blood lead concentration exceeding 10 µg/dL concluded lead was not an issue for hypothetical future residents exposed to groundwater as drinking water.

Soil

Polycyclic aromatic hydrocarbons (PAHs) and metals are present at concentrations above screening levels at 96 Commerce Street and metals concentrations above screening levels at the properties along South Brownell and Shunpike Roads. Chromium speciation data (December 2013) indicate that hexavalent chromium is only present at the 96 Commerce Street property in the area of the former unlined lagoon. EPA's semi-quantitative evaluation of soil concluded that non-cancer health hazards (individual contaminant HQs or organ-specific HIs) were less than one and the cancer risk estimates were within or less than the EPA targeted cancer risk range (1×10^{-4} to 1×10^{-6}). A second more conservative evaluation of risk assuming all chromium in the soil in the area of the former lagoon was the more toxic hexavalent form resulted in an excess cancer risk that exceed EPA risk range under a residential scenario.

Vapor Intrusion

Current/future commercial workers and residents potentially exposed through inhalation of indoor air in businesses and homes overlying the VOC plume were evaluated in a separate vapor intrusion evaluation. EPA conducted sub-slab soil gas and indoor air sampling at five residential and two commercial properties to evaluate this potential pathway. No contaminants associated with the Site were detected above conservative health-risk based screening levels, indicating that there is not a wide-spread complete vapor intrusion pathway across the Study Area. However in one residence, vapors emanating from contaminated groundwater in the sump do have an impact on indoor air quality and if not vented, would present a risk to human health.

6.2 Screening Level Ecological Risk Assessment (SLERA)

This section presents a summary of the SLERA conducted for the Study Area. The objective of the SLERA was to estimate potential ecological risks from the presence of contamination in the sediment and surface water in support of this RI and to provide the basis for determining appropriate remedial measures (if applicable) for these media as part of a feasibility study.

For the purposes of the SLERA, the Study Area encompasses the former AIP and a portion of the adjacent residential area to the west. Surface water at the Study Area consists of a small, unnamed stream just east of Commerce Street, which flows in a southerly direction into Tributary #4 to Muddy Brook. A small wetland area is associated with the confluence of the unnamed stream and Tributary #4 at the southern end of Commerce Street. The SLERA specifically focused on potential impacts to the benthic invertebrate community of the unnamed stream that intersects the contaminated groundwater plume emanating from the Mitec Systems facility.

The SLERA evaluated potential impacts by comparing sediment and surface water chemical concentrations to screening benchmarks and by evaluating the results of a quantitative assessment of the benthic community habitat, structure, and composition in the wetland Muddy Brook tributary adjacent to the Study Area.

Surface Water

Surface water and pore water concentrations were compared to available ambient water quality criteria (AWQCs) and other benchmarks. In the most recent round of sampling the only chemical that exceeded a criteria or benchmark value was chloride at the two most downgradient sample locations (PW-17 and PW-20). Chloride and the associated increase in conductivity are not site-related and the levels observed in these samples appear to be related to road salting activity.

Sediment

There were several polycyclic aromatic hydrocarbon (PAH) exceedances of Threshold Effect Concentration (TEC) benchmarks in sediments; however, there were no exceedances of Probable Effects Concentrations (PEC), and it was concluded that concentrations for chemicals with these associated benchmarks would not result in toxic effects. While no VOCs were detected in sediments, where available, detection limits were compared to equilibrium partitioning sediment

benchmarks (ESBs) and it was determined that adverse impacts associated with VOCs were unlikely.

Benthic Community

The benthic community assessment evaluated habitat conditions and, infaunal and epifaunal benthic community metrics at several surface water and sediment sampling locations. The habitat assessment followed EPA's Rapid Bioassessment Protocol (Barbour et al, 1999) and showed that habitat conditions were similar among the offsite-control station and three of the four downstream samples, indicating the community metric comparisons among stations are justifiable. Community metrics were lowest at stations PW-11 and PW-17 but recovered at the most downgradient station PW-20. The lower community metrics observed at stations PW-11 and PW-17 were attributed to the higher chloride and conductivity levels observed and not site-related contamination.

It is concluded that VOCs entering the unnamed stream do not have a significant ecological impact on aquatic macroinvertebrates or the infauna or epifauna.

7.0 CONCLUSIONS

Several site investigations have been conducted since contamination was discovered in groundwater in 1985. Results from previous investigations were used to determine media and areas of interest for this RI, and were incorporated into the current Conceptual Site Model for the Study Area. Nobis performed site-wide investigations of environmental media from 2008 through 2014. These included a survey and redevelopment of existing useable monitoring wells; geophysical studies; monitoring well installation; soil borings, collecting samples of groundwater from discrete intervals via Geoprobe® or Waterloo™ Profiler, slug tests; and sampling of soil, groundwater, surface water and streambed porewater. During this period, indoor air and soil gas sampling was performed to support the HHRA and ecological samples from the unnamed stream were collected in support of the SLERA.

Groundwater and contaminant flow is constrained by the local geology. The shallow materials are sand fining downward to silt and readily transmit water. The sand and silt are layered with more fine materials, causing more lateral than vertical groundwater movement. Clay and till layers, below the sand are generally 50 feet thick and prevent further downward movement. Advective

groundwater flow is primarily lateral rather than vertical; therefore, VOC concentrations at depth are likely to be from historical downward movement of DNAPL and subsequent dissolution.

In groundwater, the primary contaminant is TCE, which was detected at extremely high concentrations especially in the intermediate and deep overburden. TCE concentrations there are greater than 10,000 µg/L, typically suggesting a potential residual DNAPL source. The age of the release, the stratification of the overburden material, and the relatively flat hydraulic gradient suggest that it is more likely that the DNAPL has dissolved and the high concentrations are a result of matrix diffusion from the finer-grained material and desorption from organic carbon in aquifer matrix. PCE was also detected although with less frequency than in earlier studies.

TCE contamination in the shallow overburden is limited to two locations within the Study Area, one area along the western boundary of the Study Area in the vicinity of the intersection of South Brownell Road and Shunpike Road and the other area along the southeastern portion of the Study Area, downgradient of Mitec Systems and adjacent to the unnamed stream.

TCE contamination in the intermediate overburden of the Commerce Street Plume is more extensive, but generally appears to end close to or just to the east of the unnamed stream. Hydraulic gradients in the vicinity of the stream are minimal, suggesting that the intermediate groundwater may flow beneath the stream rather than move upward towards the stream. However, based on the results of the porewater and surface water studies and limited amount of contamination to the east of the stream, it is apparent that discharge to the stream is occurring.

A few metals were detected above screening criteria in groundwater. Elevated cadmium was detected consistently in two wells, but these appear to be localized and not indicative of a larger issue. Lead and manganese concentrations exceeded screening criteria in a significant number of samples, but have not been linked to specific site-related sources and are common in New England.

In surface water and porewater at the stream in the eastern portion of the Study Area, the primary contaminant is TCE. Both surface water and porewater show significant concentrations of TCE daughter products (DCE and vinyl chloride), suggesting that biodegradation is occurring in the groundwater discharge zone of the stream. DCE and other daughter products were detected in wells away from the stream suggesting that some degradation is occurring in other portions of the

Study Area. The VOC concentrations are highest in the vicinity of the discharge area of the inferred eastern portion of the plume, but decrease downstream to undetectable levels.

In soil, the primary contaminants are PAHs, arsenic and chromium. TCE in soil is limited to isolated areas including a small area on the residential property located at 830 South Brownell Road which is associated with sump water discharge. Arsenic may be attributed to a background condition. The highest chromium exceedances were found near the former Mitec Systems lagoon, but other soils away from known sources, including the western portion of the Study Area, exceeded screening criteria as well, suggesting that chromium may be partially attributed to a background condition. PAHs and the more toxic hexavalent chromium were detected at elevated concentrations in the former lagoon area.

Indoor air sampling was performed in June 2012 and January 2013. The results of these studies were used in support of the HHRA and based on the lack of detections of Site-related contaminants exceeding conservative risk-based levels, it was determined that the vapor intrusion pathway is not complete. In June 2014, an investigation of basement sumps and the discharge points indicated that water being collected in the sumps of basements of selected properties on South Brownell Road and Kirby Lane was not impacted by the plume. The one exception is the residential property located at 830 South Brownell Road where water entering the sump contained high levels of TCE and vapors emanating from the sump were a potential health risk. The VT DEC installed an engineered remedy for the property that included a system to capture the vapors and vent them to the outside along with the water from the sump.

A SLERA was prepared for the Study Area documenting the risks to the ecological health of the Study Area. The results of the SLERA indicated that there were no actionable risks to the ecological health of the unnamed stream. The completed assessments are included in Volume II.

8.0 REFERENCES

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TABLES

Table 2-1
December 2008 Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Date	Sample Type	Dioxin/Furans	TAL Metals Total/Dissolved	Polychlorinated Biphenyls	SVOCs	VOCs
AL-1	AL-001-121708A	12/17/2008		x	x	x	x	x
AL-14	AL-014-121608A	12/16/2008		x	x	x	x	x
AL-15	AL-015-121908A	12/19/2008						x
ARC-3	ARC-003-121708A	12/17/2008		x	x		x	x
ASI-02D2	ASI-002D2-121808A	12/18/2008			x		x	x
ASI-02D2	ASI-002D2-121808AD	12/18/2008	Duplicate		x		x	x
ASI-04D2	ASI-004D2-121808A	12/18/2008		x	x	x	x	x
ASI-05D2	ASI-005D2-121808A	12/18/2008			x		x	x
ASI-11D2	ASI-011D2-121908A	12/19/2008			x		x	x
ASI-14D2	ASI-014D2-121608A	12/16/2008		x	x	x	x	x
ASI-14D2	ASI-014D2-121608AD	12/16/2008	Duplicate	x	x	x	x	x
ASI-14S	ASI-014S-121608A	12/16/2008		x	x	x	x	x
ASI-15D2	ASI-015D2-121808A	12/18/2008		x	x	x	x	x
ASI-23D2	ASI-023D2-121608A	12/16/2008		x	x	x	x	x
ASI-23S	ASI-023S-121608A	12/16/2008		x	x	x	x	x
BF-4	BF-004-121908A	12/19/2008						x
BM-3D	BM-03D-121708A	12/17/2008		x	x		x	x
BM-3S	BM-03S-121908A	12/19/2008						x
BR-1	BR-001-121708A	12/17/2008		x	x	x		x
BW-13S	BW-013S-121808A	12/18/2008			x		x	x
MI-01	MI-001-121508A	12/15/2008			x		x	x
MI-02	MI-002-121508A	12/15/2008			x		x	x
MI-08	MI-008-121908A	12/19/2008			x		x	x
OE-2A	OE-02A-121708A	12/17/2008		x	x	x	x	x
OE-2B	OE-02B-121708A	12/17/2008		x	x	x	x	x

Table 2-2
2010 Porewater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Date	Sample Type	Screening VOCs	VOCs
PW-01	PW-1-072210FS	7/22/2010	FS	x	
PW-01	PW-01-072210AX	7/22/2010	N		x
PW-02	PW-2-072210FS	7/22/2010	FS	x	
PW-02	PW-02-072210AX	7/22/2010	N		x
PW-03	PW-3-072210FS	7/22/2010	FS	x	
PW-03	PW-03-072210AX	7/22/2010	N		x
PW-04	PW-4-072210FS	7/22/2010	FS	x	
PW-04	PW-04-072210AX	7/22/2010	N		x
PW-04D	PW-4D-072210FS	7/22/2010	FS	x	
PW-05	PW-5-072210FS	7/22/2010	FS	x	
PW-05	PW-05-072210AX	7/22/2010	N		x
PW-06	PW-6-072210FS	7/22/2010	FS	x	
PW-06	PW-06-072210AX	7/22/2010	N		x
PW-07	PW-7-072210FS	7/22/2010	FS	x	
PW-07	PW-07-072210AX	7/22/2010	N		x
PW-08	PW-8-072210FS	7/22/2010	FS	x	
PW-08	PW-08-072210AX	7/22/2010	N		x
PW-09	PW-9-072210FS	7/22/2010	FS	x	
PW-09	PW-09-072210AX	7/22/2010	N		x
PW-09	PW-09-072210AD	7/22/2010	Duplicate		x
PW-09D	PW-9D-072210FS	7/22/2010	FS	x	
PW-10	PW-10-072210FS	7/22/2010	FS	x	
PW-10	PW-10-072210AX	7/22/2010	N		x
PW-11	PW-11-072210FS	7/22/2010	FS	x	
PW-11	PW-11-072210AX	7/22/2010	N		x
PW-12	PW-12-072210FS	7/22/2010	FS	x	
PW-12	PW-12-072210AX	7/22/2010	N		x
PW-13	PW-13-072210FS	7/22/2010	FS	x	
PW-13	PW-13-072210AX	7/22/2010	N		x
PW-14	PW-14-072210FS	7/22/2010	FS	x	
PW-14	PW-14-072210AX	7/22/2010	N		x
PW-15	PW-15-072210FS	7/22/2010	FS	x	
PW-15	PW-15-072210AX	7/22/2010	N		x
PW-16	PW-16-072210FS	7/22/2010	FS	x	
PW-16	PW-16-072210AX	7/22/2010	N		x
PW-17	PW-17-072210AX	7/22/2010	N		x
PW-17	PW-17-072310FS	7/23/2010	FS	x	
PW-18	PW-18-072210AX	7/22/2010	N		x
PW-18	PW-18-072310FS	7/23/2010	FS	x	
PW-19	PW-19-072210AX	7/22/2010	N		x
PW-19	PW-19-072310FS	7/23/2010	FS	x	
PW-20	PW-20-072210AX	7/22/2010	N		x
PW-20	PW-20-072310FS	7/23/2010	FS	x	

Notes:
FS - Field Screening
N - Normal Analytical

Table 2-3
2010 Vertical Profile Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Sample Type	Metals	Screening VOCs	VOCs
VP-01	VP-01 15	15	8/23/2010	FS		x	
VP-01	VP-01 20	20	8/23/2010	FS		x	
VP-01	VP-01 25	25	8/23/2010	FS		x	
VP-01	VP-01 30	30	8/23/2010	FS		x	
VP-01	VP-01 35	35	8/23/2010	FS		x	
VP-01	VP-01 40	40	8/23/2010	FS		x	
VP-01	VP-01 43	43	8/23/2010	FS		x	
VP-01	VP-0140-082310AX	40	8/23/2010	N			x
VP-02	VP-0215-071310FS	15	7/13/2010	FS		x	
VP-02	VP-0220-071310FS	20	7/13/2010	FS		x	
VP-02	VP-0225-071310FS	25	7/13/2010	FS		x	
VP-02	VP-0230-071310FS	30	7/13/2010	FS		x	
VP-02	VP-0235-071310FS	35	7/13/2010	FS		x	
VP-03	VP-0310-071510FS	10	7/15/2010	FS		x	
VP-03	VP-0315-071510AX	15	7/15/2010	N	x		
VP-03	VP-0315-071510FS	15	7/15/2010	FS		x	
VP-03	VP-0320-071510FS	20	7/15/2010	FS		x	
VP-03	VP-0325-071510AX	25	7/15/2010	N			x
VP-03	VP-0325-071510AX	25	7/15/2010	N	x		
VP-03	VP-0325-071510FS	25	7/15/2010	FS		x	
VP-03	VP-0330-071510FS	30	7/15/2010	FS		x	
VP-03	VP-0335-071510FS	35	7/15/2010	FS		x	
VP-03	VP-0338-071510AX	38	7/15/2010	N	x		
VP-03	VP-0338-071510FS	38	7/15/2010	FS		x	
VP-04	VP-0412-071310FS	12	7/13/2010	FS		x	
VP-04	VP-0415-071310FS	15	7/13/2010	FS		x	
VP-04	VP-0420-071310FS	20	7/13/2010	FS		x	
VP-04	VP-0425-071310FS	25	7/13/2010	FS		x	
VP-04	VP-0430-071310FS	30	7/13/2010	FS		x	
VP-04	VP-0435-071310FS	35	7/13/2010	FS		x	
VP-04	VP-0440-071310AX	40	7/13/2010	N			x
VP-04	VP-0440-071310FS	40	7/13/2010	FS		x	
VP-05	VP-0510-071410FS	10	7/14/2010	FS		x	
VP-05	VP-0515-071410FS	15	7/14/2010	FS		x	
VP-05	VP-0520-071410AX	20	7/14/2010	N			x
VP-05	VP-0520-071410FS	20	7/14/2010	FS		x	
VP-05	VP-0525-071410FS	25	7/14/2010	FS		x	
VP-05	VP-0530-071410FS	30	7/14/2010	FS		x	
VP-05	VP-0535-071410FS	35	7/14/2010	FS		x	
VP-05	VP-0538-071410FS	38	7/14/2010	FS		x	
VP-06	VP-0615-071310FS	15	7/13/2010	FS		x	
VP-06	VP-0620-071310FS	20	7/13/2010	FS		x	
VP-06	VP-0625-071310FS	25	7/13/2010	FS		x	
VP-06	VP-0630-071410FS	30	7/14/2010	FS		x	
VP-06	VP-0635-071410AX	35	7/14/2010	N			x
VP-06	VP-0635-071410FS	35	7/14/2010	FS		x	
VP-06	VP-0640-071410FS	40	7/14/2010	FS		x	
VP-07	VP-0710-071410FS	10	7/14/2010	FS		x	
VP-07	VP-0715-071410FS	15	7/14/2010	FS		x	
VP-07	VP-0720-071410FS	20	7/14/2010	FS		x	
VP-07	VP-0725-071410FS	25	7/14/2010	FS		x	
VP-07	VP-0730-071410AX	30	7/14/2010	N			x
VP-07	VP-0730-071410FS	30	7/14/2010	FS		x	
VP-07	VP-0735-071410FS	35	7/14/2010	FS		x	
VP-07	VP-0740-071410FS	40	7/14/2010	FS		x	

Table 2-3
2010 Vertical Profile Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Sample Type	Metals	Screening VOCs	VOCs
VP-08	VP-0810-071210FS	10	7/12/2010	FS		x	
VP-08	VP-0815-071210AX	15	7/12/2010	N			
VP-08	VP-0815-071210FS	15	7/12/2010	FS		x	
VP-08	VP-0820-071210FS	20	7/12/2010	FS		x	
VP-08	VP-0825-071210AX	25	7/13/2010	N			
VP-08	VP-0825-071210FS	25	7/12/2010	FS		x	
VP-08	VP-0830-071210FS	30	7/12/2010	FS		x	
VP-08	VP-0835-071210AX	35	7/12/2010	N			x
VP-08	VP-0835-071210FS	35	7/12/2010	FS		x	
VP-08	VP-0840-071210AX	40	7/12/2010	N			
VP-08	VP-0840-071210FS	40	7/12/2010	FS		x	
VP-09	VP-0910-071510FS	10	7/15/2010	FS		x	
VP-09	VP-0915-071510FS	15	7/15/2010	FS		x	
VP-09	VP-0920-071510FS	20	7/15/2010	FS		x	
VP-09	VP-0925-071510FS	25	7/15/2010	FS		x	
VP-09	VP-0930-071510FS	30	7/15/2010	FS		x	
VP-09	VP-0935-071510FS	35	7/15/2010	FS		x	
VP-09	VP-0940-071510AD	40	7/15/2010	Duplicate			x
VP-09	VP-0940-071510AX	40	7/15/2010	N			x
VP-09	VP-0940-071510FS	40	7/15/2010	FS		x	
VP-10	VP-1010-071510FS	10	7/15/2010	FS		x	
VP-10	VP-1015-071510AX	15	7/15/2010	N			
VP-10	VP-1015-071510FS	15	7/15/2010	FS		x	
VP-10	VP-1020-071510FS	20	7/15/2010	FS		x	
VP-10	VP-1025-071510AD	25	7/15/2010	Duplicate			
VP-10	VP-1025-071510AX	25	7/15/2010	N			
VP-10	VP-1025-071510FS	25	7/15/2010	FS		x	
VP-10	VP-1030-071510FS	30	7/15/2010	FS		x	
VP-10	VP-1035-071510FS	35	7/15/2010	FS		x	
VP-10	VP-1040-071510AX	40	7/15/2010	N			x
VP-10	VP-1040-071510AX	40	7/15/2010	N	x		
VP-10	VP-1040-071510FS	40	7/15/2010	FS		x	
VP-11	VP-1115-071910FS	15	7/19/2010	FS		x	
VP-11	VP-1120-071910FS	20	7/19/2010	FS		x	
VP-11	VP-1125-071910FS	25	7/19/2010	FS		x	
VP-11	VP-1130-071910FS	30	7/19/2010	FS		x	
VP-11	VP-1135-071910AX	35	7/19/2010	N			x
VP-11	VP-1135-071910FS	35	7/19/2010	FS		x	
VP-11	VP-1140-071910FS	40	7/19/2010	FS		x	
VP-12	VP-1215-072010FS	15	7/20/2010	FS		x	
VP-12	VP-1220-072010FS	20	7/20/2010	FS		x	
VP-12	VP-1225-072010FS	25	7/20/2010	FS		x	
VP-12	VP-1230-072010AX	30	7/20/2010	N			x
VP-12	VP-1230-072010FS	30	7/20/2010	FS		x	
VP-12	VP-1235-072010FS	35	7/20/2010	FS		x	
VP-12	VP-1240-072010FS	40	7/20/2010	FS		x	
VP-13	VP-1310-071610FS	10	7/16/2010	FS		x	
VP-13	VP-1315-071610FS	15	7/16/2010	FS		x	
VP-13	VP-1320-071610FS	20	7/16/2010	FS		x	
VP-13	VP-1325-071610FS	25	7/16/2010	FS		x	
VP-13	VP-1330-071610FS	30	7/16/2010	FS		x	
VP-13	VP-1335-071610FS	35	7/16/2010	FS		x	
VP-13	VP-1340-071610AX	40	7/16/2010	N			x
VP-13	VP-1340-071610FS	40	7/16/2010	FS		x	
VP-14	VP-1415-071910AX	15	7/19/2010	N	x		x

Table 2-3
2010 Vertical Profile Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Sample Type	Metals	Screening VOCs	VOCs
VP-14	VP-1415-071910FS	15	7/19/2010	FS		x	
VP-14	VP-1420-071910FS	20	7/19/2010	FS		x	
VP-14	VP-1425-071910AD	25	7/19/2010	Duplicate			
VP-14	VP-1425-071910AX	25	7/19/2010	N			
VP-14	VP-1425-071910FS	25	7/19/2010	FS		x	
VP-14	VP-1430-072010FS	30	7/20/2010	FS		x	
VP-14	VP-1435-072010FS	35	7/20/2010	FS		x	
VP-14	VP-1440-071910AX	40	7/19/2010	N	x		x
VP-14	VP-1440-072010FS	40	7/20/2010	FS		x	
VP-15	VP-1510-071610FS	10	7/16/2010	FS		x	
VP-15	VP-1515-071610FS	15	7/16/2010	FS		x	
VP-15	VP-1520-071610FS	20	7/16/2010	FS		x	
VP-15	VP-1525-071910FS	25	7/19/2010	FS		x	
VP-15	VP-1530-071910FS	30	7/19/2010	FS		x	
VP-15	VP-1535-071910FS	35	7/19/2010	FS		x	
VP-15	VP-1540-071610AX	40	7/16/2010	N			x
VP-15	VP-1540-071910FS	40	7/19/2010	FS		x	
VP-16	VP-1610-071910FS	10	7/19/2010	FS		x	
VP-16	VP-1615-071910FS	15	7/19/2010	FS		x	
VP-16	VP-1620-071910FS	20	7/19/2010	FS		x	
VP-16	VP-1625-071910FS	25	7/19/2010	FS		x	
VP-16	VP-1630-071910FS	30	7/19/2010	FS		x	
VP-16	VP-1635-071910FS	35	7/19/2010	FS		x	
VP-16	VP-1640-071610AX	40	7/16/2010	N			x
VP-16	VP-1640-071910FS	40	7/19/2010	FS		x	
VP-16A	VP-16A 15	15	8/23/2010	FS		x	
VP-16A	VP-16A 20	20	8/23/2010	FS		x	
VP-16A	VP-16A 25	25	8/23/2010	FS		x	
VP-16A	VP-16A 30	30	8/23/2010	FS		x	
VP-17	VP-1710-071910FS	10	7/19/2010	FS		x	
VP-17	VP-1715-071910FS	15	7/19/2010	FS		x	
VP-17	VP-1720-071910FS	20	7/19/2010	FS		x	
VP-17	VP-1725-071910FS	25	7/19/2010	FS		x	
VP-17	VP-1730-071910FS	30	7/19/2010	FS		x	
VP-17	VP-1735-071910AX	35	7/19/2010	N			x
VP-17	VP-1735-071910FS	35	7/19/2010	FS		x	
VP-17	VP-1740-071910FS	40	7/19/2010	FS		x	
VP-18	VP-18 15	15	8/24/2010	FS		x	
VP-18	VP-18 20	20	8/24/2010	FS		x	
VP-18	VP-18 30	25	8/24/2010	FS		x	
VP-18	VP-18 35	30	8/24/2010	FS		x	
VP-18	VP-18 40	40	8/24/2010	FS		x	
VP-18	VP-1835-082410AD	35	8/24/2010	Duplicate			x
VP-18	VP-1835-082410AX	35	8/24/2010	N			x
VP-19	VP-1915-072010FS	15	7/20/2010	FS		x	
VP-19	VP-1920-072010FS	20	7/20/2010	FS		x	
VP-19	VP-1925-072010FS	25	7/20/2010	FS		x	
VP-19	VP-1930-072010FS	30	7/20/2010	FS		x	
VP-19	VP-1935-072010AX	35	7/20/2010	N			x
VP-19	VP-1935-072010FS	35	7/20/2010	FS		x	
VP-19	VP-1940-072010FS	40	7/20/2010	FS		x	
VP-19	VP-1945-072010FS	45	7/20/2010	FS		x	
VP-20	VP-2015-072010AX	15	7/20/2010	N			
VP-20	VP-2015-072010FS	15	7/20/2010	FS		x	
VP-20	VP-2020-072010FS	20	7/20/2010	FS		x	

Table 2-3
2010 Vertical Profile Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Sample Type	Metals	Screening VOCs	VOCs
VP-20	VP-2025-072010AX	25	7/20/2010	N			
VP-20	VP-2025-072110FS	25	7/21/2010	FS		x	
VP-20	VP-2030-072110FS	30	7/21/2010	FS		x	
VP-20	VP-2035-072010AX	35	7/20/2010	N			x
VP-20	VP-2035-072110FS	35	7/21/2010	FS		x	
VP-20	VP-2038-072010AX	38	7/20/2010	N			
VP-20	VP-2040-072110FS	40	7/21/2010	FS		x	
VP-21	VP-21 15	15	8/25/2010	FS		x	
VP-21	VP-21 20	20	8/25/2010	FS		x	
VP-21	VP-21 25	25	8/25/2010	FS		x	
VP-21	VP-21 30	30	8/25/2010	FS		x	
VP-21	VP-21 35	35	8/25/2010	FS		x	
VP-21	VP-21 40	40	8/25/2010	FS		x	
VP-21	VP-2115-082510AX	15	8/25/2010	N			x
VP-22	VP-2215-072110AX	15	7/21/2010	N			
VP-22	VP-2215-072110FS	15	7/21/2010	FS		x	
VP-22	VP-2220-072110FS	20	7/21/2010	FS		x	
VP-22	VP-2225-072110AX	25	7/21/2010	N			
VP-22	VP-2225-072110FS	25	7/21/2010	FS		x	
VP-22	VP-2230-072110FS	30	7/21/2010	FS		x	
VP-22	VP-2235-072110AX	35	7/21/2010	N			x
VP-22	VP-2235-072110FS	35	7/21/2010	FS		x	
VP-22	VP-2240-072110FS	40	7/21/2010	FS		x	
VP-23	VP-2315-072110FS	15	7/21/2010	FS		x	
VP-23	VP-2320-072110FS	20	7/21/2010	FS		x	
VP-23	VP-2325-072110FS	25	7/21/2010	FS		x	
VP-23	VP-2330-072110AX	30	7/21/2010	N			x
VP-23	VP-2330-072210FS	30	7/22/2010	FS		x	
VP-23	VP-2335-072110AX	35	7/21/2010	N			
VP-23	VP-2335-072210FS	35	7/22/2010	FS		x	
VP-23	VP-2338-072210FS	38	7/22/2010	FS		x	
VP-23	VP-2341-072210FS	41	7/22/2010	FS		x	
VP-24	VP-24 15	15	8/24/2010	FS		x	
VP-24	VP-24 20	20	8/24/2010	FS		x	
VP-24	VP-24 25	25	8/24/2010	FS		x	
VP-24	VP-24 30	30	8/24/2010	FS		x	
VP-24	VP-24 35	35	8/24/2010	FS		x	
VP-24	VP-24 40	40	8/24/2010	FS		x	
VP-24	VP-2415-082410AX	15	8/24/2010	N			x
VP-25	VP-2515-072310AX	15	7/23/2010	N	x		x
VP-25	VP-2520-072310AX	20	7/23/2010	N			x
VP-25	VP-2525-072310AD	25	7/23/2010	Duplicate	x		
VP-25	VP-2525-072310AX	25	7/23/2010	N			x
VP-25	VP-2530-072310AX	30	7/23/2010	N			x
VP-25	VP-2535-072310AX	35	7/23/2010	N			x
VP-25	VP-2540-072310AX	40	7/23/2010	N	x		x
VP-25	VP-2545-072310AX	45	7/23/2010	N			x
VP-26	VP-2615-072310AX	15	7/23/2010	N			x
VP-26	VP-2620-072310AX	20	7/23/2010	N			x
VP-26	VP-2625-072310AX	25	7/23/2010	N			x
VP-26	VP-2630-072310AX	30	7/23/2010	N			x
VP-26	VP-2635-072310AX	35	7/23/2010	N			x
VP-26	VP-2640-072310AX	40	7/23/2010	N			x
VP-26	VP-2645-072310AX	45	7/23/2010	N			x
VP-27	VP-2715-072410AX	15	7/24/2010	N	x		x

Table 2-3
2010 Vertical Profile Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Sample Type	Metals	Screening VOCs	VOCs
VP-27	VP-2720-072410AX	20	7/24/2010	N			x
VP-27	VP-2725-072410AX	25	7/24/2010	N	x		x
VP-27	VP-2730-072410AX	30	7/24/2010	N			x
VP-27	VP-2735-072410AX	35	7/24/2010	N			x
VP-27	VP-2740-072410AX	40	7/24/2010	N	x		x
VP-27	VP-2745-072410AX	50	7/24/2010	N			x
VP-28	VP-2815-072410AX	15	7/24/2010	N			x
VP-28	VP-2820-072410AX	20	7/24/2010	N			x
VP-28	VP-2825-072410AX	25	7/24/2010	N			x
VP-28	VP-2830-072410AX	30	7/24/2010	N			x
VP-28	VP-2835-072410AX	35	7/24/2010	N			x
VP-28	VP-2840-072410AX	40	7/24/2010	N			x
VP-29	VP-2915-072210FS	15	7/22/2010	FS		x	
VP-29	VP-2920-072210FS	20	7/22/2010	FS		x	
VP-29	VP-2925-072210FS	25	7/22/2010	FS		x	
VP-29	VP-2930-072210AX	30	7/22/2010	N			x
VP-29	VP-2930-072210FS	30	7/22/2010	FS		x	
VP-29	VP-2935-072210FS	35	7/22/2010	FS		x	
VP-29	VP-2940-072210FS	40	7/22/2010	FS		x	
VP-30	VP-3015-072210FS	15	7/22/2010	FS		x	
VP-30	VP-3020-072210AX	20	7/22/2010	N			x
VP-30	VP-3020-072210FS	20	7/22/2010	FS		x	
VP-30	VP-3025-072210FS	25	7/22/2010	FS		x	
VP-30	VP-3030-072210FS	30	7/22/2010	FS		x	
VP-30	VP-3035-072210FS	35	7/22/2010	FS		x	
VP-30	VP-3040-072210FS	40	7/22/2010	FS		x	
VP-31	VP-3115-072310FS	15	7/23/2010	FS		x	
VP-31	VP-3120-072310FS	20	7/23/2010	FS		x	
VP-31	VP-3125-072310FS	25	7/23/2010	FS		x	
VP-31	VP-3130-072310FS	30	7/23/2010	FS		x	
VP-31	VP-3135-072310FS	35	7/23/2010	FS		x	
VP-31	VP-3140-072310AD	40	7/23/2010	Duplicate			x
VP-31	VP-3140-072310AX	40	7/23/2010	N			x
VP-31	VP-3140-072310FS	40	7/23/2010	FS		x	

Notes:
FS - Field Screening
N - Normal Analytical

Table 2-4
August 2010 Soil Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Screening VOCs
SB-01	SB1 0-1	0 - 1	8/25/2010	x
SB-01	SB1 3-3.5	3 - 3.5	8/25/2010	x
SB-01	SB1 8-8.5	8 - 8.5	8/25/2010	x
SB-01	SB1 12-12.5	12 - 12.5	8/25/2010	x
SB-01	SB1 17-17.5	17 - 17.5	8/25/2010	x
SB-01	SB1 22-22.5	22 - 22.5	8/25/2010	x
SB-01	SB1 44.5-45	44.5 - 45	8/25/2010	x
SB-02	SB02 0-1	0 - 1	8/25/2010	x
SB-02	SB02 2-2.5	2 - 2.5	8/25/2010	x
SB-02	SB02 7-7.5	7 - 7.5	8/25/2010	x
SB-02	SB02 12.5-13	12.5 - 13	8/25/2010	x
SB-02	SB02 '17-17.5	17 - 17.5	8/25/2010	x
SB-02	SB02 22.5-23	22.5 - 23	8/25/2010	x
SB-02	SB02 29.5-30	29.5 - 30	8/25/2010	x
SB-02	SB02 30-30.5	30 - 30.5	8/25/2010	x
SB-02	SB02 37.5-38	37.5 - 38	8/25/2010	x
SB-03	SB03 0-1	0 - 1	8/26/2010	x
SB-03	SB03 '3-3.5	3 - 3.5	8/26/2010	x
SB-03	SB03 7-7.5	7 - 7.5	8/26/2010	x
SB-03	SB03 12-12.5	12 - 12.5	8/26/2010	x
SB-03	SB03 17-17.5	17 - 17.5	8/26/2010	x
SB-03	SB03 22-22.5	22 - 22.5	8/26/2010	x
SB-03	SB03 25-25.5	25 - 25.5	8/26/2010	x
SB-03	SB03 34.5-35	34.5 - 35	8/26/2010	x
SB-03	SB03 36.5-37	36.5 - 37	8/26/2010	x
SB-04	SB04 0-1	0 - 1	8/26/2010	x
SB-04	SB04 3.5-4	3.5 - 4	8/26/2010	x
SB-04	SB04 7-7.5	7 - 7.5	8/26/2010	x
SB-04	SB04 12-12.5	12 - 12.5	8/26/2010	x
SB-04	SB04 '17-17.5	17 - 17.5	8/26/2010	x
SB-04	SB04 24.5-25	24.5 - 25	8/26/2010	x
SB-04	SB04 40.5-41	40.5 - 41	8/26/2010	x
SB-05	SB05 0-1	0 - 1	8/26/2010	x
SB-05	SB05 3-3.5	3 - 3.5	8/26/2010	x
SB-05	SB05 7-7.5	7 - 7.5	8/26/2010	x
SB-05	SB05 13-13.5	13 - 13.5	8/26/2010	x
SB-05	SB05 '17-17.5	17 - 17.5	8/26/2010	x
SB-05	SB05 25-35	25 - 35	8/26/2010	x
SB-06	SB06 1-2	1 - 2	8/26/2010	x
SB-06	SB06 3-3.5	3 - 3.5	8/26/2010	x
SB-06	SB06 7-7.5	7 - 7.5	8/26/2010	x
SB-06	SB06 13-13.5	13 - 13.5	8/26/2010	x
SB-06	SB06 18-18.5	18 - 18.5	8/26/2010	x
SB-06	SB06 23-23.5	23 - 23.5	8/26/2010	x
SB-06	SB06 27.5-28	27.5 - 28	8/26/2010	x
SB-06	SB06 32.5-33	32.5 - 33	8/26/2010	x
SB-06	SB06 37.5-38	37.5 - 38	8/26/2010	x
SB-06	SB06 42.5-43	42.5 - 43	8/26/2010	x

Table 2-5
May 2010 Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Date	Sample Type	TAL Metals Total/Dissolved	SVOCs	VOCs
AIP-01	AIP-001-0519108A	5/19/2010	N	x	x	x
AL-12	AL-012-052010A	5/20/2010	N	x	x	x
AL-14	AL-014-051810A	5/18/2010	N	x	x	x
AL-15	AL-015-051910A	5/19/2010	N	x	x	x
AL-2	AL-002-051910A	5/19/2010	N	x	x	x
ARC-3	ARC-003-051910A	5/19/2010	N	x	x	x
ASI-02D2	ASI-002D2-051810A	5/18/2010	N	x	x	x
ASI-02D2	ASI-002D2-051810D	5/18/2010	Duplicate	x	x	x
ASI-03D2	ASI-003D2-051810A	5/18/2010	N	x	x	x
ASI-04D2	ASI-004D2-051710A	5/17/2010	N	x	x	x
ASI-05D2	ASI-005D2-052010A	5/20/2010	N	x	x	x
ASI-05D2	ASI-005D2-052010D	5/20/2010	Duplicate	x	x	x
ASI-11D2	ASI-011D2-051710A	5/17/2010	N	x	x	x
ASI-14D2	ASI-014D2-051810A	5/18/2010	N	x	x	x
ASI-14S	ASI-014S-051810A	5/18/2010	N	x	x	x
ASI-15D2	ASI-015D2-052010A	5/20/2010	N	x	x	x
ASI-16D2	ASI-016D2-051910A	5/19/2010	N	x	x	x
ASI-23D2	ASI-023D2-051810A	5/18/2010	N	x	x	x
ASI-23S	ASI-023S-051810A	5/18/2010	N	x	x	x
BF-4	BF-004-052010A	5/20/2010	N	x	x	x
BM-3D	BM-003D-051910A	5/19/2010	N	x	x	x
BM-3S	BM-003S-051910A	5/19/2010	N	x	x	x
BR-1	BR-001-052110A	5/21/2010	N	x	x	x
BW-13S	BW-013S-052010A	5/20/2010	N	x	x	x
MI-01	MI-001-051910A	5/19/2010	N	x	x	x
MI-02	MI-002-051810A	5/18/2010	N	x	x	x
MI-08	MI-008-052010A	5/20/2010	N	x	x	x
OE-2A	OE-02A-052010A	5/20/2010	N	x	x	x
OE-2B	OE-02B-052010A	5/20/2010	N	x	x	x

Notes:
N - Normal Analytical

Table 2-6
November 2010 Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Date	Sample Type	1,4-Dioxane	TAL Metals Total/Dissolved	SVOCs	VOCs
AIP-01	AIP-001-1110A	12/2/2010	N	x	x	x	x
AL-12	AL-012-1110A	12/1/2010	N	x	x	x	x
AL-14	AL-014-1110A	11/30/2010	N	x	x	x	x
AL-15	AL-015-1110A	12/1/2010	N	x	x	x	x
AL-2	AL-002-1110A	12/1/2010	N	x	x	x	x
ARC-3	ARC-003-1110A	12/1/2010	N	x	x	x	x
ASI-02D2	ASI-002D2-1110A	11/29/2010	N	x	x	x	x
ASI-02D2	DUP-1110B	11/29/2010	Duplicate	x	x	x	x
ASI-03D2	ASI-003D2-1110A	11/29/2010	N	x	x	x	x
ASI-04D2	ASI-004D2-1110A	11/30/2010	N	x	x	x	x
ASI-05D2	ASI-005D2-1110A	12/2/2010	N	x	x	x	x
ASI-11D2	ASI-011D2-1110A	11/30/2010	N	x	x	x	x
ASI-14D2	ASI-014D2-1110A	11/30/2010	N	x	x	x	x
ASI-14S	ASI-014S-1110A	11/30/2010	N	x	x	x	x
ASI-15D2	ASI-015D2-1110A	12/1/2010	N	x	x	x	x
ASI-16D2	ASI-016D2-1110A	12/1/2010	N	x	x	x	x
ASI-23D2	ASI-023D2-1110A	12/1/2010	N	x	x	x	x
ASI-23S	ASI-023S-1110A	12/1/2010	N	x	x	x	x
BF-4	BF-004-1110A	12/1/2010	N	x	x	x	x
BM-3D	BM-003D-1110A	11/29/2010	N	x	x	x	x
BM-3S	BM-003S-1110A	11/29/2010	N	x	x	x	x
BR-1	BR-001-1110A	12/2/2010	N	x	x	x	x
BW-13S	BW-013S-1110A	12/2/2010	N	x	x	x	x
MI-01	MI-001-1110A	11/29/2010	N	x	x	x	x
MI-02	MI-002-1110A	11/29/2010	N	x	x	x	x
MI-08	MI-008-1110A	12/2/2010	N	x	x	x	x
MW-01D	MW-001D-1110A	12/1/2010	N	x	x	x	x
MW-02M	MW-002M-1110A	11/29/2010	N	x	x	x	x
MW-03D	MW-003D-1110A	11/29/2010	N	x	x	x	x
MW-04D	MW-004D-1110A	12/2/2010	N	x	x	x	x
MW-04D	DUP-1110C	12/2/2010	Duplicate	x	x	x	x
MW-05D	MW-005D-1110A	11/30/2010	N	x	x	x	x
MW-05D2	MW-005D2-1110A	11/30/2010	N	x	x	x	x
MW-06D	MW-006D-1110A	11/30/2010	N		x	x	x
MW-06M	MW-006M-1110A	11/30/2010	N		x	x	x
MW-07M	MW-007M-1110A	12/2/2010	N	x	x	x	x
MW-08M	MW-008M-1110A	11/30/2010	N	x	x	x	x
MW-08S	MW-008S-1110A	11/30/2010	N	x	x	x	x
MW-09D	MW-009D-1110A	12/2/2010	N	x	x	x	x
MW-09M	MW-009M-1110A	12/1/2010	N	x	x	x	x
MW-10D	MW-010D-1110A	12/2/2010	N	x	x	x	x
MW-11S	MW-011S-1110A	12/1/2010	N	x	x	x	x
OE-2A	OE-002A-1110A	11/30/2010	N	x	x	x	x
OE-2B	OE-002B-1110A	11/30/2010	N	x	x	x	x
OE-2B	DUP-1110A	11/30/2010	Duplicate	x	x	x	x

Notes:
N - Normal Analytical

Table 2-7
2011 Vertical Profile Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Date	Sample Type	1,4-dioxane	TAL Metals Total	Screening VOCs	VOCs
VP-32	VP-32 15	8/19/2011	FS			x	
VP-32	VP-32 20	8/19/2011	FS			x	
VP-32	VP-32 25	8/19/2011	FS			x	
VP-32	VP-32 30	8/19/2011	FS			x	
VP-32	VP-32 35	8/19/2011	FS			x	
VP-32	VP-32 40	8/19/2011	FS			x	
VP-33	VP-33 15	8/18/2011	FS			x	
VP-33	VP-33 20	8/18/2011	FS			x	
VP-33	VP-33 25	8/18/2011	FS			x	
VP-33	VP-33 30	8/18/2011	FS			x	
VP-33	VP-33 35	8/18/2011	FS			x	
VP-33	VP-33 40	8/18/2011	FS			x	
VP-33	VP-33 45	8/18/2011	FS			x	
VP-33	VP-33 50	8/18/2011	FS			x	
VP-33	VP-3315A	8/18/2011	N				x
VP-33	VP-3320A	8/18/2011	N	x	x	x	
VP-34	VP-3415A	8/25/2011	N			x	x
VP-34	VP-3420A	8/25/2011	FS			x	
VP-34	VP-3430A	8/25/2011	FS			x	
VP-34	VP-3435A	8/25/2011	FS			x	
VP-34	VP-3440A	8/25/2011	FS			x	
VP-34	VP-3425A	8/25/2011	N	x	x	x	
VP-35	VP-3520A	8/25/2011	N				x
VP-35	DUP05-0825A	8/25/2011	Duplicate			x	
VP-35	VP-3515A	8/25/2011	FS			x	
VP-35	VP-3530A	8/25/2011	FS			x	
VP-35	VP-3535A	8/25/2011	FS			x	
VP-35	VP-3525A	8/25/2011	N	x	x	x	
VP-36	VP-3615A	8/22/2011	N				x
VP-36	VP-3620A	8/22/2011	N				x
VP-36	VP-3625A	8/22/2011	N	x	x		x
VP-36	VP-3630A	8/22/2011	N				x
VP-36	VP-3635A	8/22/2011	N				x
VP-36	VP-3638A	8/22/2011	N				x
VP-37	VP-3715A	8/23/2011	FS			x	
VP-37	VP-3720A	8/23/2011	N			x	x
VP-37	VP-3725A	8/23/2011	N	x	x	x	
VP-37	VP-3730A	8/23/2011	FS			x	
VP-37	VP-3735A	8/23/2011	FS			x	
VP-38	VP-3815A	8/23/2011	FS			x	
VP-38	VP-3820A	8/23/2011	N			x	x
VP-38	VP-3825A	8/23/2011	FS			x	
VP-38	VP-3830A	8/23/2011	N	x	x	x	
VP-38	DUP04-0823A	8/23/2011	Duplicate	x	x	x	
VP-38	VP-3835A	8/23/2011	FS			x	
VP-39	VP-3930A	8/19/2011	N	x	x		x
VP-39	VP-39 15	8/19/2011	FS			x	
VP-39	VP-39 20	8/19/2011	FS			x	
VP-39	VP-39 25	8/19/2011	FS			x	
VP-39	VP-39 30	8/19/2011	FS			x	
VP-39	VP-39 35	8/19/2011	FS			x	
VP-39	VP-39 35DUP	8/19/2011	Duplicate			x	
VP-39	VP-39 38	8/19/2011	FS			x	
VP-40	VP-4015A	8/24/2011	N	x		x	
VP-40	VP-4020A	8/24/2011	N	x		x	

Table 2-7
2011 Vertical Profile Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Date	Sample Type	1,4-dioxane	TAL Metals Total	Screening VOCs	VOCs
VP-40	VP-4025A	8/24/2011	N	x	x	x	x
VP-40	VP-4030A	8/24/2011	FS			x	
VP-41	VP-41 15	8/15/2011	FS			x	
VP-41	VP-41 20	8/15/2011	FS			x	
VP-41	VP-41 25	8/15/2011	FS			x	
VP-41	VP-41 30	8/15/2011	FS			x	
VP-41	VP-41 35	8/15/2011	FS			x	
VP-41	VP-41 35DUP	8/15/2011	Duplicate			x	
VP-41	VP-41 40	8/15/2011	FS			x	
VP-42	VP-42 15	8/16/2011	FS			x	
VP-42	VP-42 20	8/16/2011	FS			x	
VP-42	VP-42 25	8/16/2011	FS			x	
VP-42	VP-42 30	8/16/2011	FS			x	
VP-42	VP-42 35	8/16/2011	FS			x	
VP-42	VP-42 40	8/16/2011	FS			x	
VP-42	VP-42 45	8/16/2011	FS			x	
VP-42	VP-4235A	8/16/2011	N	x	x		x
VP-43	VP-43 15	8/16/2011	FS			x	
VP-43	VP-43 20	8/16/2011	FS			x	
VP-43	VP-43 25	8/16/2011	FS			x	
VP-43	VP-43 30	8/16/2011	FS			x	
VP-43	VP-43 35	8/16/2011	FS			x	
VP-43	VP-43 40	8/16/2011	FS			x	
VP-43	VP-43 45	8/16/2011	FS			x	
VP-43	VP-43 50	8/16/2011	FS			x	
VP-43	VP-4330A	8/16/2011	N	x	x		x
VP-44	VP-4415A	8/26/2011	FS			x	
VP-44	VP-4420A	8/26/2011	FS			x	
VP-44	VP-4425A	8/26/2011	FS			x	
VP-44	VP-4430A	8/26/2011	N			x	x
VP-44	VP-4435A	8/26/2011	FS			x	
VP-45	VP-45 10	8/17/2011	FS			x	
VP-45	VP-45 15	8/17/2011	FS			x	
VP-45	VP-45 20	8/17/2011	FS			x	
VP-45	VP-45 25	8/17/2011	FS			x	
VP-45	VP-45 30	8/17/2011	FS			x	
VP-45	VP-45 5	8/17/2011	FS			x	
VP-45	VP-4515A	8/17/2011	N				x
VP-45	DUP01-0811A	8/17/2011	Duplicate				x
VP-45	VP-4530A	8/17/2011	N	x	x		x
VP-45	VP-4505A	8/17/2011	N		x	x	
VP-47	VP-47 15	8/17/2011	FS			x	
VP-47	VP-47 20	8/17/2011	FS			x	
VP-47	VP-47 25	8/17/2011	FS			x	
VP-47	VP-47 30	8/17/2011	FS			x	
VP-47	VP-47 35	8/17/2011	FS			x	
VP-47	VP-47 40	8/17/2011	FS			x	
VP-47	VP-47 45	8/17/2011	FS			x	
VP-47	VP-4740A	8/17/2011	N	x			x
VP-48	VP48-015.00	8/30/2011	FS			x	
VP-48	VP48-020.00	8/30/2011	FS			x	
VP-48	VP48-025.00	8/30/2011	FS			x	
VP-48	VP-4830A	8/30/2011	N				x
VP-48	VP48-030.00	8/30/2011	FS			x	
VP-48	VP48-035.00	8/30/2011	FS			x	

Table 2-7
2011 Vertical Profile Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Date	Sample Type	1,4-dioxane	TAL Metals Total	Screening VOCs	VOCs
VP-48	VP48-040.00	8/30/2011	FS			x	
VP-48	VP48-045.00	8/30/2011	FS			x	
VP-49	VP49-015.00	8/29/2011	FS			x	
VP-49	VP49-020.00	8/29/2011	FS			x	
VP-49	VP-4925A	8/29/2011	N	x	x		x
VP-49	VP49-025.00	8/29/2011	FS			x	
VP-49	VP49-030.00	8/29/2011	FS			x	
VP-49	VP49-035.00	8/29/2011	FS			x	
VP-49	VP49-037.50	8/29/2011	FS			x	
VP-49	VP49-010.00	8/29/2011	FS			x	
VP-50	VP-5015A	8/26/2011	FS			x	
VP-50	VP-5020A	8/26/2011	FS			x	
VP-50	VP-5025A	8/26/2011	N			x	x
VP-50	VP-5030A	8/26/2011	FS			x	
VP-50	VP-5035A	8/26/2011	FS			x	
VP-50	VP-5040A	8/26/2011	FS			x	
VP-51	VP51-010.00	9/2/2011	FS			x	
VP-51	VP51-015.00	9/2/2011	FS			x	
VP-51	VP51-020.00	9/2/2011	FS			x	
VP-51	VP51-025.00	9/2/2011	FS			x	
VP-51	VP51-030.00	9/2/2011	FS			x	
VP-51	VP51-035.00	9/2/2011	FS			x	
VP-51	VP51-040.00	9/2/2011	FS			x	
VP-51	VP51-040.00-FD	9/2/2011	Duplicate			x	
VP-52	VP52-015.00	8/30/2011	FS			x	
VP-52	VP52-020.00	8/30/2011	FS			x	
VP-52	VP-5225A	8/30/2011	N				x
VP-52	VP52-025.00	8/30/2011	FS			x	
VP-52	VP52-030.00	8/30/2011	FS			x	
VP-52	VP52-035.00	8/30/2011	FS			x	
VP-52	VP52-040.00	8/30/2011	FS			x	
VP-52	VP52-045.00	8/30/2011	FS			x	
VP-53	VP-5315A	8/24/2011	FS			x	
VP-53	VP-5320A	8/24/2011	FS			x	
VP-53	VP-5325A	8/24/2011	N	x	x	x	
VP-53	VP-5330A	8/24/2011	FS			x	
VP-53	VP-5335A	8/24/2011	FS			x	
VP-53	VP-5340A	8/24/2011	N			x	x
VP-53	VP-5342A	8/24/2011	FS			x	
VP-54	VP-5415A	8/22/2011	N				x
VP-54	VP-5420A	8/22/2011	N				x
VP-54	VP-5425A	8/22/2011	N				x
VP-54	VP-5430A	8/22/2011	N	x	x		x
VP-54	DUP03-0822A	8/22/2011	Duplicate				x
VP-54	VP-5435A	8/22/2011	N				x
VP-54	VP-5440A	8/22/2011	N				x
VP-55	VP-5515A	10/4/2011	FS			x	
VP-55	VP-5520A	10/4/2011	FS			x	
VP-55	VP-5525A	10/4/2011	FS			x	
VP-55	VP-5530A	10/4/2011	FS			x	
VP-56	VP-5610A	10/4/2011	FS			x	
VP-56	VP-5615A	10/4/2011	FS			x	
VP-56	VP-5620A	10/4/2011	FS			x	
VP-56	VP-5625A	10/4/2011	FS			x	
VP-56	VP-5630A	10/4/2011	N			x	x

Table 2-7
2011 Vertical Profile Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Date	Sample Type	1,4-dioxane	TAL Metals Total	Screening VOCs	VOCs
VP-56	DUP06-1004A	10/4/2011	Duplicate			x	
VP-56	VP-5635A	10/4/2011	N			x	x
VP-57	VP-5710A	10/5/2011	FS			x	
VP-57	VP-5715A	10/5/2011	FS			x	
VP-57	VP-5720A	10/5/2011	FS			x	
VP-57	DUP07-1005A	10/5/2011	Duplicate			x	
VP-57	VP-5725A	10/5/2011	N			x	x
VP-57	VP-5730A	10/5/2011	N			x	x
VP-57	VP-5735A	10/5/2011	FS			x	
VP-57	VP-5740A	10/5/2011	FS			x	
VP-58	VP-5810A	10/5/2011	FS			x	
VP-58	VP-5815A	10/5/2011	FS			x	
VP-58	VP-5820A	10/5/2011	FS			x	
VP-58	VP-5825A	10/5/2011	FS			x	
VP-58	VP-5830A	10/5/2011	FS			x	
VP-58	VP-5833A	10/5/2011	FS			x	

Notes:
FS - Field Screening
N - Normal Analytical

Table 2-8
2011 Waterloo Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Date	Sample Type	Screening VOCs	VOCs
WP-01	WP-01-010.00	8/31/2011	FS	x	
WP-01	WP-01-015.00	8/31/2011	FS	x	
WP-01	WP-01-020.00	8/31/2011	FS	x	
WP-01	WP-01-025.00	8/31/2011	FS	x	
WP-01	WP-01-030.00	8/31/2011	FS	x	
WP-01	WP-01-035.00	8/31/2011	FS	x	
WP-01	WP-01-039.70	8/31/2011	FS	x	
WP-02	WP-02-010.05	8/31/2011	FS	x	
WP-02	WP-02-014.81	8/31/2011	FS	x	
WP-02	WP-02-019.74	8/31/2011	FS	x	
WP-02	WP-02-024.80	8/31/2011	FS	x	
WP-02	WP-02-029.72	8/31/2011	FS	x	
WP-02	WP-02-034.80	8/31/2011	FS	x	
WP-03	WP-03-010.00	8/31/2011	FS	x	
WP-03	WP-03-015.00	8/31/2011	FS	x	
WP-03	WP-03-020.00	8/31/2011	FS	x	
WP-03	WP-03-025.00	8/31/2011	FS	x	
WP-03	WP-03-041.20	8/31/2011	FS	x	
WP-04	WP-04-009.93	8/31/2011	FS	x	
WP-04	WP-04-014.90	8/31/2011	FS	x	
WP-04	WP-04-019.95	8/31/2011	FS	x	
WP-04	WP-04-025.20	8/31/2011	FS	x	
WP-04	WP-04-030.30	8/31/2011	FS	x	
WP-05	WP-05-005.15	9/1/2011	FS	x	
WP-05	WP-05-010.00	9/1/2011	FS	x	
WP-05	WP-05-015.00	9/1/2011	FS	x	
WP-05	WP-0515A	9/1/2011	N		x
WP-05	WP-05-020.00	9/1/2011	FS	x	
WP-05	WP-05-025.00	9/1/2011	FS	x	
WP-05	WP-05-030.00	9/1/2011	FS	x	
WP-06	WP-06-005.22	9/1/2011	FS	x	
WP-06	WP-06-010.25	9/1/2011	FS	x	
WP-06	WP-0615A	9/1/2011	N		x
WP-06	WP-06-015.15	9/1/2011	FS	x	
WP-06	WP-06-015.15-FD	9/1/2011	Duplicate	x	
WP-06	WP-06-020.08	9/1/2011	FS	x	
WP-06	WP-06-024.85	9/1/2011	FS	x	
WP-06	WP-06-030.20	9/1/2011	FS	x	
WP-06	WP-06-035.11	9/1/2011	FS	x	
WP-07	WP-07-005.20	9/1/2011	FS	x	
WP-07	WP-07-010.20	9/1/2011	FS	x	
WP-07	WP-07-015.00-FD	9/1/2011	Duplicate	x	
WP-07	WP-07-015.00	9/1/2011	FS	x	
WP-07	WP-07-019.90	9/1/2011	FS	x	
WP-07	WP-07-025.00	9/1/2011	FS	x	
WP-07	WP-07-029.10	9/1/2011	FS	x	
WP-08	WP-08-005.20	9/1/2011	FS	x	
WP-08	WP-08-010.10	9/1/2011	FS	x	
WP-08	WP-08-014.94	9/1/2011	FS	x	
WP-08	WP-0820A	9/1/2011	N		x
WP-08	WP-08-020.20	9/1/2011	FS	x	
WP-08	WP-08-025.17	9/1/2011	FS	x	
WP-08	WP-08-030.10	9/1/2011	FS	x	
WP-08	WP-08-030.10-FD	9/1/2011	Duplicate	x	

Notes: FS - Field Screening N - Normal Analytical

Table 2-9
2012 Groundwater Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Date	Sample Type	TAL Metals Total	VOCs	Carbon Dioxide	Alkalinity	Anions	Volatile Fatty Acids	Ethane/ Ethene/ Methane	Sulfide	TOC
ASI-04D2	ASI-04D2-0612A	6/7/2012	N	x	x							
ASI-05D2	ASI-05D2-0612A	6/6/2012	N	x	x	x	x	x	x	x	x	x
BR-1	BR-01-0612A	6/6/2012	N	x	x							
MW-01D	MW-01D-0612A	6/7/2012	N	x	x							
MW-03D	MW-03D-0612A	6/7/2012	N	x	x							
MW-04D	MW-04D-0612B	6/6/2012	N			x	x	x	x	x	x	x
MW-04D	MW-04D-0612A	6/6/2012	N	x	x							
MW-05D	MW-05D-0612A	6/6/2012	N	x	x							
MW-05D2	MW-05D2-0612A	6/5/2012	N	x	x							
MW-06D	MW-06D-0612A	6/6/2012	N	x	x	x	x	x	x	x	x	x
MW-06M	MW-06M-0612A	6/6/2012	N	x	x	x	x	x	x	x	x	x
MW-07M	MW-07M-0612A	6/5/2012	N	x	x							
MW-08M	MW-08M-0612B	6/6/2012	N			x	x	x	x	x	x	x
MW-08M	MW-08M-0612A	6/6/2012	N	x	x							
MW-08M	MW-DUP02-0612B	6/6/2012	Duplicate			x	x	x	x	x	x	x
MW-08S	MW-08S-0612A	6/7/2012	N	x	x							
MW-09D	MW-09D-0612A	6/5/2012	N	x	x							
MW-09M	MW-09M-0612A	6/5/2012	N	x	x							
MW-10D	MW-10D-0612A	6/5/2012	N	x	x							
MW-10D	MW-DUP01-0612A	6/5/2012	Duplicate	x	x							
MW-11S	MW-11S-0612A	6/6/2012	N	x	x	x	x	x	x	x	x	x

Notes:
N - Normal Analytical

Table 2-10
August 2012 Soil Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Sample ID	Sample Depth (ft bgs)	Sample Date	Sample Type	TAL Metals Total	SVOCs	VOCs
SB-12-1	SB-12-1-5FT-0812	3-5	8/6/2012	N	x	x	x
SB-12-1	SB-12-1-10FT-0813	5-10	8/6/2012	N	x	x	x
SB-12-1	SB-12-1-15FT-0814	10-15	8/6/2012	N	x	x	x
SB-12-1	SB-12-1-20FT-0815	15-20	8/6/2012	N	x	x	x
SB-12-1	SB-12-1-25FT-0816	20-25	8/6/2012	N	x	x	x
SB-12-1	SB-12-1-30FT-0817	25-30	8/6/2012	N	x	x	x
SB-12-1	SB-12-1-35FT-0818	30-35	8/6/2012	N	x	x	x
SB-12-1	SB-12-1-48FT-0819	35-48	8/6/2012	N	x	x	x
SB-12-2	SB-12-2-5FT-0812	3-5	8/7/2012	N	x	x	x
SB-12-2	SB-12-2-10FT-0813	5-10	8/7/2012	N	x	x	x
SB-12-2	SB-12-2-15FT-0814	10-15	8/7/2012	N	x	x	x
SB-12-2	SB-12-2-20FT-0815	15-20	8/7/2012	N	x	x	x
SB-12-2	SB-DUP-01	20-25	8/7/2012	N	x	x	x
SB-12-2	SB-12-2-25FT-0816	20-25	8/7/2012	N	x	x	x
SB-12-2	SB-12-2-30FT-0817	25-30	8/7/2012	N	x	x	x
SB-12-2	SB-12-2-35FT-0818	30-35	8/7/2012	N	x	x	x
SB-12-2	SB-12-2-40FT-0819	35-40	8/7/2012	N	x	x	x
SB-12-3	SB-12-3-5FT-0812	3-5	8/7/2012	N	x	x	x
SB-12-3	SB-12-3-10FT-0813	5-10	8/7/2012	N	x	x	x
SB-12-3	SB-12-3-15FT-0814	10-15	8/7/2012	N	x	x	x
SB-12-3	SB-12-3-20FT-0815	15-20	8/7/2012	N	x	x	x
SB-12-3	SB-12-3-25FT-0816	20-25	8/7/2012	N	x	x	x
SB-12-3	SB-12-3-30FT-0817	25-30	8/7/2012	N	x	x	x
SB-12-3	SB-12-3-35FT-0818	30-35	8/7/2012	N	x	x	x
SB-12-3	SB-12-3-40FT-0819	35-40	8/7/2012	N	x	x	x
SB-12-3	SB-12-3-45FT-0819	40-45	8/7/2012	N	x	x	x
SB-12-4	SB-12-4-5FT-0812	0-5	8/7/2012	N	x	x	x
SB-12-4	SB-12-4-10FT-0813	5-10	8/7/2012	N	x	x	x
SB-12-4	SB-12-4-15FT-0814	10-15	8/7/2012	N	x	x	x
SB-12-4	SB-12-4-20FT-0815	15-20	8/7/2012	N	x	x	x
SB-12-4	SB-12-4-25FT-0816	20-25	8/7/2012	N	x	x	x
SB-12-4	SB-12-4-30FT-0817	25-30	8/7/2012	N	x	x	x
SB-12-4	SB-12-4-35FT-0818	30-35	8/7/2012	N	x	x	x
SB-12-4	SB-12-4-40FT-0819	35-40	8/7/2012	N	x	x	x
SB-12-5	SB-12-5-1FT-0812	0-1	8/8/2012	N	x	x	x
SB-12-5	SB-12-5-4FT-0813	2-4	8/8/2012	N	x	x	x
SB-12-5	SB-12-5-6FT-0814	5-6	8/8/2012	N	x	x	x
SB-12-5	SB-DUP-02	5-6	8/8/2012	N	x	x	x
SB-12-6	SB-12-6-1FT-0812	0-1	8/8/2012	N	x	x	x
SB-12-6	SB-12-6-4FT-0813	2-4	8/8/2012	N	x	x	x
SB-12-6	SB-12-6-6FT-0814	5-6	8/8/2012	N	x	x	x

Notes:
N - Normal Analytical

Table 2-11
2012 Surface Water and Sediment Samples and Analyses
Commerce Street Plume Superfund Site
Williston, Vermont

Sediment

Sample Location	Sample ID	Sample Date	Sample Type	Mercury	TAL Metals Total	SVOCs	VOCs	TOC	Anions
PW2	PW2-SED	9/12/2012	N	x	x	x	x	x	
PW11	PW11-DUP-SED	9/12/2012	Duplicate	x	x	x	x	x	
PW11	PW11-SED	9/12/2012	N	x	x	x	x	x	
PW17	PW17-SED	9/11/2012	N	x	x	x	x	x	
PW20	PW20-SED	9/11/2012	N	x	x	x	x	x	

Surface Water

Sample Location	Sample ID	Sample Date	Sample Type	Mercury	TAL Metals Total	SVOCs	VOCs	TOC	Anions
PW2	PW2-SW	9/12/2012	N				x		x
PW11	PW11-SW	9/12/2012	N				x		x
PW11	PW11-DUP-SW	9/12/2012	Duplicate				x		x
PW17	PW17-SW	9/11/2012	N				x		x
PW20	PW20-SW	9/11/2012	N				x		x

Notes:
N - Normal Analytical

Table 2-12
Well Construction Summary
Commerce Street Plume Superfund Site
Williston, Vermont

Well ID	Aquifer	Diameter	Material	Total Depth (bgs)	Top of Screen	Bottom of Screen	Screen Length	Notes
Checkwells								
ASI-01D	DOB	0.62	Steel	36	31	36	5	NF/D
ASI-01S	SOB	0.62	Steel	14	4	14	10	NF/D
ASI-02D	DOB	0.62	Steel	41.2	35.7	40.7	5	
ASI-02S	SOB	0.62	Steel	15.4	4.9	14.9	10	
ASI-03D	DOB	0.62	Steel	41.4	35.9	40.9	5	
ASI-03S	SOB	0.62	Steel	16.5	6	16	10	
ASI-04D	DOB	0.62	Steel	40	34.5	39.5	5	
ASI-04S	SOB	0.62	Steel	16.5	6	16	10	
ASI-05D	DOB	0.62	Steel	40	34.5	39.5	5	
ASI-05S	SOB	0.62	Steel	16.5	6	16	10	
ASI-06D	DOB	0.62	Steel	46	41	46	5	NF/D
ASI-06S	SOB	0.62	Steel	16	6	16	10	NF/D
ASI-07D	DOB	0.62	Steel	35.5	30.5	35.5	5	NF/D
ASI-07S	SOB	0.62	Steel	16	6	16	10	NF/D
ASI-08D	DOB	0.62	Steel	36.8	31.3	36.3	5	Damaged
ASI-08S	SOB	0.62	Steel	18	7.5	17.5	10	
ASI-09D	DOB	0.62	Steel	41	35.5	40.5	5	NF/D
ASI-09S	SOB	0.62	Steel	18.1	7.6	17.6	10	NF/D
ASI-10D	IOB	0.62	Steel	26	20.6	25.6	5	NF/D
ASI-11D	DOB	0.62	Steel	40.6	35.1	40.1	5	
ASI-11S	SOB	0.62	Steel	13.5	3	13	10	
ASI-12D	DOB	0.62	Steel	46.5	41	46	5	NF/D
ASI-12S	SOB	0.62	Steel	15.5	5	15	10	
ASI-13D	DOB	0.62	Steel	36.5	31	36	5	
ASI-13S	SOB	0.62	Steel	16.5	6	16	10	
ASI-14D	DOB	0.62	Steel	47.5	42	47	5	
ASI-14S	SOB	0.62	Steel	19	8.5	18.5	10	
ASI-15D	DOB	0.62	Steel	41	35.5	40.5	5	
ASI-15S	SOB	0.62	Steel	16.5	6	16	10	
ASI-16D	DOB	0.62	Steel	46.2	40.7	45.7	5	
ASI-16S	SOB	0.62	Steel	19	9	19	10	
ASI-17D	DOB	0.62	Steel	36.5	31.5	36.5	5	NF/D
ASI-17S	SOB	0.62	Steel	16	6	16	10	NF/D
ASI-18D	DOB	0.62	Steel	37	32	37	5	NF/D
ASI-18S	SOB	0.62	Steel	15.5	5.5	15.5	10	NF/D
ASI-19D	DOB	0.62	Steel	36.7	31	36	5	NF/D
ASI-19S	SOB	0.62	Steel	16.5	6	16	10	NF/D
ASI-20D	DOB	0.62	Steel	36.7	31.2	36.2	5	NF/D
ASI-20S	SOB	0.62	Steel	14.5	4	14	10	NF/D
ASI-21D	DOB	0.62	Steel	38	32.5	37.5	5	NF/D
ASI-21S	SOB	0.62	Steel	16.5	6	16	10	NF/D
ASI-22D	DOB	0.62	Steel	41.1	35.6	40.6	5	Limited Access
ASI-22S	SOB	0.62	Steel	17.5	7	17	10	Limited Access
ASI-23D	DOB	0.62	Steel	39.7	34.2	39.2	5	
ASI-23S	SOB	0.62	Steel	18.5	8	18	10	
ASI-24D	DOB	0.62	Steel	41.5	36.5	41.5	5	NF/D
ASI-24S	SOB	0.62	Steel	14	4	14	10	NF/D
ASI-25D	DOB	0.62	Steel	40	35	40	5	NF/D
ASI-25S	SOB	0.62	Steel	16.5	6.5	16.5	10	NF/D
ASI-26D	DOB	0.62	Steel	39.5	34.5	39.5	5	NF/D
ASI-26S	SOB	0.62	Steel	17	7	17	10	NF/D
ASI-27D	DOB	0.62	Steel	41.5	36.5	41.5	5	NF/D
ASI-27S	SOB	0.62	Steel	16	6	16	10	NF/D
ASI-28D	DOB	0.62	Steel	36	31	36	5	NF/D
ASI-28S	SOB	0.62	Steel	16	6	16	10	NF/D

Table 2-12
Well Construction Summary
Commerce Street Plume Superfund Site
Williston, Vermont

Well ID	Aquifer	Diameter	Material	Total Depth (bgs)	Top of Screen	Bottom of Screen	Screen Length	Notes
ASI-29D	DOB	0.62	Steel	41.5	36.5	41.5	5	NF/D
ASI-29S	SOB	0.62	Steel	16	6	16	10	NF/D
ASI-30D	DOB	0.62	Steel	41.5	36.5	41.5	5	NF/D
ASI-30S	SOB	0.62	Steel	15.5	5.5	15.5	10	NF/D
ASI-31D	DOB	0.62	Steel	41.5	36.5	41.5	5	NF/D
ASI-31S	SOB	0.62	Steel	15	5	15	10	NF/D
ASI-32D	DOB	0.62	Steel	40	35	40	5	NF/D
ASI-32S	SOB	0.62	Steel	16.5	6.5	16.5	10	NF/D
Conventional Wells								
AIP-01	IOB			42	unknown	unknown	unknown	
AL-1	IOB	2	PVC	29.5	19.5	29.5	10	
AL-2	IOB	2	PVC	25.4	15	25	10	
AL-3		2	PVC					unknown
AL-4	IOB	2	PVC	25	15	25	10	unknown
AL-5	IOB	2	PVC	25	15	25	10	unknown
AL-6	IOB	2	PVC	25	15	25	10	unknown
AL-7		2	PVC					unknown
AL-8	DOB	2	PVC	40.5	35	40	5	unknown
AL-9	SOB	2	PVC	15	10	15	5	unknown
AL-10	IOB	2	PVC	32	20	30	10	unknown
AL-11		2	PVC					unknown
AL-12	SOB	2	PVC	13	3	13	10	
AL-13	SOB	2	PVC	16.3	6.3	16.3	10	unknown
AL-14	SOB	2	PVC	16	6	16	10	
AL-15	SOB	2	PVC	16.5	6.5	16.5	10	
AL-16	SOB	2	PVC	15.3	5.3	15.3	10	unknown
AL-17	SOB	2	PVC	14.3	4.3	14.3	10	unknown
AL-18	SOB	2	PVC	13.8	3.8	13.8	10	unknown
AL-19	SOB	2	PVC	13	3	13	10	unknown
AL-20	SOB	2	PVC	18	8	18	10	unknown
AL-21	SOB	2	PVC	12.3	2.3	12.3	10	unknown
ARC-1	SOB	2	PVC	18.5	5	20	15	NF/D
ARC-2	SOB	2	PVC	20	5	20	15	
ARC-3	SOB	2	PVC	20	5	20	15	
ASI-01D2	DOB	1.5	PVC	36	31	36	5	NF/D
ASI-02D2	IOB	1.5	PVC	31	26	31	5	
ASI-03D2	IOB	1.5	PVC	31	26	31	5	NF/D
ASI-04D2	DOB	1.5	PVC	35.5	30.5	35.5	5	
ASI-05D2	DOB	1.5	PVC	35.5	30.5	35.5	5	
ASI-06D2	DOB	1.5	PVC	36	31	36	5	NF/D
ASI-07D2	DOB	1.5	PVC	35.5	30.5	35.5	5	NF/D
ASI-08D2	IOB	1.5	PVC	30.5	25.5	30.5	5	NF/D
ASI-09D2	DOB	1.5	PVC	36	31	36	5	NF/D
ASI-11D2	DOB	1.5	PVC	40	35	40	5	
ASI-12D2	DOB	1.5	PVC	40	35	40	5	NF/D
ASI-13D2	DOB	1.5	PVC	36	31	36	5	
ASI-14D2	IOB	1.5	PVC	30	25	30	5	
ASI-15D2	DOB	1.5	PVC	40.5	35.5	40.5	5	
ASI-16D2	DOB	1.5	PVC	35	30	35	5	
ASI-20D2	IOB	1.5	PVC	30	25	30	5	NF/D
ASI-21D2	IOB	1.5	PVC	30	25	30	5	NF/D
ASI-23D2	IOB	1.5	PVC	30	25	30	5	
ASI-25D2	IOB	1.5	PVC	30	25	30	5	NF/D
ASI-26D2	DOB	1.5	PVC	40	35	40	5	NF/D
ASI-27D2	DOB	1.5	PVC	36	31	36	5	NF/D
ASI-28D2	DOB	1.5	PVC	35	30	35	5	NF/D

Table 2-12
Well Construction Summary
Commerce Street Plume Superfund Site
Williston, Vermont

Well ID	Aquifer	Diameter	Material	Total Depth (bgs)	Top of Screen	Bottom of Screen	Screen Length	Notes
ASI-29D2	DOB	1.5	PVC	40	35	40	5	NF/D
ASI-31D2	DOB	1.5	PVC	36	31	36	5	NF/D
BF-1	SOB	2	PVC	7.5	0.5	7.5	7	
BF-2	SOB	2	PVC	9	0.5	9	8.5	NF/D
BF-3	SOB	2	PVC	10.5	0.5	10.5	10	NF/D
BF-4	SOB	2	PVC	11.5	1.5	11.5	10	
BM-1D	DOB	2	PVC	43.5	28.5	43.5	15	NF/D
BM-2D	IOB	2	PVC	29	24	29	5	NF/D
BM-2S	SOB	2	PVC	14	4	14	10	NF/D
BM-3D	IOB	2	PVC	29	24	29	5	
BM-3S	IOB	2	PVC	23	13	23	10	
BR-1	DOB	1.5	PVC	123	113	123	10	
BW-1A	SOB	0.75	PVC	2	1	2	1	NF/D
BW-1B	SOB	0.75	PVC	3	2	3	1	NF/D
BW-1C	SOB	0.75	PVC	5	4	5	1	NF/D
BW-1D	SOB	0.75	PVC	13	12	13	1	NF/D
BW-2A	SOB	0.75	PVC	2	1	2	1	NF/D
BW-2B	SOB	0.75	PVC	3	2	3	1	NF/D
BW-2C	SOB	0.75	PVC	5	4	5	1	NF/D
BW-2D	SOB	0.75	PVC	14	13	14	1	NF/D
BW-3A	SOB	0.75	PVC	2	1	2	1	NF/D
BW-3B	SOB	0.75	PVC	3	2	3	1	NF/D
BW-3C	SOB	0.75	PVC	5	4	5	1	NF/D
BW-3D	SOB	0.75	PVC	14	13	14	1	NF/D
BW-5-Deep	IOB	0.75	PVC	25	24	25	1	
BW-5A	SOB	0.75	PVC	3	2	3	1	
BW-5B	SOB	0.75	PVC	4	3	4	1	
BW-5C	SOB	0.75	PVC	5.5	4	5.5	1.5	
BW-5D	SOB	0.75	PVC	15	14	15	1	
BW-7D	IOB	0.75	PVC	24	23	24	1	
BW-7S	SOB	0.75	PVC	7	6	7	1	
BW-8D	IOB	0.75	PVC	25	24	25	1	
BW-8S	SOB	0.75	PVC	5	4	5	1	
BW-9S	SOB	0.75	PVC	5	4	5	1	
BW-11-Deep	IOB	0.75	PVC	25	24	25	1	
BW-11A	SOB	0.75	PVC	3	2	3	1	
BW-11B	SOB	0.75	PVC	4	3	4	1	
BW-11C	SOB	0.75	PVC	7	5	7	2	
BW-11D	SOB	0.75	PVC	15	14	15	1	
BW-12D	IOB	0.75	PVC	22	22	23	1	
BW-12S	SOB	0.75	PVC	6	5	6	1	NF/D
BW-13D	IOB	0.75	PVC	23	22	23	1	NF/D
BW-13S	SOB	0.75	PVC	6	5	6	1	
BW-17D	IOB	0.75	PVC	22	21	22	1	NF/D
BW-17S	SOB	0.75	PVC	6	5	6	1	NF/D
BW-18D	IOB	0.75	PVC	21	20	21	1	NF/D
BW-18S	SOB	0.75	PVC	6	5	6	1	NF/D
BW-19D	IOB	0.75	PVC	20	19	20	1	NF/D
BW-19S	SOB	0.75	PVC	6	5	6	1	NF/D
JB-1	IOB	1	PVC	26	21.5	26	4.5	NF/D
JB-2	IOB	1	PVC	26.5	22	26.5	4.5	NF/D
MB-1	IOB	2	PVC	29	24	29	5	NF/D
MB-1A	SOB	2	PVC	9	4	9	5	NF/D
MB-2	IOB	2	PVC	29	24	29	5	NF/D
MB-2A	SOB	2	PVC	13	7	13	6	NF/D
MB-3	DOB	2	PVC	35	25	35	10	NF/D

Table 2-12
Well Construction Summary
Commerce Street Plume Superfund Site
Williston, Vermont

Well ID	Aquifer	Diameter	Material	Total Depth (bgs)	Top of Screen	Bottom of Screen	Screen Length	Notes
MB-3A	SOB	2	PVC	15	10	15	5	NF/D
MI-1	SOB	2	PVC	15	10	15	5	
MI-2	SOB	2	PVC	15	10	15	5	
MI-3	SOB	2	PVC	14	9	14	5	unknown
MI-4	SOB	2	PVC	13.7	8.7	13.7	5	unknown
MI-5	SOB	2	PVC	9.1	4.1	9.1	5	unknown
MI-6		2	PVC					NF/D
MI-7	SOB	2	PVC	14.5	9.5	14.5	5	unknown
MI-8	SOB	2	PVC	14.5	9.5	14.5	5	
MI-9	SOB	2	PVC	14.5	9.5	14.5	5	unknown
MW-01D	DOB	2	PVC	39.4	34.4	39.4	5	Nobis
MW-02M	IOB	2	PVC	29.3	24.3	29.3	5	Nobis
MW-03D	DOB	2	PVC	40.2	35.2	40.2	5	Nobis
MW-04D	DOB	2	PVC	39.5	34.5	39.5	5	Nobis
MW-05D	DOB	2	PVC	33.5	28.5	33.5	5	Nobis
MW-05D2	DOB	2	PVC	44.4	39.4	44.4	5	Nobis
MW-06M	IOB	2	PVC	28.9	23.9	28.9	5	Nobis
MW-06D	DOB	2	PVC	37.9	32.9	37.9	5	Nobis
MW-07M	IOB	2	PVC	34.3	29.3	34.3	5	Nobis
MW-08S	SOB	2	PVC	19	14	19	5	Nobis
MW-08M	IOB	2	PVC	24	19	24	5	Nobis
MW-09M	IOB	2	PVC	29.5	24.5	29.5	5	Nobis
MW-09D	DOB	2	PVC	39.6	34.6	39.6	5	Nobis
MW-10D	DOB	2	PVC	35	30	35	5	Nobis
MW-11S	SOB	2	PVC	19.3	14.3	19.3	5	Nobis
NO-1	IOB	2	PVC	32	27	32	5	NF/D
NO-2	IOB	2	PVC	23	18	23	5	NF/D
NO-3	SOB	2	PVC	19	14	19	5	NF/D
NO-4	SOB	2	PVC	14.7	4.7	14.7	10	NF/D
OE-1D	DOB	2	PVC	35	25	35	10	NF/D
OE-1S	SOB	2	PVC	13	3	13	10	NF/D
OE-2A	DOB	2	PVC	35	25	35	10	
OE-2B	SOB	2	PVC	13	3	13	10	
PH-1A	SOB	0.75	PVC	7	2	7	5	
PH-1B	DOB	0.75	PVC	45	44	45	1	
PH-2A	SOB	0.75	PVC	8	3	8	5	
PH-2B	DOB	0.75	PVC	41	40	41	1	
PO-north	SOB	2	PVC	10	3	10	7	NF/D
PO-south	SOB	2	PVC	14	4	14	10	NF/D
RB-1	DOB	2	PVC	35	30	35	5	NF/D
RB-2	DOB	2	PVC	40	35	40	5	NF/D
RB-3	DOB	2	PVC	40	35	40	5	NF/D
Bedrock Wells								
BR-2	BR	1.5	PVC	129	104.5	129	24.5	NF/D

Notes:

NF/D: not found/destroyed in Nobis inventory
SOB: water table/shallow overburden aquifer (total depth less than 20 feet)
IOB: intermediate overburden aquifer (total depth less than 30 feet, top of screen below 20 feet)
DOB: deep overburden aquifer (total depth greater than 30 feet)

Table 3-1
Groundwater Elevation Measurements
Commerce Street Plume Superfund Site
Williston, Vermont

Well ID	Reference Elevation (ft msl)	Fall 2008		January 2009		Spring 2010		Fall 2010		October 2011		June 2012	
		Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (feet TOC)	Water Elevation (feet msl)
Shallow Overburden													
ASI-02S	338.6	--	--	6.30	332.30	5.91	332.69	6.56	332.04	3.61	334.99	--	--
ASI-03S	338.7	--	--	5.85	332.85	5.54	333.16	6.14	332.56	5.65	333.05	--	--
ASI-04S	338.5	--	--	6.56	331.94	6.49	332.01	7.03	331.47	5.85	332.65	--	--
ASI-05S	338.2	--	--	6.28	331.92	5.98	332.22	6.61	331.59	5.89	332.31	--	--
ASI-08S	337.7	--	--	6.42	331.28	6.33	331.37	7.03	330.67	7.25	330.45	--	--
ASI-11S	339.7	--	--	3.71	335.99	2.09	337.61	2.74	336.96	2.88	336.82	--	--
ASI-13S	341.0	--	--	6.83	334.17	5.47	335.53	5.98	335.02	5.60	335.40	--	--
ASI-14S	339.7	7.25	332.45	--	--	4.87	334.83	5.50	334.20	5.14	334.56	--	--
ASI-15S	341.0	--	--	6.56	334.44	8.81	332.19	9.41	331.59	4.86	336.14	--	--
ASI-16S	343.2	--	--	7.97	335.23	7.80	335.40	8.47	334.73	8.21	334.99	--	--
ASI-22S	337.1	--	--	--	--	6.97	330.13	7.66	329.44	6.19	330.91	--	--
ASI-23S	341.7	8.32	333.38	8.30	333.40	8.42	333.28	8.33	333.37	7.45	334.25	--	--
AL-1	341.7	8.18	333.52	--	--	--	--	--	--	--	--	--	--
AL-12	345.6	--	--	--	--	8.27	337.32	8.72	336.87	7.84	337.75	8.59	337.00
AL-14	343.3	7.30	336.00	--	--	6.53	336.77	7.22	336.08	5.94	337.36	7.22	336.08
AL-15	342.9	7.59	335.31	7.71	335.19	7.00	335.90	7.58	335.32	6.37	336.53	7.88	335.02
ARC-3	340.2	4.35	335.85	4.54	335.66	3.92	336.28	4.46	335.74	3.10	337.10	--	--
BF-4	340.5	8.42	332.08	8.76	331.74	7.78	332.72	8.44	332.06	7.28	333.22	8.40	332.10
BM-3S	342.5	7.42	335.08	7.51	334.99	6.81	335.69	7.39	335.11	6.16	336.34	7.40	335.10
BW-13S	340.8	5.65	335.15	5.65	335.15	5.14	335.66	5.11	335.69	4.00	336.80	--	--
MI-1	342.6	7.20	335.36	6.87	335.69	6.15	336.41	6.91	335.65	5.48	337.08	6.97	335.59
MI-2	342.3	6.86	335.44	6.50	335.80	5.89	336.41	6.62	335.68	5.21	337.09	6.61	335.69
MI-8	341.6	4.10	337.50	6.30	335.30	5.68	335.92	6.31	335.29	4.99	336.61	6.40	335.20
OE-2B	337.9	7.34	330.56	7.44	330.46	6.78	331.12	7.03	330.87	6.11	331.79	--	--
PH-3A	337.7	--	--	4.46	333.24	4.57	333.13	4.82	332.88	4.11	333.59	--	--
MW-08S	334.6	--	--	--	--	--	--	1.84	332.80	1.18	333.46	1.96	332.68
MW-11S	343.5	--	--	--	--	--	--	7.06	336.43	5.53	337.96	7.08	336.41

Table 3-1
Groundwater Elevation Measurements
Commerce Street Plume Superfund Site
Williston, Vermont

Well ID	Reference Elevation (ft msl)	Fall 2008		January 2009		Spring 2010		Fall 2010		October 2011		June 2012	
		Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (feet TOC)	Water Elevation (feet msl)
Intermediate/Deep Overburden													
AL-02	341.9	--	--	--	--	--	--	7.81	334.04	6.75	335.10	--	--
ASI-02D2	339.0	6.75	332.25	6.94	332.06	6.59	332.41	4.86	334.14	6.01	332.99	6.86	332.14
ASI-03D	338.3	--	--	6.30	332.00	5.82	332.48	--	--	--	--	--	--
ASI-03D2	337.3	--	--	--	--	5.10	332.16	5.34	331.92	4.50	332.76	5.54	331.72
ASI-04D2	338.2	6.27	331.93	7.30	330.90	7.13	331.07	7.14	331.06	6.50	331.70	7.17	331.03
ASI-05D2	338.4	6.82	331.58	6.53	331.87	6.48	331.92	6.42	331.98	6.09	332.31	6.37	332.03
ASI-08D	336.3	--	--	7.97	328.33	7.41	328.89	8.25	328.05	5.76	330.54	--	--
ASI-10D	335.3	--	--	8.35	326.95	7.71	327.59	8.52	326.78	--	--	--	--
ASI-11D2	337.8	2.86	334.94	2.99	334.81	2.00	335.80	2.88	334.92	1.44	336.36	2.98	334.82
ASI-13D	340.4	--	--	--	--	5.19	335.21	6.06	334.34	4.77	335.63	7.50	332.90
ASI-14D2	339.8	6.57	333.23	6.64	333.16	6.01	333.79	6.53	333.27	5.33	334.47	--	--
ASI-15D2	341.3	7.11	334.19	6.82	334.48	6.27	335.03	9.75	331.55	5.48	335.82	--	--
ASI-16D2	342.3	--	--	8.34	333.96	7.93	334.37	8.37	333.93	7.22	335.08	--	--
ASI-22D	336.0	--	--	--	--	4.87	331.13	5.12	330.88	5.93	330.07	--	--
ASI-23D2	340.3	7.01	333.29	7.14	333.16	6.71	333.59	7.07	333.23	6.15	334.15	--	--
BW-5D	341.1	--	--	7.42	333.68	7.09	334.01	--	--	--	--	--	--
BW-7D	339.7	--	--	6.50	333.20	5.88	333.82	--	--	--	--	--	--
BM-3D	341.9	6.42	335.48	--	--	5.89	336.01	6.44	335.46	5.23	336.67	6.45	335.45
BW-8D	341.0	--	--	6.98	334.02	5.14	335.86	--	--	--	--	--	--
BW-11D	342.7	--	--	9.39	333.31	9.41	333.29	--	--	--	--	--	--
BW-13D	340.9	--	--	5.70	335.20	5.12	335.78	--	--	--	--	--	--
MW-01D	339.4	--	--	--	--	--	--	2.89	336.54	1.86	337.57	2.81	336.62
MW-02M	339.1	--	--	--	--	--	--	3.23	335.84	2.41	336.66	--	--
MW-03D	342.9	--	--	--	--	--	--	7.33	335.57	5.96	336.94	--	--
MW-04D	338.6	--	--	--	--	--	--	4.02	334.62	2.83	335.81	4.05	334.59
MW-05D	339.1	--	--	--	--	--	--	5.19	333.92	4.06	335.05	5.05	334.06
MW-05D2	338.9	--	--	--	--	--	--	4.56	334.31	3.89	334.98	5.25	333.62
MW-06M	337.2	--	--	--	--	--	--	5.54	331.69	5.31	331.92	5.52	331.71

Table 3-1
Groundwater Elevation Measurements
Commerce Street Plume Superfund Site
Williston, Vermont

Well ID	Reference Elevation (ft msl)	Fall 2008		January 2009		Spring 2010		Fall 2010		October 2011		June 2012	
		Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (feet TOC)	Water Elevation (feet msl)
MW-06D	337.3	--	--	--	--	--	--	5.58	331.72	5.34	331.96	5.57	331.73
MW-07M	334.6	--	--	--	--	--	--	5.95	328.69	5.12	329.52	6.28	328.36
MW-08M	334.6	--	--	--	--	--	--	1.84	332.75	1.20	333.39	2.00	332.59
MW-09M	343.2	--	--	--	--	--	--	9.52	333.66	8.43	334.75	9.90	333.28
MW-09D	343.3	--	--	--	--	--	--	9.59	333.67	8.52	334.74	9.98	333.28
MW-10D	336.1	--	--	--	--	--	--	3.41	332.70	2.55	333.56	3.62	332.49
OE-2A	337.9	7.42	330.48	7.44	330.46	3.82	334.08	7.11	330.79	6.19	331.71	7.48	330.42
BR-1	343.5	8.77	334.73	16.84	326.66	18.24	325.26	18.07	325.43	--	--	18.20	325.30

Notes:
ft TOC = feet below top of casing
ft MSL = feet above mean sea level
"--" = not measured

Table 3-2
Average Groundwater Elevations
Commerce Street Plume Superfund Site
Williston, Vermont

Well ID	Reference Elevation (ft msl)	Fall 2008		January 2009		Spring 2010		Fall 2010		October 2011		June 2012	
		Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (ft TOC)	Water Elevation (ft msl)	Depth to Water (feet TOC)	Water Elevation (feet msl)
Shallow Overburden													
AL-15	342.9	7.59	335.31	7.71	335.19	7.00	335.90	7.58	335.32	6.37	336.53	7.88	335.02
BF-4	340.5	8.42	332.08	8.76	331.74	7.78	332.72	8.44	332.06	7.28	333.22	8.40	332.10
BM-3S	342.5	7.42	335.08	7.51	334.99	6.81	335.69	7.39	335.11	6.16	336.34	7.40	335.10
MI-1	342.6	7.20	335.36	6.87	335.69	6.15	336.41	6.91	335.65	5.48	337.08	6.97	335.59
MI-2	342.3	6.86	335.44	6.50	335.80	5.89	336.41	6.62	335.68	5.21	337.09	6.61	335.69
MI-8	341.6	4.10	337.50	6.30	335.30	5.68	335.92	6.31	335.29	4.99	336.61	6.40	335.20
average	NA	6.93	335.13	7.28	334.79	6.55	335.51	7.21	334.85	5.92	336.15	7.28	334.78
Intermediate/Deep Overburden													
ASI-04D2	338.2	6.27	331.93	7.30	330.90	7.13	331.07	7.14	331.06	6.50	331.70	7.17	331.03
ASI-05D2	338.4	6.82	331.58	6.53	331.87	6.48	331.92	6.42	331.98	6.09	332.31	6.37	332.03
ASI-11D2	337.8	2.86	334.94	2.99	334.81	2.00	335.80	2.88	334.92	1.44	336.36	2.98	334.82
OE-2A	337.9	7.42	330.48	7.44	330.46	3.82	334.08	7.11	330.79	6.19	331.71	7.48	330.42
average	NA	5.84	332.23	6.07	332.01	4.86	333.22	5.89	332.19	5.06	333.02	6.00	332.08

Notes:
ft TOC = feet below top of casing
ft MSL = feet above mean sea level
NA = not applicable

Table 3-3
Vertical Gradients in Overburden Groundwater
Commerce Street Plume Superfund Site
Williston, Vermont

Couplet	Spring 2010		Fall 2010		Fall 2011	
	Magnitude	Direction	Magnitude	Direction	Magnitude	Direction
ASI-02S/D2	-0.012	down	0.087	up	-0.077	down
ASI-03S/D2	-0.042	down	-0.027	down	-0.012	down
ASI-04S/D2	-0.033	down	-0.015	down	-0.033	down
ASI-05S/D2	-0.011	down	0.014	up	0.000	--
ASI-08S/D	-0.103	down	-0.112	down	0.004	up
ASI-11S/D2	-0.049	down	-0.056	down	-0.013	down
ASI-13S/D	-0.011	down	-0.023	down	0.008	up
ASI-14S/D2	-0.030	down	-0.027	down	-0.003	down
ASI-15S/D2	0.091	up	-0.001	down	-0.009	down
ASI-16S/D2	-0.028	down	-0.022	down	0.002	up
ASI-22S/D	0.030	up	0.045	up	-0.025	down
ASI-23S/D2	0.014	up	-0.006	down	-0.004	down
MW-08S/D	--	--	-0.003	down	-0.003	down

Note:
Water elevations assumed to be associated with the midpoint of the screen for wells screened below the water table. Water elevations assumed to be the midpoint of the water table elevation and bottom of screen for wells screened across the water table.

Table 3-4
Horizontal Gradients and Groundwater Velocities
Commerce Street Plume Superfund Site
Williston, Vermont

Location	dh (ft)	dl (ft)	dh/dl	K (ft/day)	ne	(ft/day)	(ft/yr)
Fall 2010 (low water) Groundwater Velocities							
Shallow Groundwater							
Between MW-11S and ASI-16S	1.7	980	0.0017	13.1	0.2	0.11	41.5
Between ARC-3 and ASI-14S	0.82	640	0.0013	13.1	0.2	0.17	63.5
Between ASI-14S and ASI-08S	3.53	700	0.0050	13.1	0.2	0.33	121
Between BM-3S and PH-3A	2.23	355	0.0063	13.1	0.2	0.41	150
Between ASI-13S and ASI-02S	2.98	480	0.0062	13.1	0.2	0.41	148
					Average:	***0.29***	***93.9***
Intermediate/Deep Groundwater							
Between MW-01D and BM-03D	1.08	630	0.0017	3.79	0.2	0.03	11.9
Between MW-04D and MW-06D/M	2.9	480	0.0060	3.79	0.2	0.11	41.8
Between MW-05D/D2 and ASI-10D	8.24	1700	0.0048	3.79	0.2	0.03	11.8
Between MW-01D and MW-08M	3.79	1500	0.0025	3.79	0.2	0.05	17.5
Between MW-03D and ASI-23D2	2.34	1160	0.0020	3.79	0.2	0.04	14.0
					Average:	***0.05***	***19.4***
Fall 2011 (high water) Groundwater Velocities							
Shallow Groundwater							
Between MW-11S and ASI-14S	3.4	1410	0.0024	13.1	0.2	0.16	57.6
Between ASI-13S and MW-08S	3.34	805	0.0041	13.1	0.2	0.28	101
Between AL-15 and PH-3A	2.94	300	0.0098	13.1	0.2	0.73	266
Between ASI-14S and ASI-22S	3.65	895	0.0041	13.1	0.2	0.27	97.5
Between ASI-11S and ASI-02S	1.83	755	0.0024	13.1	0.2	0.16	57.9
					Average:	***0.32***	***100***
Intermediate/Deep Groundwater							
Between ASI-11D2 and MW-10D	2.8	1080	0.0026	3.79	0.2	0.05	17.9
Between MW-04D and MW-06D/M	3.87	480	0.0081	3.79	0.2	0.15	55.8
Between MW-13D and MW-07M	3.41	800	0.0043	3.79	0.2	0.09	33.5
Between MW-01D and MW-08M	4.18	1500	0.0028	3.79	0.2	0.05	19.3
Between MW-03D and ASI-23D2	2.79	1160	0.0024	3.79	0.2	0.05	16.6
					Average:	***0.08***	***28.6***

Table 3-5
Hydraulic Conductivity
Commerce Street Plume Superfund Site
Williston, Vermont

Slug Test Results[1]

source	well ID	screened depth bgs (ft)	unit	K (ft/day)
1986 Vermont AEC[4]	AL-1	19.5 - 29.5	IOB	2.24
	AL-2	15 - 25	IOB	1.73
	AL-4	15 - 25	IOB	0.86
	AL-7	unknown		1.26
	AL-8	35 - 40	DOB	1.94
	MI-7	9.5 - 14.5	SOB	3.47
	MI-8	9.5 - 14.5	SOB	0.98
Johnson 1999[5]	ARC-1	3.5 - 18.5	SOB	19.8
	RB-1	30 - 35	DOB	2.26
	RB-3	35 - 40	DOB	1.13
HSI Geo Trans 2000	ASI-06D2	31 - 36	DOB	2.63
	ASI-09D2	31 - 36	DOB	1.73
	ASI-11D2	35 - 40	DOB	9.40
	ASI-12D2	35 - 40	DOB	6.83
	ASI-13D2	31 - 36	DOB	2.96
	ASI-16D2	30 - 35	DOB	7.38
	ASI-20D2	25 - 30	IOB	4.37
	ASI-23D2	25 - 30	IOB	8.76
Nobis 2013	BR-1	113 - 123	BR	8.56E-04
	MW-6M	24 - 29	IOB	4.13
	MW-7M	29 - 34	IOB	2.28
	MW-8S	14 - 19	SOB	15.3
	MW-11S	14 - 19	SOB	26.1

Pump Test Results[2]

pump well	obs. well	screened depth bgs (ft)	radial K (ft/day)	K_z (ft/day)	vertical anisotropy ratio	transmiss. (ft^2/day)	radial anisotropy ratio (ASI/NO-2)
NO-1	NO1	27 - 32	--	--	--	286	0.476
	ASI-12D2	35 - 40	11.4	0.629	3	319	
	NO-2	18 - 23	15.3	0.672	20	592	

Waterloo™ Profiler Results[3]

boring	depth interval 1		depth interval 2		depth interval 3		depth interval 4		depth interval 5	
	depth (ft bgs)	relative K	depth (ft bgs)	relative K	depth (ft bgs)	relative K	depth (ft bgs)	relative K	depth (ft bgs)	relative K
WP-1	0 - 4	M	4-5	L	5 - 38	M	38 - 41	M/L		
WP-2	0 - 3	H	3 - 34	M	34 - 42	L	42 - 43	M/L	43 - 45	L
WP-3	0 - 26	M	26 - 38	M/L	38 - 46	M	46 - 46	H	46 - 48	M
WP-4	0 - 5	H	5 - 15	M/H	15 - 21	H	21 - 33	M	33 - 35	L
WP-5	0 - 29	M	29 - 30	L	30 - 33	M	33 - 34	L		
WP-6	0 - 3	H	3 - 10	M	10 - 16	H	16 - 20	H	20 - 36	M/H
WP-7	0 - 26	M	26 - 29	M/L	29 - 40	L	40 - 57	M/L		
WP-8	0 - 5	H	5 - 8	M	8 - 12	H	12 - 25	M/H	25 - 29	M/L

Notes:

L = low relative hydraulic conductivity
M = moderate relative hydraulic conductivity
H = high relative hydraulic conductivity
SOB = shallow overburden
IOB = intermediate overburden
DOB = deep overburden
BR = bedrock

1. Slug test performed by sources on dates indicated.
2. Pump test performed by HSI Geotrans (Site Investigation Report, July 25, 2000)
3. Waterloo profile results performed under the direction of Nobis in August/September 2011.
4. Vermont AEC, Draft Report on Investigations of Contamination Emanating from the Alling Industrial Park. February, 1986.
5. Johnson Company, Limited Groundwater Investigation for Alling Industrial Park, 1999.

Table 4-1
2010 Soil - VOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-IND-SOIL-MAY2012		EPA-RSL-RES-SO-MAY2012		VT-RISK-BASED	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
Trichloroethylene	79-01-6	µg/Kg	1,880	1	12,500	3,360	18 / 48	38%	SB-02	6,400	**2**	910	**6**	860	**6**

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.
EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.
VT-RISK-BASED - Vermont Department of Health risk-based residential soil screening values
µg/Kg - Micrograms per kilogram
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-2
2012 Soil - VOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-RES-SO-MAY2012		EPA-RSL-IND-SOIL-MAY2012		VT-RISK-BASED	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
Acetone	67-64-1	µg/Kg	108	72	140	27.3	5 / 41	12%	SB-12-2	61,000,000	0	630,000,000	0	--	
Trichloroethylene	79-01-6	µg/Kg	437	92.7	2,100	705	7 / 41	17%	SB-12-2	910	**1**	6,400	0	860	**1**

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.
EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.
VT-RISK-BASED - Vermont Department of Health risk-based residential soil screening values
µg/Kg - Micrograms per kilogram
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-3
2012 Soil - SVOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

										Action Level Code	EPA-RSL-RES-SO-MAY2012		EPA-RSL-IND-SOIL-MAY2012		VT-RISK-BASED	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
Benzo(A)Anthracene	56-55-3	µg/Kg	370	370	370	0	1 / 41	2%	SB-12-5	150	**1**	2,100	0	--	
Benzo(A)Pyrene	50-32-8	µg/Kg	320	320	320	0	1 / 41	2%	SB-12-5	15	**1**	210	**1**	10	**1**
Benzo(B)Fluoranthene	205-99-2	µg/Kg	360	360	360	0	1 / 41	2%	SB-12-5	150	**1**	2,100	0	--	
Benzo(K)Fluoranthene	207-08-9	µg/Kg	300	300	300	0	1 / 41	2%	SB-12-5	1,500	0	21,000	0	--	
Chrysene	218-01-9	µg/Kg	410	410	410	0	1 / 41	2%	SB-12-5	15,000	0	210,000	0	--	
Fluoranthene	206-44-0	µg/Kg	700	700	700	0	1 / 41	2%	SB-12-5	2,300,000	0	22,000,000	0	--	
Pyrene	129-00-0	µg/Kg	540	540	540	0	1 / 41	2%	SB-12-5	1,700,000	0	17,000,000	0	--	

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.
EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.
VT-RISK-BASED - Vermont Department of Health risk-based residential soil screening values
µg/Kg - Micrograms per kilogram
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-4
2012 Soil - Metals - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-RES-SO-MAY2012		EPA-RSL-IND-SOIL-MAY2012		VT-RISK-BASED	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
Aluminum	7429-90-5	mg/Kg	7,500	3,600	36,000	6,920	41 / 41	100%	SB-12-1	77,000	0	990,000	0	--	
Arsenic	7440-38-2	mg/Kg	4.4	2.6	9.2	1.65	40 / 41	98%	SB-12-1	0.39	**40**	1.6	**40**	--	
Barium	7440-39-3	mg/Kg	30.8	7.4	270	57.3	41 / 41	100%	SB-12-1, SB-12-2	15,000	0	190,000	0	--	
Cadmium	7440-43-9	mg/Kg	2.5	1.1	4.2	1.36	3 / 41	7%	SB-12-5	70	0	800	0	34.5	0
Calcium	7440-70-2	mg/Kg	4,760	780	12,000	3,820	41 / 41	100%	SB-12-1	--		--		--	
Chromium	7440-47-3	mg/Kg	39	10	320	73.8	41 / 41	100%	SB-12-5	0.29	**41**	5.6	**41**	--	
Cobalt	7440-48-4	mg/Kg	6.74	3.7	20	3.55	40 / 41	98%	SB-12-1	23	0	300	0	--	
Copper	7440-50-8	mg/Kg	20.1	7.6	140	21.4	40 / 41	98%	SB-12-5	3,100	0	41,000	0	--	
Iron	7439-89-6	mg/Kg	16,700	6,900	44,000	7,820	41 / 41	100%	SB-12-1	55,000	0	720,000	0	--	
Lead	7439-92-1	mg/Kg	5	2.4	17	3.78	40 / 41	98%	SB-12-1	400	0	800	0	--	
Magnesium	7439-95-4	mg/Kg	4,330	2,000	18,000	3,640	41 / 41	100%	SB-12-1	--		--		--	
Manganese	7439-96-5	mg/Kg	358	110	1,800	285	41 / 41	100%	SB-12-2	1,800	0	23,000	0	--	
Nickel	7440-02-0	mg/Kg	21	13	78	11.6	41 / 41	100%	SB-12-1	1,500	0	20,000	0	--	
Vanadium	7440-62-2	mg/Kg	16.6	8.2	69	12.6	41 / 41	100%	SB-12-2	390	0	5,200	0	--	
Zinc	7440-66-6	mg/Kg	32.3	18	100	20.2	41 / 41	100%	SB-12-1, SB-12-2	23,000	0	310,000	0	--	

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.
EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.
VT-RISK-BASED Vermont Department of Health risk-based residential soil screening values
mg/Kg - Milligrams per kilogram
--- No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-5
2013 Soil - Metals - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-RES-SO-MAY2012		EPA-RSL-IND-SOIL-MAY2012		VT-RISK-BASED	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
Chromium	7440-47-3	mg/Kg	10.7	7.5	16	3.07	6/6	100%	SB-13-02-1213B	12,000	0	180,000	0	--	
Chromium-Hexavalent	18540-29-9	mg/Kg	0.85	0.85	0.85	--	1/6	17%	SB-13-02-1213B	0.29	1	6.3	0	--	

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.
EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.
VT-RISK-BASED - Vermont Department of Health risk-based residential soil screening values
mg/Kg - Milligrams per kilogram
--- No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-6
2014 Residential Soil - VOCs and Metals - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

										Action Level Code	EPA-RSL-IND-SOIL-MAY2012		EPA-RSL-RES-SO-MAY2012		VT-RISK-BASED	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**Loc. Of Max. Conc.**	**Max. Sample ID**		**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
Acetone	67-64-1	µg/Kg	187	187	187	0	1 / 12	SB-14-04	SB-14-04-0001		67,000,000	0	6,100,000	0	--	
Trichloroethylene	79-01-6	µg/Kg	909	909.4	909.4	0	1 / 12	SB-14-04	SB-14-04-0001		1,900	0	410	**1**	860	**1**
Aluminum	7429-90-5	mg/Kg	7,800	12,000	5,200	2,440	10 / 10	SB-14-13	SB-14-13-0001		110,000	0	7,700	**4**	--	
Arsenic	7440-38-2	mg/Kg	5.5	7.2	3.7	1.14	10 / 10	SB-14-09	SB-14-09-0306		3	**10**	1	**10**	--	
Barium	7440-39-3	mg/Kg	24.9	43	13	11.8	10 / 10	SB-14-13	SB-14-13-0001		22,000	0	1,500	0	--	
Calcium	7440-70-2	mg/Kg	1,790	3,000	960	569	10 / 10	SB-14-04	SB-14-04-0001		--		--		--	
Chromium	7440-47-3	mg/Kg	16	24	14	2.94	10 / 10	SB-14-13	SB-14-13-0001		180,000	0	12,000	0	--	
Cobalt	7440-48-4	mg/Kg	5.68	6.9	3.6	1.05	10 / 10	SB-14-09	SB-14-09-0306		35	0	2	**10**	--	
Copper	7440-50-8	mg/Kg	11.1	15	7.7	2.16	10 / 10	SB-14-13	SB-14-13-0001		4,700	0	310	0	--	
Iron	7439-89-6	mg/Kg	16,700	19,000	14,000	1,770	10 / 10	SB-14-13	SB-14-13-0001		82,000	0	5,500	**10**	--	
Lead	7439-92-1	mg/Kg	7.66	18	4.1	4.38	10 / 10	SB-14-04	SB-14-04-0001		800	0	400	0	--	
Magnesium	7439-95-4	mg/Kg	2,600	3,200	1,900	457	10 / 10	SB-14-09	SB-14-09-0306		--		--		--	
Manganese	7439-96-5	mg/Kg	281	360	210	50.2	10 / 10	SB-14-10	SB-14-10-0306		2,600	0	180	**10**	--	
Nickel	7440-02-0	mg/Kg	16.5	22	11	3.31	10 / 10	SB-14-09	SB-14-09-0306		2,200	0	150	0	--	
Vanadium	7440-62-2	mg/Kg	17.9	23	14	3.21	10 / 10	SB-14-13	SB-14-13-0001		580	0	39	0	--	
Zinc	7440-66-6	mg/Kg	34.9	63	25	11.3	10 / 10	SB-14-04	SB-14-04-0001		35,000	0	2,300	0	--	

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.
EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.
√T-RISK-BASED - Vermont Department of Health risk-based residential soil screening values
µg/Kg - Micrograms per kilogram
mg/Kg - Milligrams per kilogram
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-7
2008 Groundwater - VOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
1,2,4-Trichlorobenzene	120-82-1	µg/L	0.58	0.58	0.58	0	1 / 25	4%	MI-01	70	0	70	0
1,2-Dibromo-3-Chloropropane	96-12-8	µg/L	0.84	0.84	0.84	0	1 / 25	4%	MI-01	0.2	**1**	--	
1,3-Dichlorobenzene	541-73-1	µg/L	0.22	0.22	0.22	0	1 / 25	4%	MI-01	--		600	0
1,4-Dichlorobenzene	106-46-7	µg/L	0.23	0.23	0.23	0	1 / 25	4%	AL-14	75	0	75	0
Acetone	67-64-1	µg/L	14.8	3.8	54	14.8	17 / 25	68%	AL-1	--		700	0
Chloroform	67-66-3	µg/L	1.7	1.5	1.9	0.231	2 / 25	8%	ASI-23S	80	0	80	0
cis-1,2-Dichloroethylene	156-59-2	µg/L	14.4	0.28	36	10.9	11 / 25	44%	ASI-11D2	70	0	70	0
Dichlorodifluoromethane	75-71-8	µg/L	1.3	1.3	1.3	0	1 / 25	4%	BM-3D	--		1000	0
Ethylbenzene	100-41-4	µg/L	0.12	0.12	0.12	0	1 / 25	4%	BF-4	700	0	700	0
Isopropylbenzene	98-82-8	µg/L	0.17	0.13	0.21	0.0566	2 / 25	8%	BF-4	--		--	
m,p-Xylene	179601-23-1	µg/L	0.22	0.22	0.22	0	1 / 25	4%	BR-1	10000	0	10000	0
Methyl Tert-Butyl Ether	1634-04-4	µg/L	1	1	1	0	1 / 25	4%	BM-3D	--		40	0
Methylene Chloride	75-09-2	µg/L	2.28	0.13	17	4.41	13 / 25	52%	ASI-15D2	5	**1**	5	**1**
Tetrachloroethylene	127-18-4	µg/L	0.5	0.46	0.54	0.0462	2 / 25	8%	BM-3D	5	0	5	0
Toluene	108-88-3	µg/L	0.34	0.34	0.34	0	1 / 25	4%	BR-1	1000	0	1000	0
trans-1,2-Dichloroethylene	156-60-5	µg/L	0.4	0.33	0.47	0.0808	2 / 25	8%	ASI-02D2	100	0	100	0
Trichloroethylene	79-01-6	µg/L	1250	0.1	5300	1730	20 / 25	80%	ASI-15D2	5	**10**	5	**10**

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-8
May 2010 Groundwater - VOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
1,4-Dichlorobenzene	106-46-7	µg/L	0.22	0.22	0.22	0	1 / 29	3%	AL-14	75	0	75	0
Acetone	67-64-1	µg/L	7.2	7.2	7.2	0	1 / 29	3%	BR-1	--		700	0
Carbon Disulfide	75-15-0	µg/L	0.38	0.38	0.38	0	1 / 29	3%	ASI-23S	--		--	
Chloroform	67-66-3	µg/L	0.46	0.46	0.46	0	1 / 29	3%	ASI-23S	80	0	80	0
cis-1,2-Dichloroethylene	156-59-2	µg/L	241	0.46	2,500	731	11 / 29	38%	ASI-03D2	70	**1**	70	**1**
Cyclohexane	110-82-7	µg/L	0.16	0.16	0.16	0	1 / 29	3%	BM-3D	--		--	
Dichlorodifluoromethane	75-71-8	µg/L	1.95	1.2	2.7	1.06	2 / 29	7%	AL-12	--		1,000	0
Methyl Tert-Butyl Ether	1634-04-4	µg/L	0.86	0.86	0.86	0	1 / 29	3%	BM-3D	--		40	0
Tetrachloroethylene	127-18-4	µg/L	0.61	0.56	0.64	0.039	3 / 29	10%	AL-2	5	0	5	0
Toluene	108-88-3	µg/L	0.17	0.17	0.17	0	1 / 29	3%	BR-1	1,000	0	1,000	0
trans-1,2-Dichloroethylene	156-60-5	µg/L	6.64	0.28	13	7.34	2 / 29	7%	ASI-03D2	100	0	100	0
Trichloroethylene	79-01-6	µg/L	1,380	0.15	6,100	1,840	16 / 29	55%	ASI-03D2	5	**11**	5	**11**

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-9
June 2010 - Porewater - VOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-GW-MCL-MAY2012	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**
cis-1,2-Dichloroethylene	156-59-2	µg/L	381	4.9	1,700	556	9 / 21	43%	PW-11	70	**6**
Methylene Chloride	75-09-2	µg/L	4.71	2.5	13	2.63	16 / 21	76%	PW-11	5	**3**
trans-1,2-Dichloroethylene	156-60-5	µg/L	9.4	8.8	10	0.849	2 / 21	10%	PW-11	100	0
Trichloroethylene	79-01-6	µg/L	288	3.7	1,100	541	4 / 21	19%	PW-11	5	**3**
Vinyl Chloride	75-01-4	µg/L	89.9	4.2	180	71.8	6 / 21	29%	PW-09	2	**6**

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-10
2010 Vertical Profiling Groundwater - VOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
Acetone	67-64-1	µg/L	1.37	1.1	1.7	0.214	7 / 64	11%	VP-33	--		700	0
Carbon Disulfide	75-15-0	µg/L	0.945	0.93	0.96	0.0212	2 / 64	3%	VP-10	--		--	
cis-1,2-Dichloroethylene	156-59-2	µg/L	1550	1	18000	5070	12 / 64	19%	VP-22	70	**3**	70	**3**
Dichlorodifluoromethane	75-71-8	µg/L	9.67	3	13	5.77	3 / 64	5%	VP-44, WP-08	--		1000	0
Methyl Tert-Butyl Ether	1634-04-4	µg/L	3.22	1.4	4.8	1.09	6 / 64	9%	VP-06	--		40	0
Tetrachloroethylene	127-18-4	µg/L	28	0.98	82	41.8	3 / 64	5%	VP-48	5	**1**	5	**1**
Tetrahydrofuran	109-99-9	µg/L	1.1	1.1	1.1	0	1 / 39	3%	VP-49	--		--	
trans-1,2-Dichloroethylene	156-60-5	µg/L	120	120	120	0	1 / 64	2%	VP-22	100	**1**	100	**1**
Trichloroethylene	79-01-6	µg/L	4960	0.96	75000	14000	52 / 64	81%	VP-16	5	**47**	5	**47**

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-11
November 2010 Groundwater - VOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
1,1,2-Trichloroethane	79-00-5	µg/L	0.718	0.47	0.99	0.212	6 / 45	13%	ASI-03D2	5	0	5	0
1,1-Dichloroethane	75-34-3	µg/L	0.62	0.62	0.62	0	1 / 45	2%	MW-06M	--		70	0
1,1-Dichloroethylene	75-35-4	µg/L	6.3	5.9	6.7	0.462	2 / 45	4%	ASI-03D2	7	0	7	0
1,2-Dichloroethane	107-06-2	µg/L	7.05	4.6	8.9	1.78	4 / 45	9%	MW-06M	5	**3**	5	**3**
1,2-Dichloropropane	78-87-5	µg/L	1200	1200	1200	0	1 / 45	2%	ASI-16D2	5	**1**	5	**1**
Acetone	67-64-1	µg/L	46.8	3.8	420	114	17 / 45	38%	MW-04D	--		700	0
cis-1,2-Dichloroethylene	156-59-2	µg/L	181	1.1	2200	532	16 / 45	36%	ASI-03D2	70	**4**	70	**4**
Cyclohexane	110-82-7	µg/L	9.7	9.7	9.7	0	1 / 45	2%	BF-4	--		--	
Dichlorodifluoromethane	75-71-8	µg/L	1.54	0.74	2.2	0.606	4 / 45	9%	MW-10D	--		1000	0
Ethylbenzene	100-41-4	µg/L	0.595	0.58	0.61	0.0173	2 / 45	4%	MW-05D	700	0	700	0
Isopropylbenzene	98-82-8	µg/L	1	1	1	0	1 / 45	2%	BF-4	--		--	
m,p-Xylene	179601-23-1	µg/L	0.965	0.63	1.3	0.387	2 / 45	4%	MW-05D	10000	0	10000	0
Methyl Tert-Butyl Ether	1634-04-4	µg/L	2.33	0.42	7.7	3.58	4 / 45	9%	MW-02M	--		40	0
Methylene Chloride	75-09-2	µg/L	169	1.2	590	240	7 / 45	16%	MW-04D	5	**3**	5	**3**
o-Xylene	95-47-6	µg/L	0.565	0.48	0.65	0.0981	2 / 45	4%	MW-05D	10000	0	10000	0
Tetrachloroethylene	127-18-4	µg/L	10.2	0.94	28	12.1	6 / 45	13%	MW-08M	5	**2**	5	**2**
trans-1,2-Dichloroethylene	156-60-5	µg/L	3.37	0.61	9.9	4.07	4 / 45	9%	ASI-03D2	100	0	100	0
Trichloroethylene	79-01-6	µg/L	10500	0.79	77000	21300	30 / 45	67%	MW-04D	5	**27**	5	**27**
Vinyl Chloride	75-01-4	µg/L	3.7	3.7	3.7	0	1 / 45	2%	MW-06M	2	**1**	2	**1**

Notes:

EPA-RSL-GW-MCL-MAY2012 EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
--- No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-12
June 2012 Groundwater - VOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

										Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**		**Action Level**	**# Exceedances**
Acetone	67-64-1	µg/L	7.2	7.2	7.2	0	1 / 18	6%	BR-1	--			700	0
cis-1,2-Dichloroethylene	156-59-2	µg/L	82	82	82	0	1 / 18	6%	BR-1	70	**1**		70	**1**
Dichlorodifluoromethane	75-71-8	µg/L	4.13	4.1	4.2	0.0577	3 / 18	17%	MW-10D	--			1000	0
Trichloroethylene	79-01-6	µg/L	13100	39	55000	19400	13 / 18	72%	MW-04D	5	**13**		5	**13**

Notes:

EPA-RSL-GW-MCL-MAY2012 EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
--- No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-13
2014 Residential Sump Water -VOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
2-Butanone	78-93-3	µg/L	5.4	5.4	5.4	0	1 / 9	11%	SP-070312-070114	--		--	
Acetone	67-64-1	µg/L	8	8	8	0	1 / 9	11%	SP-070312-070114	--		700	0
Chloroform	67-66-3	µg/L	1.1	1.1	1.1	0	1 / 9	11%	SP-070318-070114	80	0	80	0
Tetrahydrofuran	109-99-9	µg/L	19	19	19	0	1 / 9	11%	SP-070312-070114	--		--	

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-14
2008 Groundwater - SVOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
1,1'-Biphenyl	92-52-4	µg/L	0.16	0.16	0.16	0	1 / 22	5%	BR-1	--		--	
2-Chlorophenol	95-57-8	µg/L	0.49	0.49	0.49	0	1 / 22	5%	AL-1	--		--	
2-Methylnaphthalene	91-57-6	µg/L	0.963	0.16	1.8	0.821	3 / 22	14%	BR-1	--		--	
4-Chloro-3-Methylphenol	59-50-7	µg/L	0.58	0.58	0.58	0	1 / 22	5%	AL-1	--		--	
4-Methylphenol	106-44-5	µg/L	1.3	1.3	1.3	0	1 / 22	5%	BR-1	--		--	
Acenaphthene	83-32-9	µg/L	0.345	0.26	0.43	0.12	2 / 22	9%	AL-1	--		--	
Acetophenone	98-86-2	µg/L	0.19	0.19	0.19	0	1 / 22	5%	BR-1	--		--	
Bis(2-Ethylhexyl)Phthalate	117-81-7	µg/L	0.739	0.28	4	0.857	20 / 22	91%	ASI-05D2	6	0	--	
Butylbenzylphthalate	85-68-7	µg/L	0.3	0.3	0.3	0	1 / 22	5%	MI-01	--		--	
Dibenzofuran	132-64-9	µg/L	0.18	0.18	0.18	0	1 / 22	5%	AL-1	--		--	
Diethylphthalate	84-66-2	µg/L	0.523	0.17	1.2	0.586	3 / 22	14%	MI-01	--		--	
Di-N-Butyl Phthalate	84-74-2	µg/L	0.29	0.29	0.29	0	1 / 22	5%	MI-01	--		--	
Naphthalene	91-20-3	µg/L	7.69	0.3	23	10.1	5 / 22	23%	BR-1	--		--	
N-Nitroso-Di-N-Propylamine	621-64-7	µg/L	0.33	0.33	0.33	0	1 / 22	5%	AL-1	--		--	
Phenol	108-95-2	µg/L	1.98	0.56	3.4	2.01	2 / 22	9%	BR-1	--		--	

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-15
May 2010 Groundwater - SVOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

										Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**		**Action Level**	**# Exceedances**
4-Methylphenol	106-44-5	µg/L	0.32	0.32	0.32	0	1 / 29	3%	BR-1	--			--	
Acetophenone	98-86-2	µg/L	0.429	0.21	1.2	0.243	29 / 29	100%	BR-1	--			--	
Benzaldehyde	100-52-7	µg/L	0.435	0.19	1.4	0.303	29 / 29	100%	BR-1, MI-08	--			--	
Benzo(A)Pyrene	50-32-8	µg/L	0.15	0.15	0.15	0	1 / 29	3%	AL-14	0.2	0		--	
Bis(2-Ethylhexyl)Phthalate	117-81-7	µg/L	1.33	0.27	12	2.1	29 / 29	100%	AL-2	6	**1**		--	
Butylbenzylphthalate	85-68-7	µg/L	0.25	0.21	0.29	0.0566	2 / 29	7%	AL-12	--			--	
Caprolactam	105-60-2	µg/L	0.33	0.15	0.58	0.156	15 / 29	52%	AL-2	--			--	
Di-N-Butyl Phthalate	84-74-2	µg/L	0.22	0.22	0.22	0	1 / 29	3%	BW-13S	--			--	
Phenol	108-95-2	µg/L	0.82	0.15	2.1	1.11	3 / 29	10%	BR-1	--			--	

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-16
November 2010 Groundwater - SVOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
4,6-Dinitro-2-Methylphenol	534-52-1	µg/L	2.8	2.8	2.8	0	1 / 45	2%	OE-2A	--		--	
Bis(2-Ethylhexyl)Phthalate	117-81-7	µg/L	2.5	2.5	2.5	0	1 / 45	2%	AIP-01	6	0	--	
Naphthalene	91-20-3	µg/L	1.8	1.8	1.8	0	1 / 45	2%	BF-4	--		--	
Phenol	108-95-2	µg/L	2	2	2	0	1 / 45	2%	BR-1	--		--	

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-17
2008 Groundwater - Total Metals - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
Aluminum	7429-90-5	µg/L	87.2	19.7	303	78.6	15 / 22	68%	BR-1	--		--	
Antimony	7440-36-0	µg/L	0.375	0.37	0.38	0.00707	2 / 22	9%	BR-1	6	0	--	
Arsenic	7440-38-2	µg/L	5.45	2	10.2	2.84	8 / 22	36%	ASI-04D2	10	**1**	10	**1**
Barium	7440-39-3	µg/L	279	13.1	4600	956	22 / 22	100%	BR-1	2000	**1**	200	**2**
Beryllium	7440-41-7	µg/L	0.0375	0.036	0.039	0.00212	2 / 22	9%	OE-2B	4	0	--	
Cadmium	7440-43-9	µg/L	18.5	0.16	54.3	27.7	3 / 22	14%	MI-08	5	**1**	5	**1**
Calcium	7440-70-2	µg/L	78000	3030	567000	115000	22 / 22	100%	BR-1	--		--	
Chromium	7440-47-3	µg/L	3.45	0.4	18	5.43	10 / 22	45%	MI-08	100	0	100	0
Cobalt	7440-48-4	µg/L	2.57	1	5.6	2.63	3 / 22	14%	MI-08	--		--	
Copper	7440-50-8	µg/L	5.3	4	6.6	1.5	2 / 22	9%	AL-14	1300	0	1300	0
Iron	7439-89-6	µg/L	6810	17.5	55900	12000	22 / 22	100%	BM-3D	--		--	
Lead	7439-92-1	µg/L	1.75	1.3	2.2	0.52	2 / 22	9%	MI-02	15	0	15	0
Magnesium	7439-95-4	µg/L	10600	719	27400	7920	22 / 22	100%	ASI-23D2	--		--	
Manganese	7439-96-5	µg/L	664	1.8	4420	918	22 / 22	100%	ASI-23S	--		840	**5**
Mercury	7439-97-6	µg/L	0.02	0.02	0.02	0	1 / 22	5%	MI-02	2	0	--	
Nickel	7440-02-0	µg/L	8.37	0.9	17.9	6.57	6 / 22	27%	ASI-23D2	--		100	0
Potassium	7440-09-7	µg/L	4330	212	65000	13600	22 / 22	100%	BR-1	--		--	
Selenium	7782-49-2	µg/L	4.05	2.6	5.8	0.863	8 / 22	36%	BM-3D	50	0	50	0
Silver	7440-22-4	µg/L	3.86	2.2	5.7	1.08	8 / 22	36%	BW-13S	--		--	
Sodium	7440-23-5	µg/L	82100	2190	245000	59100	22 / 22	100%	OE-2A	--		--	
Thallium	7440-28-0	µg/L	0.0506	0.021	0.17	0.0424	14 / 22	64%	MI-01	2	0	--	
Zinc	7440-66-6	µg/L	7.85	2.4	38.4	12.4	8 / 22	36%	MI-08	--		--	

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-18
2008 Groundwater - Dissolved Metals - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
Aluminum	7429-90-5	µg/L	62.5	22.2	170	51.7	12 / 22	55%	BR-1	--		--	
Antimony	7440-36-0	µg/L	0.204	0.1	0.44	0.103	22 / 22	100%	ASI-02D2	6	0	--	
Arsenic	7440-38-2	µg/L	4.92	2.1	8.2	2.26	5 / 22	23%	ASI-04D2	10	0	10	0
Barium	7440-39-3	µg/L	270	13.5	4330	899	22 / 22	100%	BR-1	2000	**1**	200	**2**
Cadmium	7440-43-9	µg/L	27.5	0.74	54.3	30.9	2 / 22	9%	MI-08	5	**1**	5	**1**
Calcium	7440-70-2	µg/L	77100	3020	539000	110000	22 / 22	100%	BR-1	--		--	
Chromium	7440-47-3	µg/L	1.84	0.47	17.4	4.24	15 / 22	68%	MI-08	100	0	100	0
Cobalt	7440-48-4	µg/L	1.78	0.56	5.7	1.8	7 / 22	32%	MI-08	--		--	
Copper	7440-50-8	µg/L	5.27	3.2	7.4	1.88	3 / 22	14%	MI-08	1300	0	1300	0
Iron	7439-89-6	µg/L	7580	9	53500	12100	19 / 22	86%	BM-3D	--		--	
Lead	7439-92-1	µg/L	1.57	1.3	1.9	0.273	3 / 22	14%	ASI-14D2	15	0	15	0
Magnesium	7439-95-4	µg/L	11200	763	28100	7930	21 / 22	95%	ASI-23D2	--		--	
Manganese	7439-96-5	µg/L	731	0.97	5970	1230	22 / 22	100%	ASI-23S	--		840	**4**
Nickel	7440-02-0	µg/L	5.4	0.93	16.5	6.22	9 / 22	41%	ASI-23D2	--		100	0
Potassium	7440-09-7	µg/L	4220	306	61000	12700	22 / 22	100%	BR-1	--		--	
Selenium	7782-49-2	µg/L	5.55	4.9	6.2	0.751	2 / 22	9%	ASI-02D2	50	0	50	0
Silver	7440-22-4	µg/L	2.79	0.58	5.6	1.56	11 / 22	50%	OE-2A	--		--	
Sodium	7440-23-5	µg/L	84500	2530	246000	61100	22 / 22	100%	OE-2A	--		--	
Vanadium	7440-62-2	µg/L	1.49	0.75	2.6	0.626	7 / 22	32%	ASI-15D2	--		--	
Zinc	7440-66-6	µg/L	8.25	2.3	40.5	13.1	8 / 22	36%	MI-08	--		--	

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-19
May 2010 Groundwater - Total Metals - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
Aluminum	7429-90-5	µg/L	302	23.2	1985	495	15 / 29	52%	BF-4	--		--	
Antimony	7440-36-0	µg/L	0.373	0.25	0.7	0.103	24 / 29	83%	AL-12	6	0	--	
Arsenic	7440-38-2	µg/L	7.48	3.4	11.7	3.02	11 / 29	38%	OE-2A	10	**3**	10	**3**
Barium	7440-39-3	µg/L	176	13	2893	522	29 / 29	100%	BR-1	2000	**1**	200	**2**
Beryllium	7440-41-7	µg/L	0.0485	0.03	0.065	0.014	6 / 29	21%	AL-15	4	0	--	
Cadmium	7440-43-9	µg/L	3.88	0.075	45.8	11.3	16 / 29	55%	AL-2	5	**2**	5	**2**
Calcium	7440-70-2	µg/L	67300	2634	359555	72300	29 / 29	100%	BR-1	--		--	
Chromium	7440-47-3	µg/L	2.1	0.28	27.1	5.71	21 / 29	72%	MI-08	100	0	100	0
Cobalt	7440-48-4	µg/L	2.15	0.8	6.1	1.59	9 / 29	31%	AL-12	--		--	
Copper	7440-50-8	µg/L	3.17	0.85	20.7	4.76	16 / 29	55%	AL-12	1300	0	1300	0
Iron	7439-89-6	µg/L	7210	12.2	49698	10500	29 / 29	100%	BM-3D	--		--	
Lead	7439-92-1	µg/L	1.91	1.2	3.5	0.661	11 / 29	38%	ASI-15D2	15	0	15	0
Magnesium	7439-95-4	µg/L	11100	706	25078	8530	29 / 29	100%	ASI-02D2	--		--	
Manganese	7439-96-5	µg/L	804	1.8	4793	981	28 / 29	97%	AL-2	--		840	**10**
Mercury	7439-97-6	µg/L	0.643	0.064	2.3	1.1	4 / 29	14%	ASI-04D2	2	**1**	--	
Nickel	7440-02-0	µg/L	3.09	0.56	15.9	3.64	16 / 29	55%	ASI-23D2	--		100	0
Potassium	7440-09-7	µg/L	2850	351	35558	6370	29 / 29	100%	BR-1	--		--	
Silver	7440-22-4	µg/L	0.41	0.41	0.41	0	1 / 29	3%	AL-2	--		--	
Sodium	7440-23-5	µg/L	92700	3882	386415	82500	29 / 29	100%	OE-2A	--		--	
Thallium	7440-28-0	µg/L	0.0807	0.018	0.29	0.0809	19 / 29	66%	AL-14	2	0	--	
Vanadium	7440-62-2	µg/L	2.45	2.2	2.7	0.354	2 / 29	7%	BF-4	--		--	
Zinc	7440-66-6	µg/L	2.8	0.31	7.5	2.08	25 / 29	86%	ASI-11D2	--		--	

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-20
November 2010 Groundwater - Total Metals - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

										Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**		**Action Level**	**# Exceedances**
Aluminum	7429-90-5	µg/L	4220	48.5	28000	6910	27 / 45	60%	MW-10D	--			--	
Antimony	7440-36-0	µg/L	0.697	0.3	1.4	0.611	3 / 45	7%	ASI-23S	6	0		--	
Arsenic	7440-38-2	µg/L	9.41	2.8	23.7	6.06	29 / 45	64%	MW-07M	10	**11**		10	**11**
Barium	7440-39-3	µg/L	145	7.5	3150	459	45 / 45	100%	BR-1	2000	**1**		200	**2**
Beryllium	7440-41-7	µg/L	0.187	0.051	0.63	0.17	12 / 45	27%	MW-10D	4	0		--	
Cadmium	7440-43-9	µg/L	29.6	13.6	45.5	18.4	2 / 45	4%	AL-2	5	**2**		5	**2**
Calcium	7440-70-2	µg/L	73000	4160	428000	69400	45 / 45	100%	BR-1	--			--	
Chromium	7440-47-3	µg/L	24.7	2.3	62.3	18.6	15 / 45	33%	MW-10D	100	0		100	0
Cobalt	7440-48-4	µg/L	11.3	2	82.2	17.8	21 / 45	47%	MW-02M	--			--	
Copper	7440-50-8	µg/L	22.9	2.5	92.8	22.7	20 / 45	44%	MW-10D	1300	0		1300	0
Iron	7439-89-6	µg/L	14000	29.6	64500	16200	44 / 45	98%	MW-10D	--			--	
Lead	7439-92-1	µg/L	12.8	5.9	25.1	7.05	5 / 45	11%	MW-10D	15	**1**		15	**1**
Magnesium	7439-95-4	µg/L	14300	358	33700	9730	45 / 45	100%	MW-04D	--			--	
Manganese	7439-96-5	µg/L	935	1.7	4320	853	45 / 45	100%	AL-2	--			840	**23**
Nickel	7440-02-0	µg/L	18.1	1	122	26.9	37 / 45	82%	MW-02M	--			100	**1**
Potassium	7440-09-7	µg/L	3690	242	36300	5300	45 / 45	100%	BR-1	--			--	
Sodium	7440-23-5	µg/L	102000	1920	398000	95000	45 / 45	100%	ASI-02D2	--			--	
Thallium	7440-28-0	µg/L	0.0854	0.02	0.19	0.0682	8 / 45	18%	MW-10D	2	0		--	
Vanadium	7440-62-2	µg/L	11.7	0.62	43.5	11.9	15 / 45	33%	MW-10D	--			--	
Zinc	7440-66-6	µg/L	18	1.4	134	28.4	38 / 45	84%	MW-10D	--			--	

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-21
June 2012 Groundwater - Total Metals - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

										Action Level Code	EPA-RSL-GW-MCL-MAY2012		VT GWPR	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
Aluminum	7429-90-5	µg/L	1,770	111	7,220	1,940	13 / 18	72%	MW-05D2	--		--	
Arsenic	7440-38-2	µg/L	9.7	0.71	27.2	8.5	18 / 18	100%	MW-06D	10	**7**	10	**7**
Barium	7440-39-3	µg/L	381	50.3	4,030	1,030	14 / 18	78%	BR-1	2,000	**1**	200	**1**
Beryllium	7440-41-7	µg/L	0.7	0.7	0.7	0	1 / 18	6%	MW-05D2	4	0	--	
Cadmium	7440-43-9	µg/L	0.635	0.46	0.81	0.202	2 / 18	11%	MW-05D2	5	0	5	0
Calcium	7440-70-2	µg/L	113,000	42,700	508,000	104,000	18 / 18	100%	BR-1	--		--	
Chromium	7440-47-3	µg/L	17	2.4	48.5	13.3	13 / 18	72%	MW-05D	100	0	100	0
Cobalt	7440-48-4	µg/L	5.57	0.34	29.5	7.19	16 / 18	89%	MW-05D2	--		--	
Copper	7440-50-8	µg/L	24.2	10.2	52.9	12.1	11 / 18	61%	MW-05D2	1,300	0	1,300	0
Iron	7439-89-6	µg/L	12,600	180	36,700	10,600	17 / 18	94%	MW-05D2	--		--	
Lead	7439-92-1	µg/L	10.2	4.6	23.6	6.26	9 / 18	50%	MW-05D2	15	**2**	15	**2**
Magnesium	7439-95-4	µg/L	17,100	8,400	27,700	5,130	17 / 18	94%	MW-04D	--		--	
Manganese	7439-96-5	µg/L	1,270	5.9	3,270	904	17 / 18	94%	MW-05D2	--		840	**11**
Mercury	7439-97-6	µg/L	0.0233	0.016	0.034	0.00604	9 / 18	50%	MW-03D	2	0	--	
Nickel	7440-02-0	µg/L	25.5	10.1	73.3	17.9	12 / 18	67%	MW-05D2	--		100	0
Potassium	7440-09-7	µg/L	3,600	1,280	26,900	5,860	18 / 18	100%	BR-1	--		--	
Sodium	7440-23-5	µg/L	87,300	19,100	349,000	93,000	18 / 18	100%	MW-11S	--		--	
Vanadium	7440-62-2	µg/L	5.65	1.4	21.6	5.77	11 / 18	61%	MW-05D2	--		--	
Zinc	7440-66-6	µg/L	107	18.4	289	98.6	10 / 18	56%	MW-10D	--		--	

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Maximum Contaminant Levels; May 2012.
VT GWPR - Vermont Groundwater Protection Rule Standard
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-22
September 2012 Surface Water - VOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

										Action Level Code	NRWQ-HHWO		VT-SW-WQC-HHWO	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
cis-1,2-Dichloroethylene	156-59-2	µg/L	22.5	3.8	39	18.6	4 / 6	67%	PW11	--		--	
Trichloroethylene	79-01-6	µg/L	9.65	2.6	15	6.33	4 / 6	67%	PW11	2.5	4	2.7	**3**
Vinyl Chloride	75-01-4	µg/L	3.3	3.2	3.4	0.141	2 / 6	33%	PW11	0.025	2	2	**2**

Notes:

NRWQ-HHWO - National Recommended Water Quality Criteria, Human Health
VT-SW-WQC-HHWO - Vermont Surface Water Water Quality -Protection of Human Health, Consumption of Water and Organisms
µg/L - Micrograms per liter
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-23
September 2012 Sediment - SVOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA FW-SED		VT SQC-TECS-2012		VT SQC-PECS-2012	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
4-Nitrophenol	100-02-7	µg/kg	460	460	460	0	1 / 6	17%	PW20	--		--		--	
Aramite	140-57-8	µg/kg	210	210	210	0	1 / 6	17%	PW20	--		--		--	
Benzo(A)Anthracene	56-55-3	µg/kg	270	270	270	0	1 / 6	17%	PW20	108	1	110	**1**	1,100	0
Benzo(A)Pyrene	50-32-8	µg/kg	240	240	240	0	1 / 6	17%	PW20	150	1	150	**1**	1,500	0
Benzo(B)Fluoranthene	205-99-2	µg/kg	570	570	570	0	1 / 6	17%	PW20	27.2	1	--		--	
Benzo(G,H,I)Perylene	191-24-2	µg/kg	610	610	610	0	1 / 6	17%	PW20	170	1	--		--	
Benzo(K)Fluoranthene	207-08-9	µg/kg	540	540	540	0	1 / 6	17%	PW20	27.2	1	--		--	
Bis(2-Ethylhexyl)Phthalate	117-81-7	µg/kg	250	250	250	0	1 / 6	17%	PW20	180	1	--		--	
Butylbenzylphthalate	85-68-7	µg/kg	300	300	300	0	1 / 6	17%	PW20	10,900		--		--	
Chlorobenzilate	510-15-6	µg/kg	240	240	240	0	1 / 6	17%	PW20	1450		--		--	
Chrysene	218-01-9	µg/kg	680	680	680	0	1 / 6	17%	PW20	166	1	170	**1**	1,300	0
Dibenz(A,H)Anthracene	53-70-3	µg/kg	510	510	510	0	1 / 6	17%	PW20	33	1	33	**1**	--	
Di-N-Octyl Phthalate	117-84-0	µg/kg	260	260	260	0	1 / 6	17%	PW20	--		--		--	
Fluoranthene	206-44-0	µg/kg	480	480	480	0	1 / 6	17%	UPSTREAM	423	1	420	**1**	2,200	0
Indeno(1,2,3-Cd)Pyrene	193-39-5	µg/kg	500	500	500	0	1 / 6	17%	PW20	17	1	--		--	
Pentachlorophenol	87-86-5	µg/kg	860	860	860	0	1 / 6	17%	PW20	504	1	--		--	
Phenacetin	62-44-2	µg/kg	320	320	320	0	1 / 6	17%	PW20	--		--		--	
Pyrene	129-00-0	µg/kg	380	380	380	0	1 / 6	17%	UPSTREAM	195	1	200	**1**	1,500	0

Notes:

EPA FW-SED - EPA Risk-based Freshwater Sediment Screening Benchmarks
VT SQC-TECS - Vermont Sediment Quality Guidelines for the Protection of Aquatic Biota in Freshwater Ecosystems, Threshold effects concentrations; April 2012.
VT SQC-PECS - Vermont Sediment Quality Guidelines for the Protection of Aquatic Biota in Freshwater Ecosystems, Probable Effects Concentrations; April 2012.
µg/kg - Micrograms per kilogram
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-24
September 2012 Sediment - Metals - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

									Action Level Code	EPA FW-SED		VT SQC-TECS-2012		VT SQC-PECS-2012	
Parameter	**CAS #**	**Units**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Freq. Detect**	**% Detect**	**Loc. of Max. Conc.**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**	**Action Level**	**# Exceedances**
Aluminum	7429-90-5	mg/Kg	4,700	3,300	7,400	1,580	6 / 6	100%	UPSTREAM	--		--		--	
Arsenic	7440-38-2	mg/Kg	3.43	2.1	4.5	1.09	3 / 6	50%	PW17	9.8		9.8	0	33	0
Barium	7440-39-3	mg/Kg	25.3	12	50	15.6	6 / 6	100%	UPSTREAM	--		--		--	
Calcium	7440-70-2	mg/Kg	1,470	1,100	2,300	468	6 / 6	100%	UPSTREAM	--		--		--	
Chromium	7440-47-3	mg/Kg	10.1	7.4	15	2.56	6 / 6	100%	UPSTREAM	43.4		43	0	110	0
Cobalt	7440-48-4	mg/Kg	3.4	2.4	5.6	1.23	6 / 6	100%	UPSTREAM	50		--		--	
Copper	7440-50-8	mg/Kg	14.6	5.6	44	14.1	6 / 6	100%	PW2	31.6	1	32	**1**	150	0
Iron	7439-89-6	mg/Kg	9,420	6,600	14,000	2,940	6 / 6	100%	UPSTREAM	20,000		--		--	
Lead	7439-92-1	mg/Kg	7.38	3.5	12	3.71	4 / 6	67%	UPSTREAM	35.8		36	0	130	0
Magnesium	7439-95-4	mg/Kg	2,170	1,500	2,800	441	6 / 6	100%	UPSTREAM	--		--		--	
Manganese	7439-96-5	mg/Kg	201	80	670	232	6 / 6	100%	UPSTREAM	460	1	--		--	
Mercury	7439-97-6	µg/g	0.032	0.03	0.034	0.00231	2 / 6	33%	UPSTREAM	0.18		0.18	0	1.1	0
Nickel	7440-02-0	mg/Kg	11.4	7.8	15	2.33	6 / 6	100%	UPSTREAM	22.7		23	0	49	0
Vanadium	7440-62-2	mg/Kg	8.78	6.4	15	3.26	6 / 6	100%	UPSTREAM	--		--		--	
Zinc	7440-66-6	mg/Kg	72.8	28	240	78.6	6 / 6	100%	UPSTREAM	121	**1**	120	**1**	460	0

Notes:

EPA FW-SED - EPA Risk-based Freshwater Sediment Screening Benchmarks
VT SQC-TECS - Vermont Sediment Quality Guidelines for the Protection of Aquatic Biota in Freshwater Ecosystems, Threshold effects concentrations; April 2012.
VT SQC-PECS - Vermont Sediment Quality Guidelines for the Protection of Aquatic Biota in Freshwater Ecosystems, Probable Effects Concentrations; April 2012.
mg/kg - Milligrams per kilogram
µg/g - Micrograms per gram
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

Table 4-25
2014 Residential Air - VOCs - Statistical Summary
Commerce Street Plume Superfund Site
Williston, Vermont

										Action Level Code	
Parameter	**CAS #**	**Units**	**Freq. Detect**	**Mean**	**Min.**	**Max.**	**Std. Dev.**	**Loc. Of Max. Conc.**	**Max. Sample ID**	**Action Level**	**# Exceedances**
1,2-Dichloroethane	107-06-2	ppbv	2 / 4	0.43	0.41	0.45	0.028	797 S BROWNELL RD	6554		
1,3,5-Trimethylbenzene	108-67-8	ppbv	1 / 4	0.14	0.14	0.14		797 S BROWNELL RD	6554		
2-Butanone	78-93-3	ppbv	4 / 4	0.50	0.19	0.86	0.275	797 S BROWNELL RD	6554		
4-Ethyltoluene	622-96-8	ppbv	1 / 4	0.32	0.32	0.32		797 S BROWNELL RD	6554		
4-Methyl-2-pentanone	108-10-1	ppbv	1 / 4	0.20	0.20	0.20		797 S BROWNELL RD	6554		
Benzene	71-43-2	ppbv	1 / 4	0.86	0.86	0.86		797 S BROWNELL RD	6554		
Chloroform	67-66-3	ppbv	2 / 4	0.19	0.14	0.23	0.064	833 S BROWNELL RD	3092		
Chloromethane	74-87-3	ppbv	4 / 4	0.36	0.19	--	0.139	--	6554, 6582		
Cyclohexane	110-82-7	ppbv	1 / 4	0.12	0.12	0.12		797 S BROWNELL RD	6554		
Dichlorodifluoromethane	75-71-8	ppbv	4 / 4	0.40	0.38	0.42	0.018	797 S BROWNELL RD	6554		
Ethylbenzene	100-41-4	ppbv	1 / 4	0.41	0.41	0.41		797 S BROWNELL RD	6554		
Hexane	110-54-3	ppbv	2 / 4	0.33	0.12	0.53	0.290	797 S BROWNELL RD	6554		
Methylene chloride	75-09-2	ppbv	1 / 4	0.11	0.11	0.11		797 S BROWNELL RD	6554		
o-Xylene	95-47-6	ppbv	1 / 4	0.57	0.57	0.57		797 S BROWNELL RD	6554		
Styrene	100-42-5	ppbv	1 / 4	0.13	0.13	0.13		797 S BROWNELL RD	6554		
Tetrahydrofuran	109-99-9	ppbv	2 / 4	0.29	0.23	0.35	0.085	833 S BROWNELL RD	3092		
Toluene	108-88-3	ppbv	3 / 4	0.74	0.10	1.70	0.847	797 S BROWNELL RD	6554		
Trichlorofluoromethane	75-69-4	ppbv	4 / 4	0.50	0.21	1.30	0.534	981 S BROWNELL RD	6583		
Xylene (total)	1330-20-7	ppbv	1 / 4	1.50	1.50	1.50		797 S BROWNELL RD	6554		

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.
EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.
VT-RISK-BASED - Vermont Department of Health risk-based residential soil screening values
ppbv - parts per billion by volume
-- - No standard value is available
VALUE Indicates exceedance of a screening value.

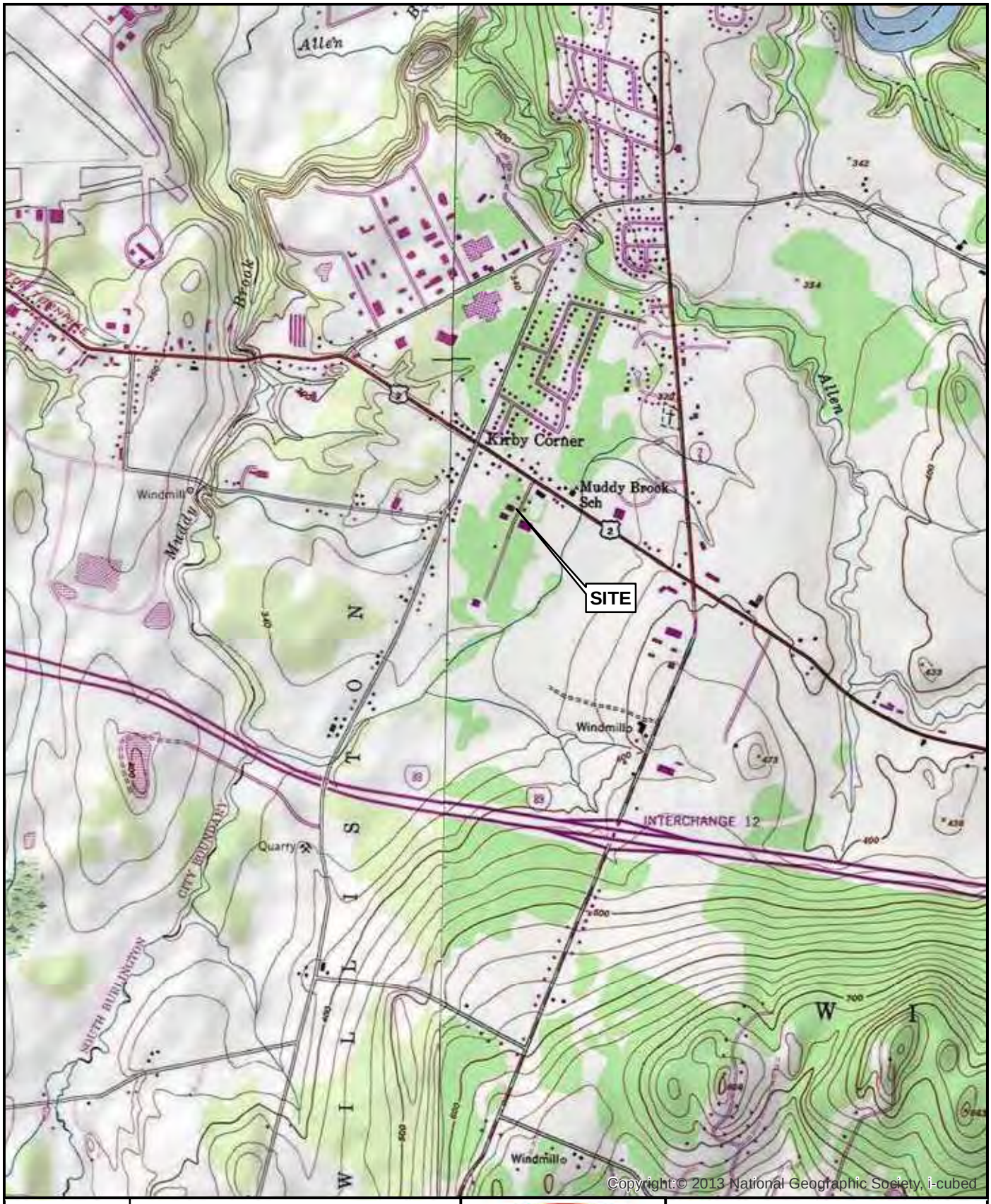
Table 6-1
Summary of Cancer Risks and Noncancer Hazard Indices
Commerce Street Plume Superfund Site
Williston, Vermont

Media	Exposure Area	Scenario Timeframe	Receptor	RME								CTE		
				CR>1E-04 or HI>1	Total CR[a]	Major Contributors to Total CR (Individual CR >1E-06)	Individual COPC CR	Total NC HI	Organ-Specific HI Above 1.0	Major Contributors to Total HI (Individual HQ > 1.0)	Individual COPC HQ	CR>1E-04 or HI>1	Total CR	Total NC HI
Sediment	Sediment unnamed stream	Current	Adult River Recreational Visitor	No	5.6E-07	---	---	0.0043	---	---	---	---	---	---
			Child River Recreational Visitor	No	5.1E-06	Dibenz(a,h)anthracene	1.4E-06	0.041	---	---	---	---	---	---
						Chromium	2.0E-06							
Surface Water	Surface Water Unnamed Stream	Current	Adult River Recreational Visitor	No	8.5E-07	---	---	0.0075	---	---	---	---	---	---
			Child River Recreational Visitor	No	8.6E-06	Vinyl chloride	8.5E-06	0.018	---	---	---	---	---	---
Groundwater	Shallow Groundater in Construction Trenches	Current	Construction Worker	Yes	2.0E-06	---	---	3.0	Immune System	Trichloroethylene	2.1	No	4.1E-07	0.59
	Site	Future	Age-Adjusted Resident	Yes	9.2E-02	1,2-Dichloroethane	6.5E-06	NE	---	---		Yes	3.6E-02	NE
						Methylene chloride	9.2E-04							
						Trichloroethylene	8.9E-02							
						Vinyl Chloride	1.9E-04							
						Arsenic	1.8E-04							
						Chromium	1.1E-03							
			Adult Resident	Yes	NE	---		2778	Liver	Methylene chloride	3.5	Yes	---	2478
										Vinyl Chloride	0.057			
									Kidney	cis-1,2-Dichloroethylene	4.9			
										1,2-Dichloroethylene	0.075			
									Immune System	Trichloroethylene	2765			
									Thyroid	Cobalt	0.96			
			Child Resident	Yes	NE	---		3181	Liver	Methylene chloride	5.5	Yes	---	2687
										Vinyl Chloride	0.082			
									Kidney	cis-1,2-Dichloroethylene	8.1			
										1,2-Dichloroethane	0.079			
									Immune System	Trichloroethylene	3159			
									Skin	Arsenic	1.5			
									Thyroid	Cobalt	1.6			
									Gastrointestinal	Iron	1.3			

Notes:
[a] Note that for conservatism, total chromium results are based on hexavalent chromium toxicity criteria.

COPC	Contaminant of Potential Concern
CR	Cancer Risk
CTE	Central Tendency Exposure
HI	Hazard Index
HQ	Hazard Quotient
NC	Noncancer
NE	Not Evaluated
RME	Reasonable Maximum Exposure
	Total Cancer Risks are above 1E-04 or Hazard Indices above 1.
	Total Cancer Risks fall in the range of 1E-04 to 1E-06.

FIGURES



Map Location

USGS Topographic Map
Essex Junction, Vermont
Burlington, Vermont
Revised 1987

0 1,000 2,000 4,000
Feet
1 inch = 2,000 feet

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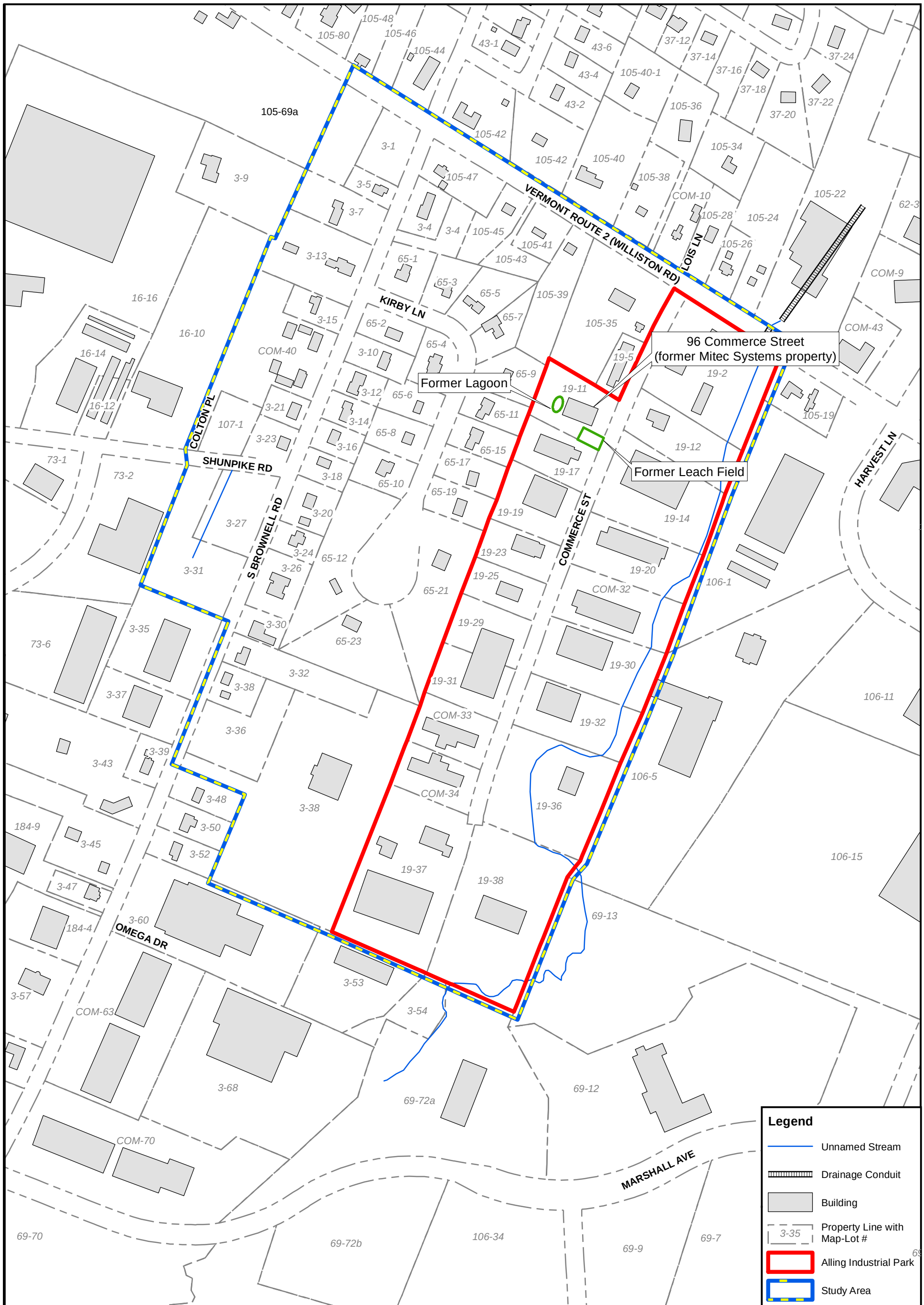
FIGURE 1-1

LOCUS MAP
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: L:\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\R1\Figure 1-1 Locus Plan.mxd Date Printed: 7/21/2015



Notes:

1. Site features are depicted for display purposes only.

0 150 300 600
Feet
1 inch = 300 feet

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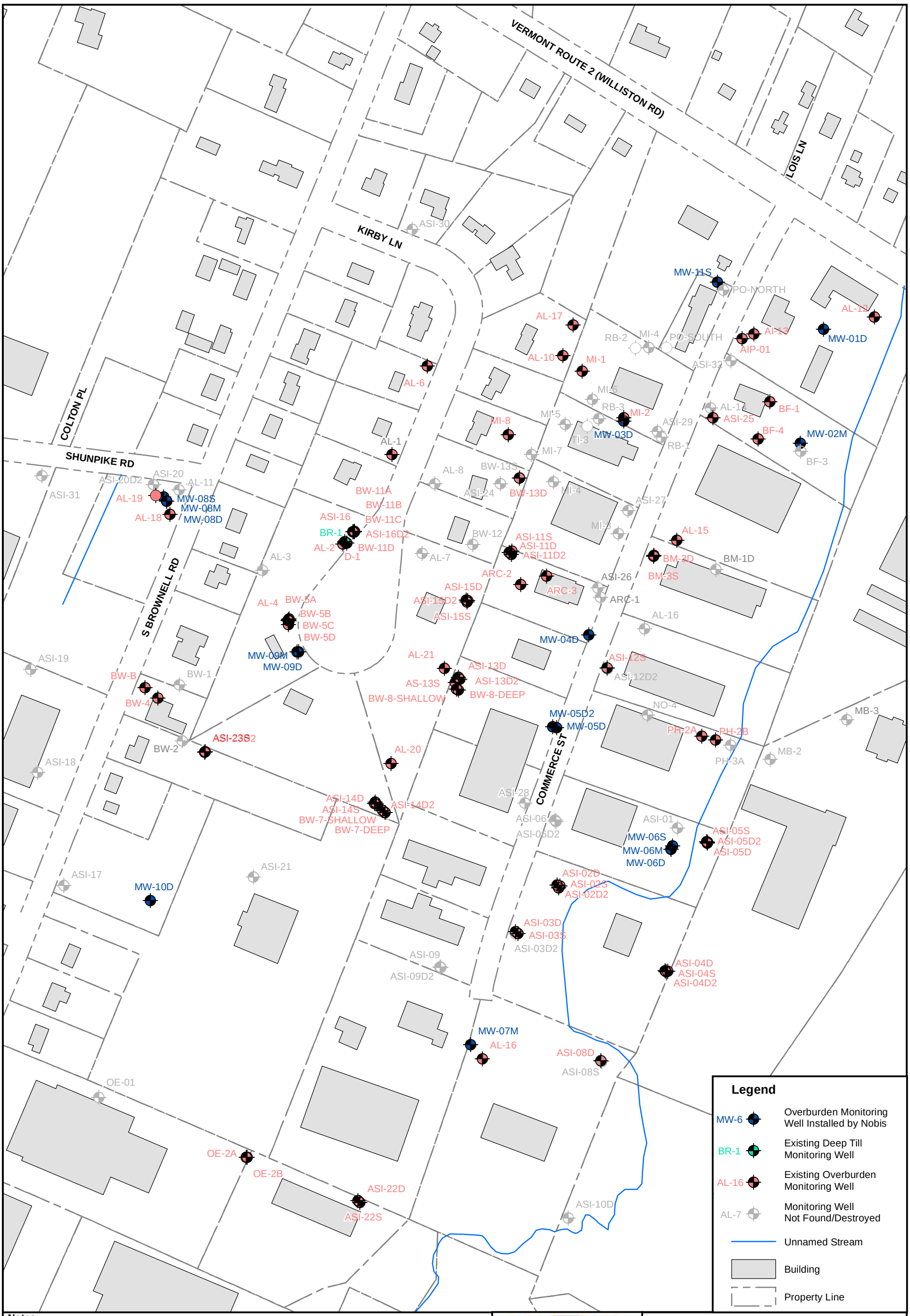
FIGURE 1-2

STUDY AREA
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: DG	CHECKED BY: SH
PROJECT NO. 80036	DATE: JULY 2015

Path: K:\Technical Data (TD)\GIS\Maps\RI\Figure 1-2 Study Area.mxd Date Printed: 7/29/2015



Notes:

1. Locations wells installed by Nobis or observed during the well inventory were surveyed by American Consulting Engineers and Surveyors of Williamstown, Vermont 2008 and 2011. Locations for wells not found or presumed destroyed reference previous reports and site plans.

0 100 200 400
Feet
1 inch = 200 feet

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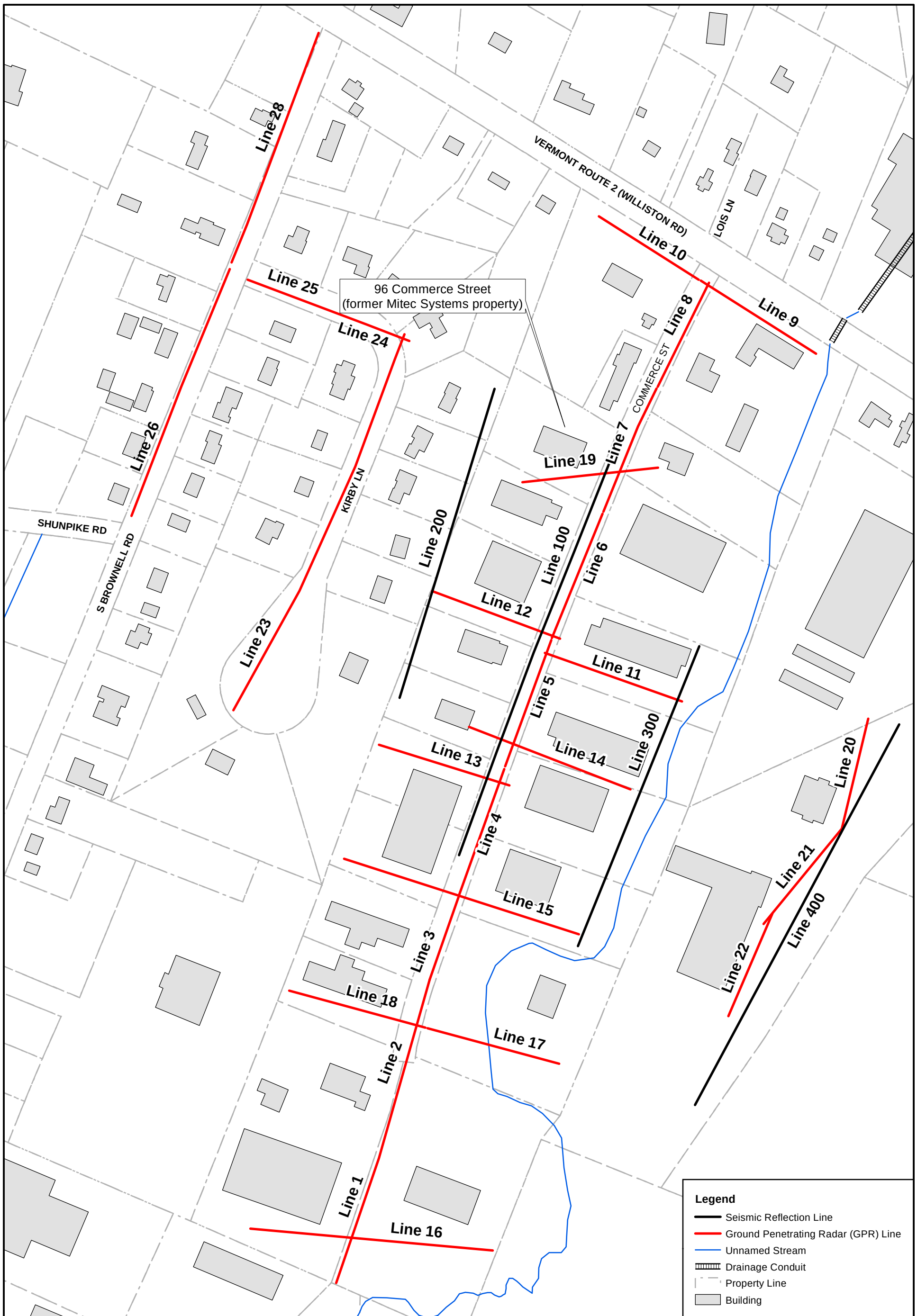
FIGURE 2-1

MONITORING WELL LOCATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: K:\Technical Data (TD)\GIS\Maps\RI\Figure 2-1 Monitoring Well Locations.mxd Date Printed: 7/27/2015



Notes:

1. This plan is based on "Plate 1, Stratigraphic Investigation GPR & Seismic Traverses" by Hager GeoScience, August 2010.

2. Location of all features is approximate. Map is for reference purposes only. Nobis Engineering, Inc. makes no claims, warranties, representations, expressed or implied, relating to the completeness, accuracy, or reliability of the data shown.

0 100 200 400
Feet
1 inch = 200 feet

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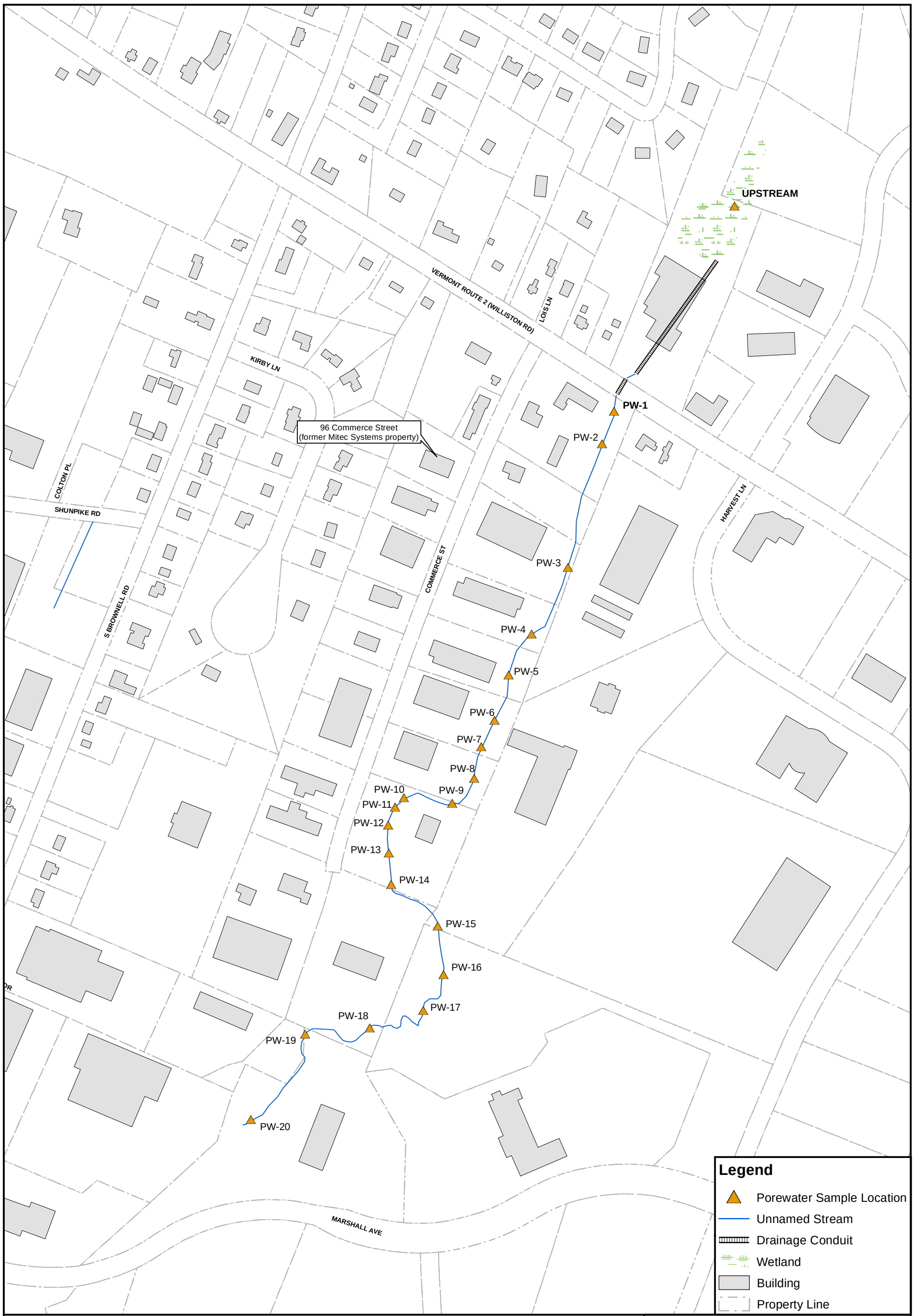
FIGURE 2-2

GEOPHYSICAL SURVEY GROUND PENETRATING RADAR & SEISMIC REFLECTION LINES
COMMERCE STREET PLUME SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

<bob>Path:<bob>:\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\RI\Figure 2-2 Geophysical Survey GPR & Seismic Refraction Lines.mxd <bob>Date Printed:<bob> 7/22/2015



Notes:

1. Location of all features is approximate. Map is for reference purposes only. Nobis Engineering, Inc. makes no claims, warranties, representations, expressed or implied, relating to the completeness, accuracy, or reliability of the data shown.
2. Porewater samples collected by Nobis Engineering, Inc. Passive diffusion bag samplers were deployed on July 7 and July 8, 2010 and retrieved on July 22, 2010.

0 150 300 600
Feet
1 inch = 300 feet

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FIGURE 2-3

POREWATER SAMPLING LOCATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: SH
PROJECT NO. 80036	DATE: JULY 2015

Path: K:\Technical Data (TD)\GIS\Maps\RI\Figure 2-3 Porewater Sampling Locations.mxd Date Printed: 7/27/2015

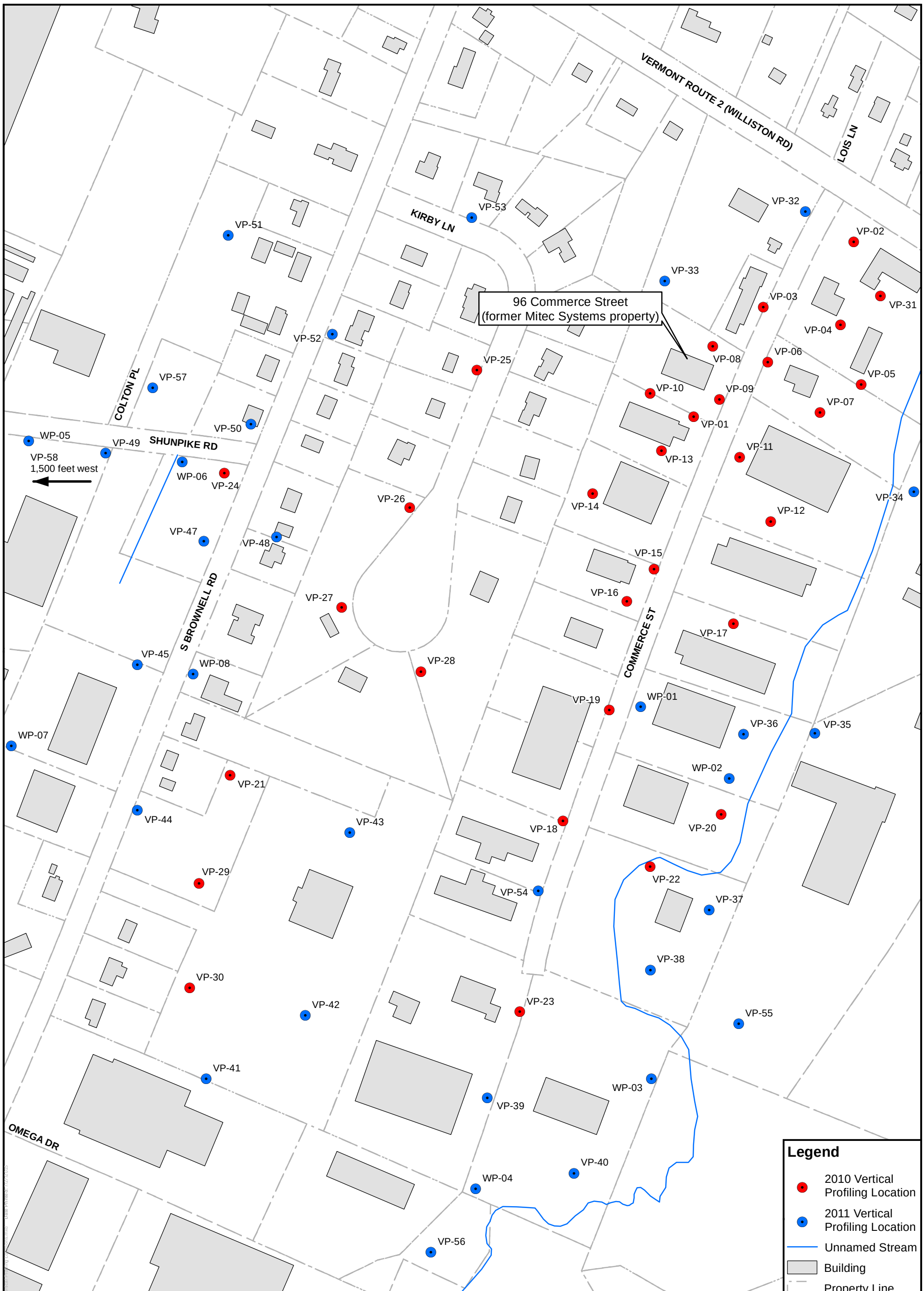

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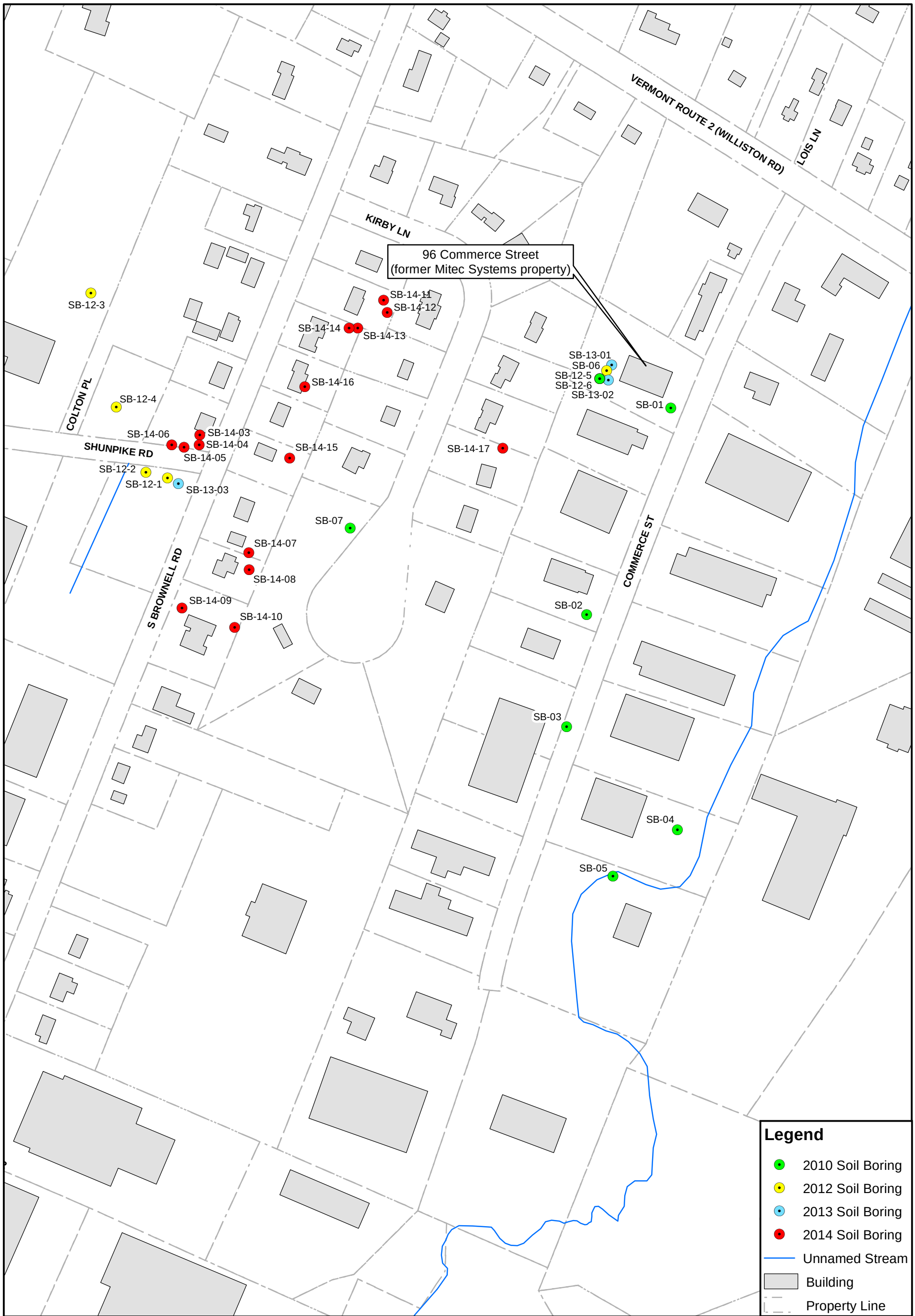
FIGURE 2-4

VERTICAL PROFILING LOCATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: SH
PROJECT NO. 80036	DATE: JULY 2015



Notes:

1. Site features are depicted for display purposes only.

2. Soil borings were advanced by various drilling contractors and overseen by Nobis Engineering, Inc. during the years indicated in the legend.

0 50 100 200 300
Feet
1 inch = 200 feet

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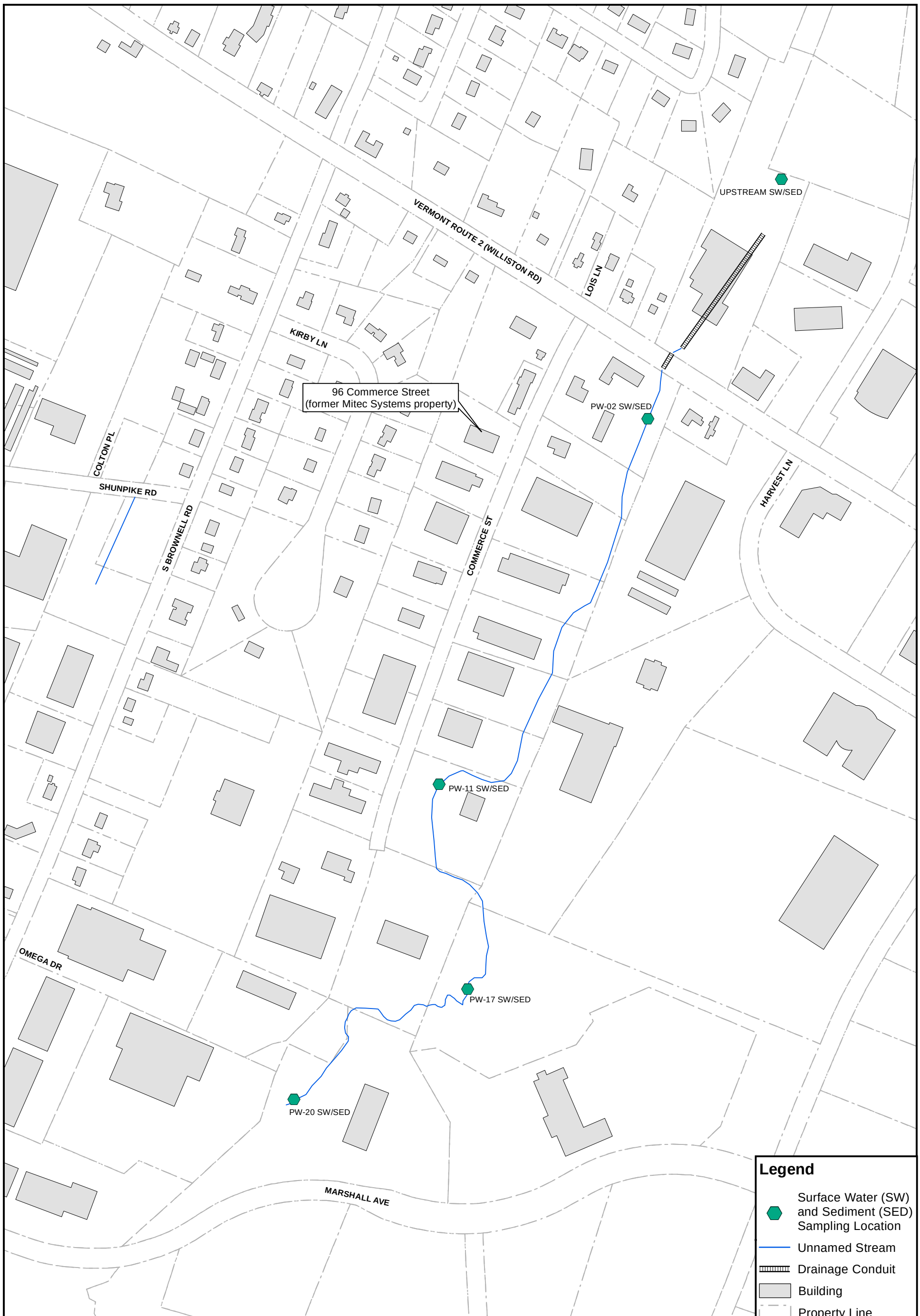
FIGURE 2-5

SOIL BORING LOCATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: SH
PROJECT NO. 80036	DATE: JULY 2015

Path: K:\Technical Data (TD)\GIS\Maps\R\Figure 2-5 Soil Boring Locations.mxd Date Printed: 7/27/2015



Notes:

1. Surface water and sediment samples were collected colocated with the pore water samples locations displayed on Figure 2-3.

2. Surface water and sediment samples collected by Nobis Engineering, Inc. between September 11, 2012 and September 14, 2012.

0 150 300 600
Feet
1 inch = 300 feet

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FIGURE 2-6

SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: SH
PROJECT NO. 80036	DATE: JULY 2015

Path: L:\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\RI\Figure 2-6 Surface Water and Sediment Sampling Locations.mxd Date Printed: 7/22/2015

Notes:

1. Location of all features is approximate. Map is for reference purposes only. Nobis Engineering, Inc. makes no claims, warranties, representations, expressed or implied, relating to the completeness, accuracy, or reliability of the data shown.

2. Sump water and surficial soil samples collected by Nobis Engineering, Inc. on June 30, 2014 and July 1, 2014.

0 100 200 400
Feet
1 inch = 200 feet

N

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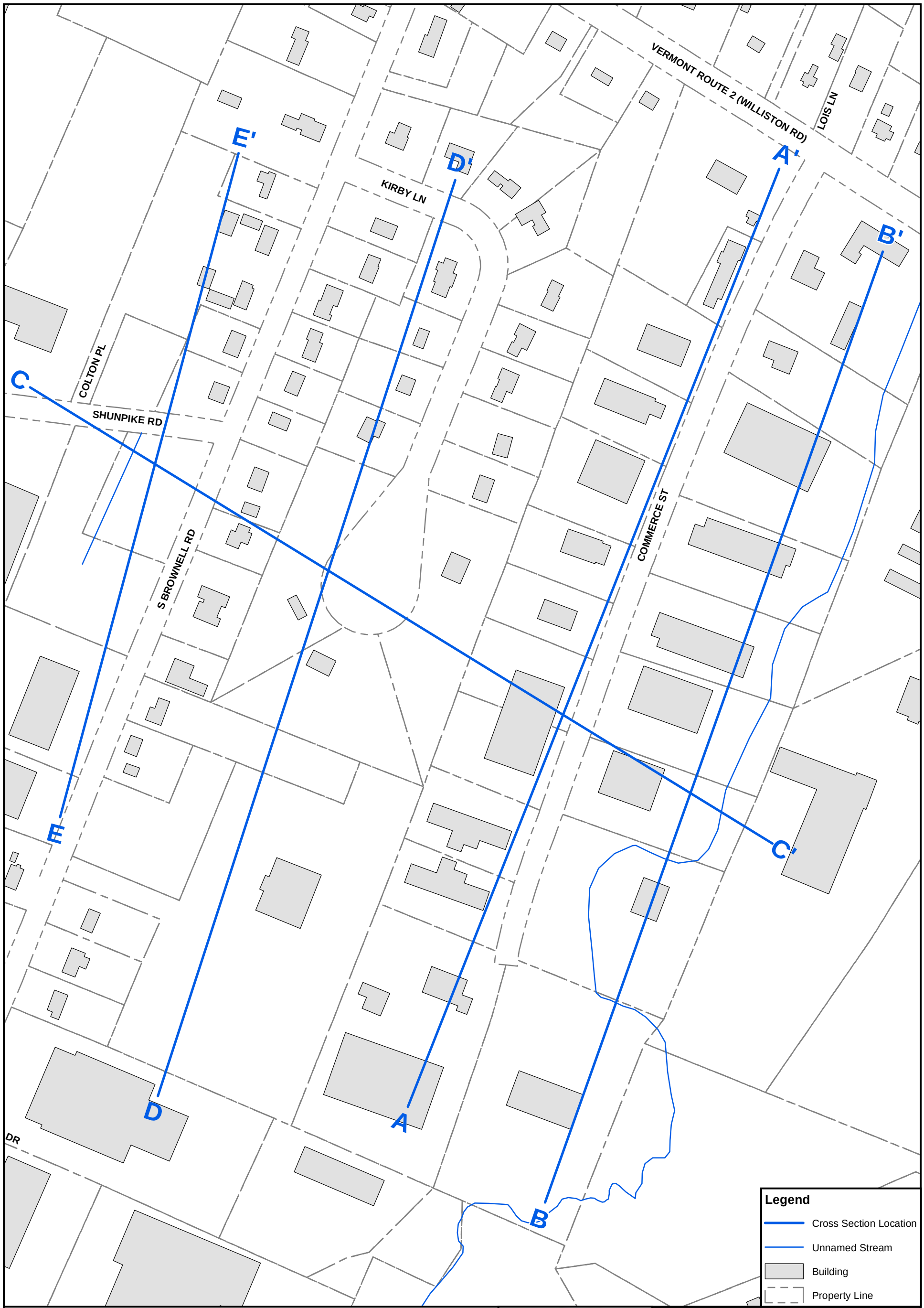
FIGURE 2-7

RESIDENTIAL SOIL AND SUMP INVESTIGATION LOCATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: NZ	CHECKED BY: SH
PROJECT NO. 80036	DATE: JULY 2015



0 100 200 400
Feet
1 inch = 200 feet

N

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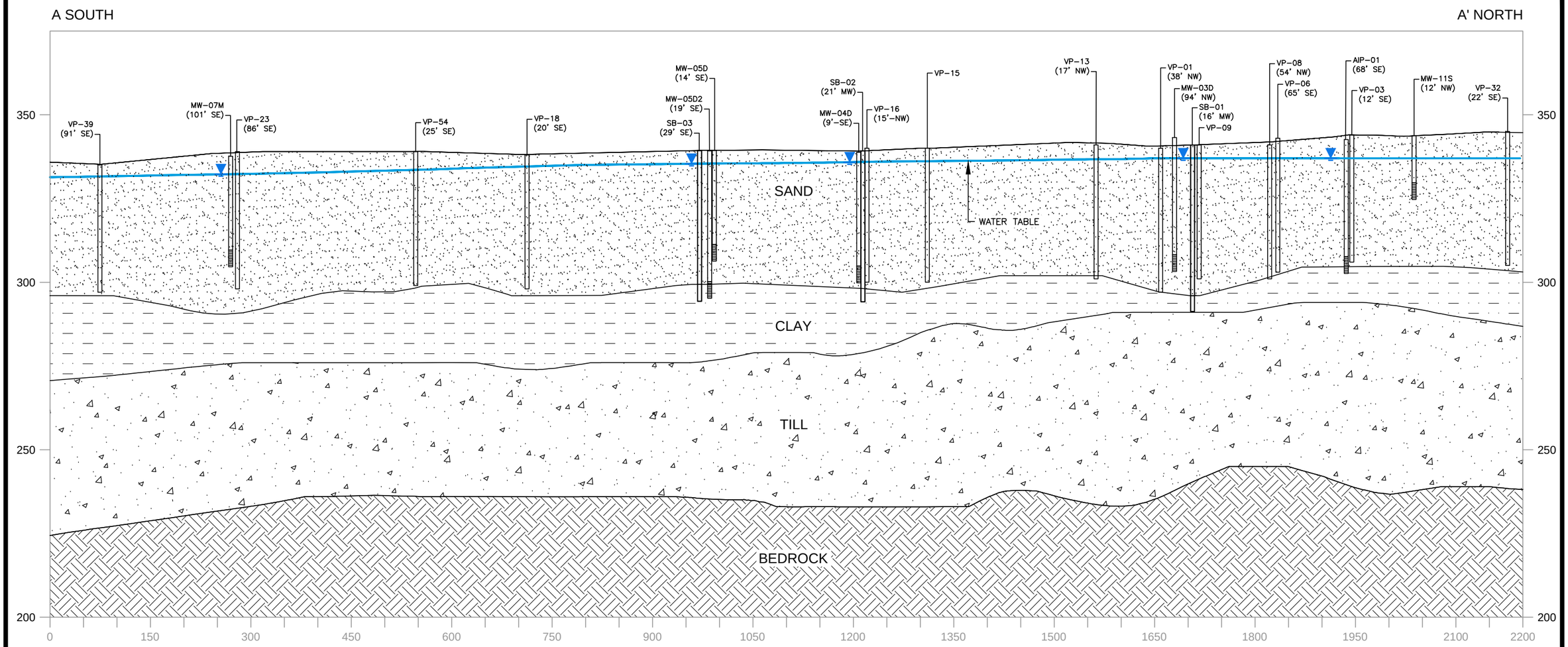
FIGURE 3-1

CROSS-SECTION LOCATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: L:\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\RI\Figure 3-1 Cross-Section Locations.mxd Date Printed: 7/21/2015



HORIZONTAL

150 0 150 300

30 0 30 60

VERTICAL

SCALE IN FEET

MONITORING WELL

WELL I.D.
(BASELINE OFFSET DISTANCE & DIRECTION)

GROUNDWATER ELEVATION
(OCTOBER 2011)

PVC RISER OR STEEL RISER

SCREEN

VERTICAL PROFILE

PROFILE I.D.
(BASELINE OFFSET DISTANCE & DIRECTION)

LEGEND

SAND

CLAY

TILL

BEDROCK

NOTES

1. STRATA SURFACES ARE MAPPED BASED ON THE 2010 GEOPHYSICAL MAPPING HAGER GEOSCIENCE, INC. (HGI), AND OBSERVATIONS MADE DURING SOIL BORINGS AND VERTICAL PROFILING.

2. THE VERTICAL SCALE OF THE CROSS-SECTION HAS BEEN EXAGGERATED FOR ILLUSTRATIVE PURPOSES AND SHOWS THE APPROXIMATE MSL (MEAN SEA LEVEL) ELEVATION.

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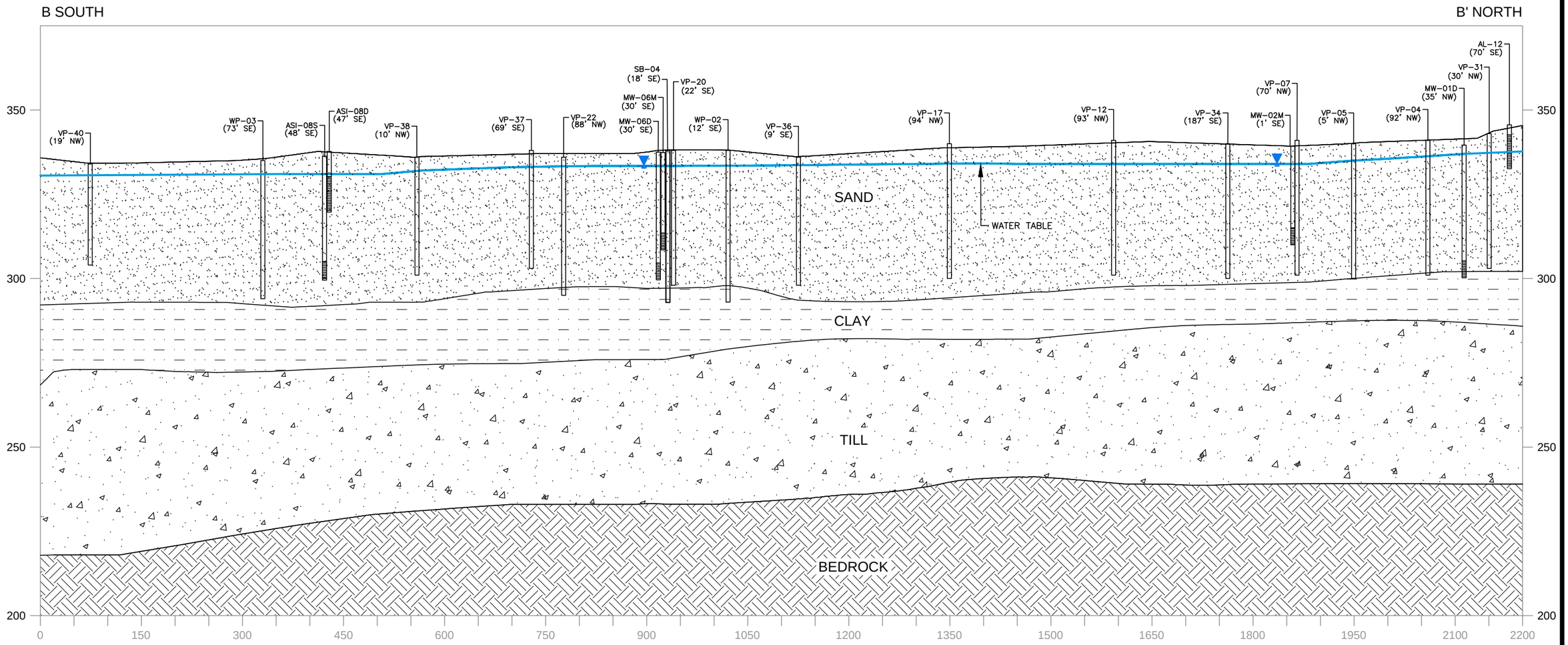
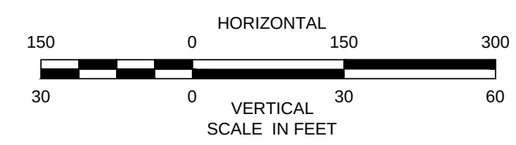
FIGURE 3-2

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

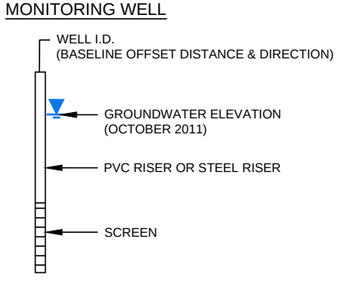
DRAWN BY:	ML/AKP	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

K:\Technical Data (TD)\CAD\dwg\80036-CROSS-SECTIONS.dwg

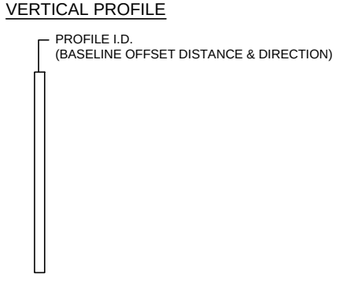




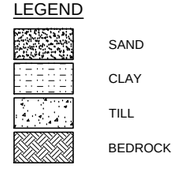
MONITORING WELL



VERTICAL PROFILE



LEGEND



NOTES

1. STRATA SURFACES ARE MAPPED BASED ON THE 2010 GEOPHYSICAL MAPPING HAGER GEOSCIENCE, INC. (HGI), AND OBSERVATIONS MADE DURING SOIL BORINGS AND VERTICAL PROFILING.

2. THE VERTICAL SCALE OF THE CROSS-SECTION HAS BEEN EXAGGERATED FOR ILLUSTRATIVE PURPOSES AND SHOWS THE APPROXIMATE MSL (MEAN SEA LEVEL) ELEVATION.

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FIGURE 3-3

B-B' CROSS-SECTION
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

DRAWN BY:	ML/AKP	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

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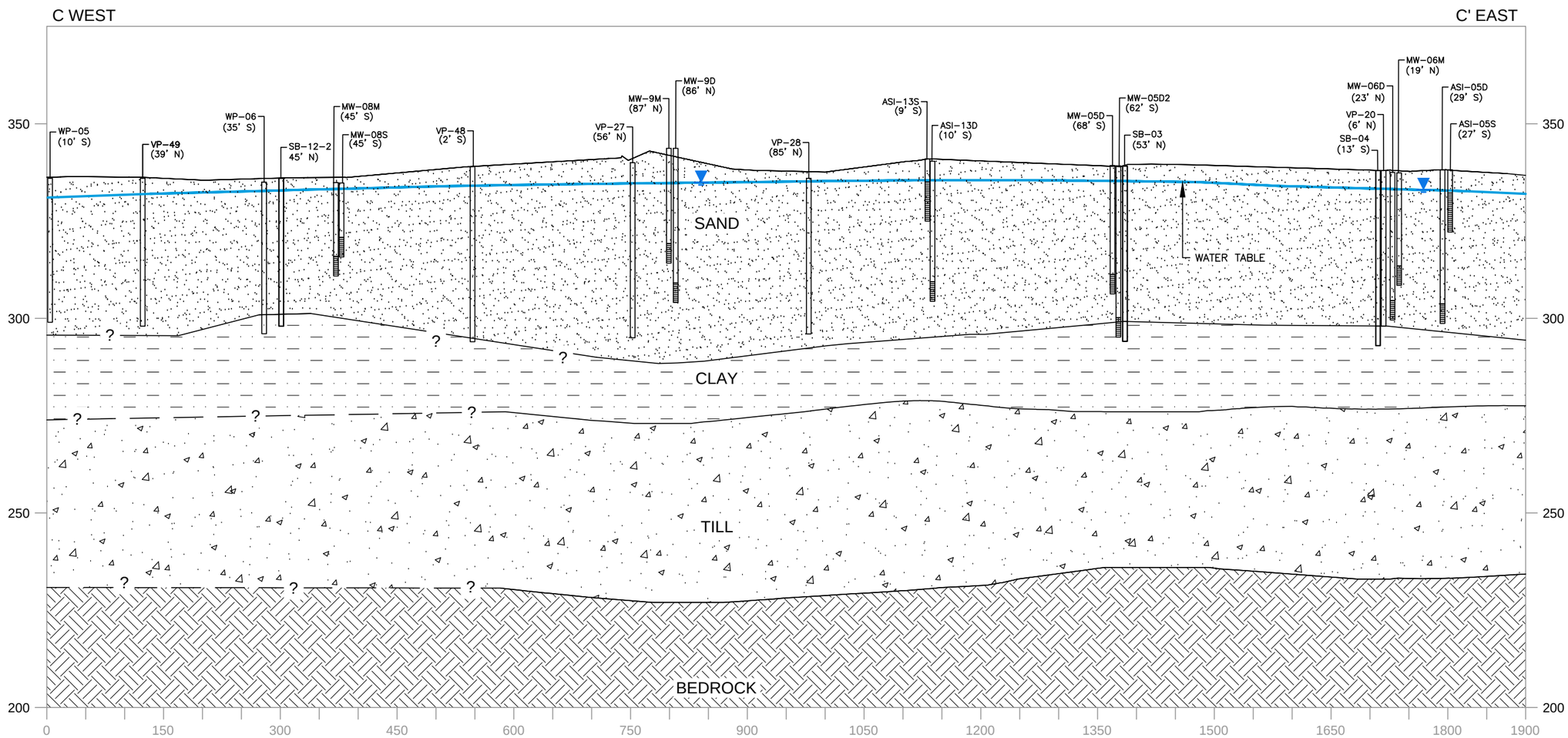

HORIZONTAL
150 0 150 300
30 0 30 60
VERTICAL
SCALE IN FEET

MONITORING WELL

- WELL I.D. (BASELINE OFFSET DISTANCE & DIRECTION)
- GROUNDWATER ELEVATION (OCTOBER 2011)
- PVC RISER OR STEEL RISER
- SCREEN

VERTICAL PROFILE

- PROFILE I.D. (BASELINE OFFSET DISTANCE & DIRECTION)

LEGEND

- SAND
- CLAY
- TILL
- BEDROCK
- ? STRATA LOCATION UNKNOWN; BOUNDARY HAS BEEN INTERPRETED

NOTES

1. STRATA SURFACES ARE MAPPED BASED ON THE 2010 GEOPHYSICAL MAPPING HAGER GEOSCIENCE, INC. (HGI), AND OBSERVATIONS MADE DURING SOIL BORINGS AND VERTICAL PROFILING.
2. THE VERTICAL SCALE OF THE CROSS-SECTION HAS BEEN EXAGGERATED FOR ILLUSTRATIVE PURPOSES AND SHOWS THE APPROXIMATE MSL (MEAN SEA LEVEL) ELEVATION.

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FIGURE 3-4

C-C' CROSS-SECTION
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

DRAWN BY:	ML/AKP	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

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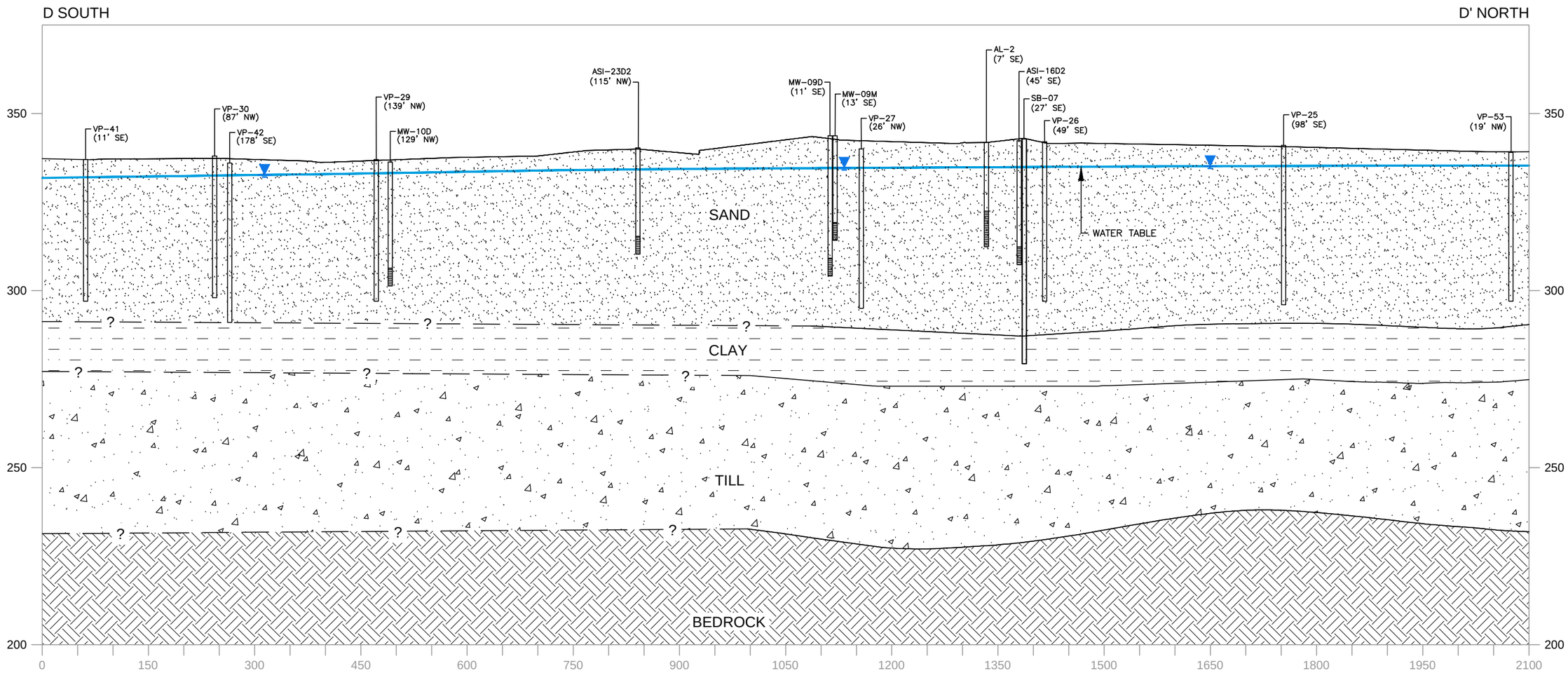

HORIZONTAL
150 0 150 300
30 0 30 60
VERTICAL
SCALE IN FEET

MONITORING WELL

WELL I.D.
(BASELINE OFFSET DISTANCE & DIRECTION)

GROUNDWATER ELEVATION
(OCTOBER 2011)

PVC RISER OR STEEL RISER

SCREEN

VERTICAL PROFILE

PROFILE I.D.
(BASELINE OFFSET DISTANCE & DIRECTION)

LEGEND

SAND

CLAY

TILL

BEDROCK

? STRATA LOCATION UNKNOWN; BOUNDARY HAS BEEN INTERPRETED

NOTES

1. STRATA SURFACES ARE MAPPED BASED ON THE 2010 GEOPHYSICAL MAPPING HAGER GEOSCIENCE, INC. (HGI), AND OBSERVATIONS MADE DURING SOIL BORINGS AND VERTICAL PROFILING.

2. THE VERTICAL SCALE OF THE CROSS-SECTION HAS BEEN EXAGGERATED FOR ILLUSTRATIVE PURPOSES AND SHOWS THE APPROXIMATE MSL (MEAN SEA LEVEL) ELEVATION.

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FIGURE 3-5

D-D' CROSS-SECTION
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

DRAWN BY:	ML/AKP	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

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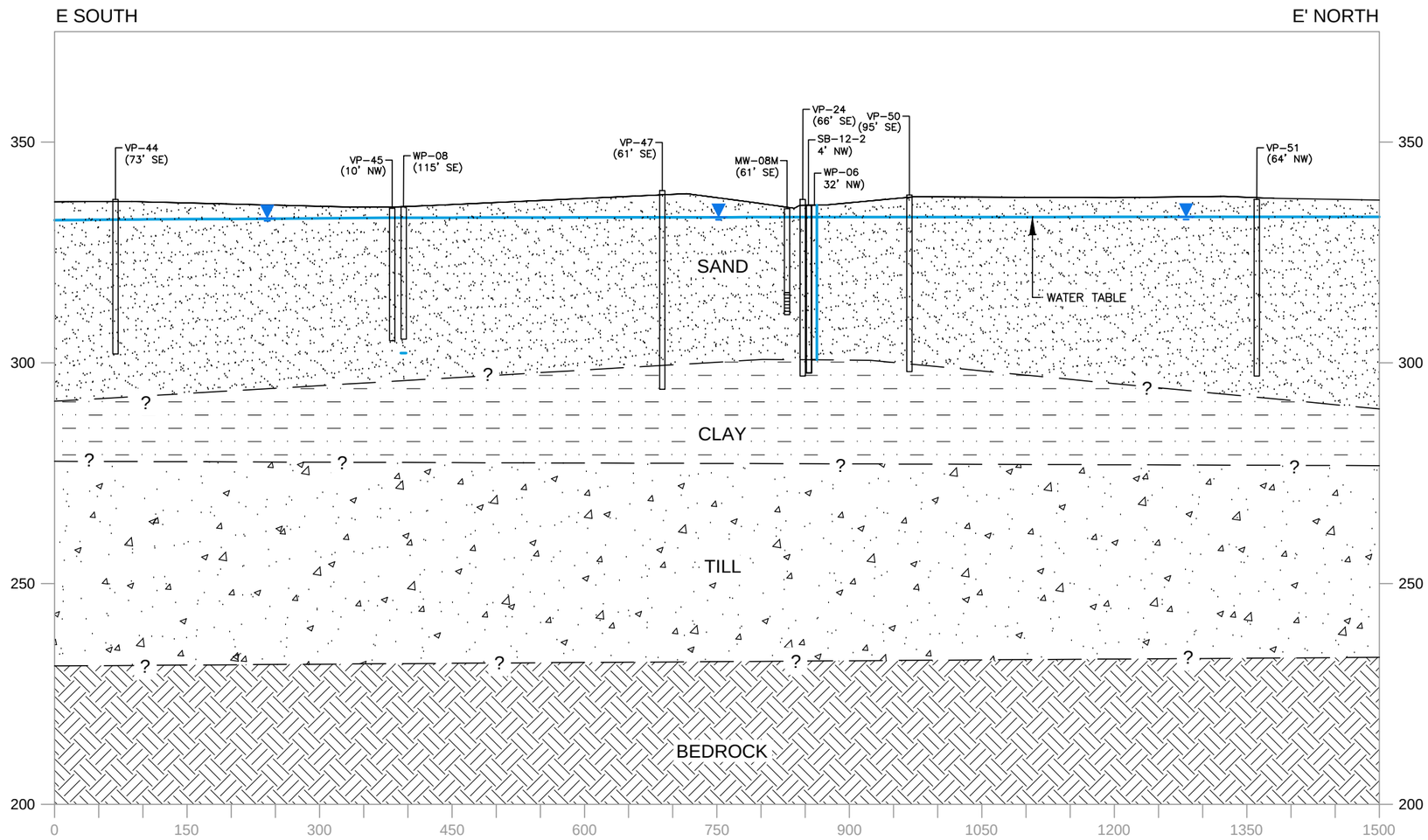
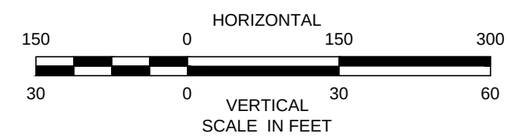
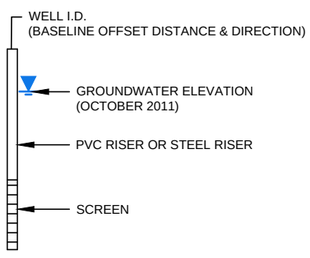


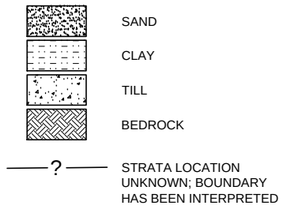


MONITORING WELL



VERTICAL PROFILE

LEGEND



NOTES

1. STRATA SURFACES ARE MAPPED BASED ON THE 2010 GEOPHYSICAL MAPPING HAGER GEOSCIENCE, INC. (HGI), AND OBSERVATIONS MADE DURING SOIL BORINGS AND VERTICAL PROFILING.
2. THE VERTICAL SCALE OF THE CROSS-SECTION HAS BEEN EXAGGERATED FOR ILLUSTRATIVE PURPOSES AND SHOWS THE APPROXIMATE MSL (MEAN SEA LEVEL) ELEVATION.

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FIGURE 3-6

E-E' CROSS-SECTION
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

DRAWN BY:	ML/AKP	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

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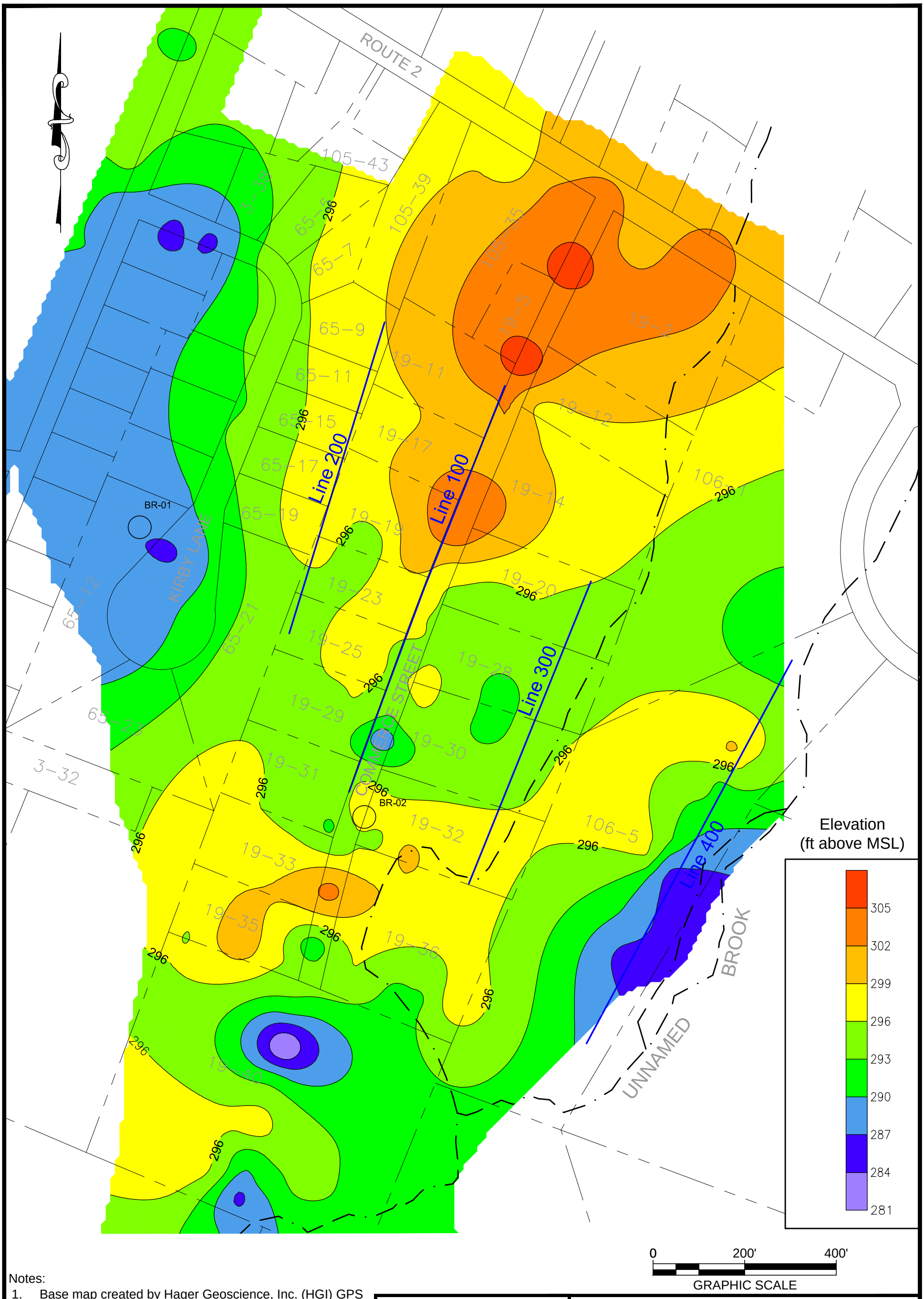

Notes:

1. Base map created by Hager Geoscience, Inc. (HGI) GPS data, August 2010.
2. HGI's geophysical traverses were located using a subfoot GPS system. The data was overlaid onto GPS map.
3. Clay elevation contours represent the general trend of the clay surface and are not intended to be used as precise site-specific elevation measurements.
4. Clay layer elevations were determined by converting GPR travel times to distance.
5. Not all subsurface features may be depicted on this map.

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FIGURE 3-7

CLAY SURFACE ELEVATION CONTOUR MAP
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

DRAWN BY:	ML	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

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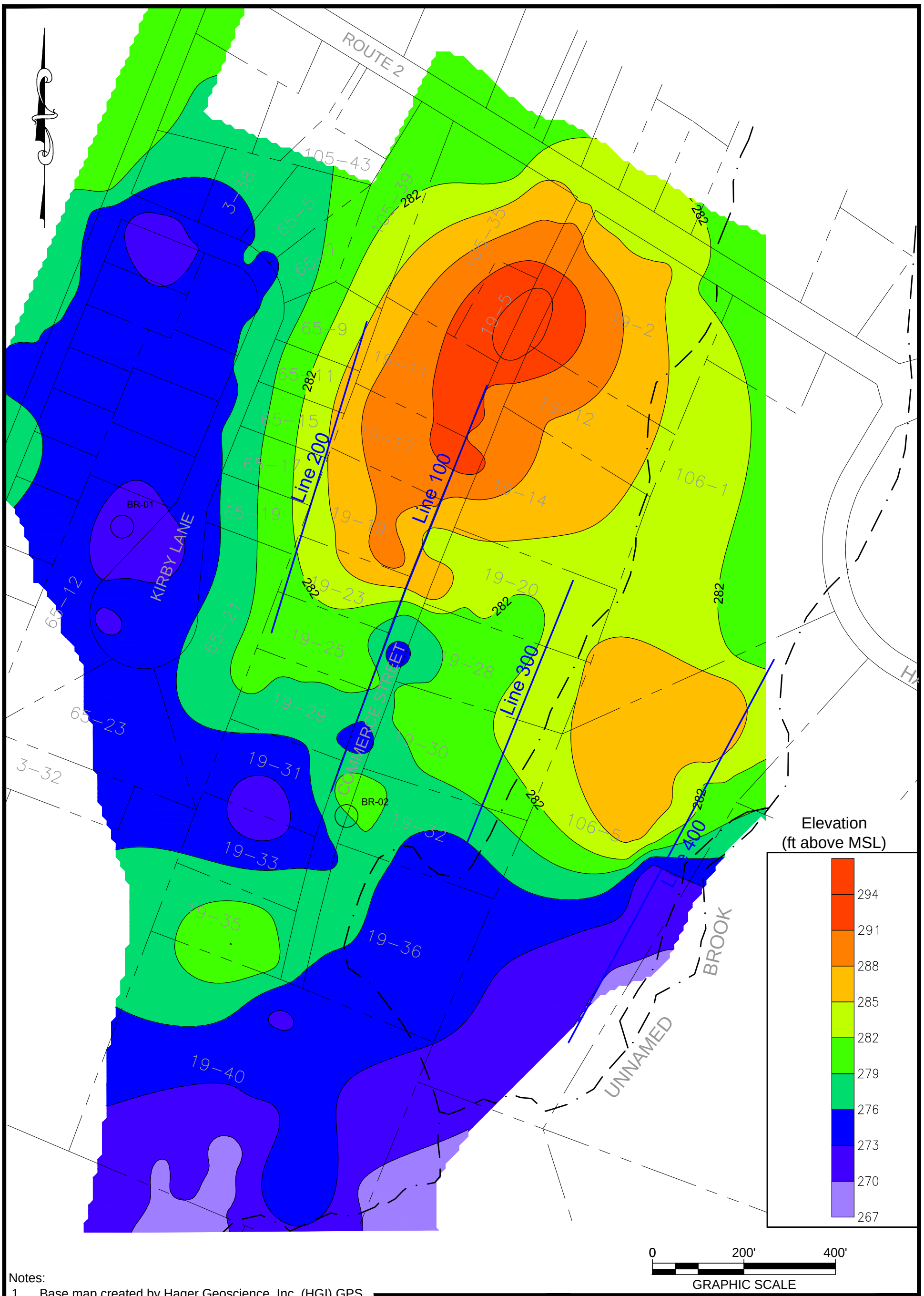

Notes:

1. Base map created by Hager Geoscience, Inc. (HGI) GPS data, August 2010.
2. HGI's geophysical traverses were located using a subfoot GPS system. The data was overlaid onto GPS map.
3. Till elevation contours represent the general trend of the till surface and are not intended to be used as precise site-specific elevation measurements.
4. Till layer elevations were determined by converting GPR travel times to distance.
5. Not all subsurface features may be depicted on this map.

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FIGURE 3-8

TILL SURFACE ELEVATION CONTOUR MAP
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

DRAWN BY:	ML	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

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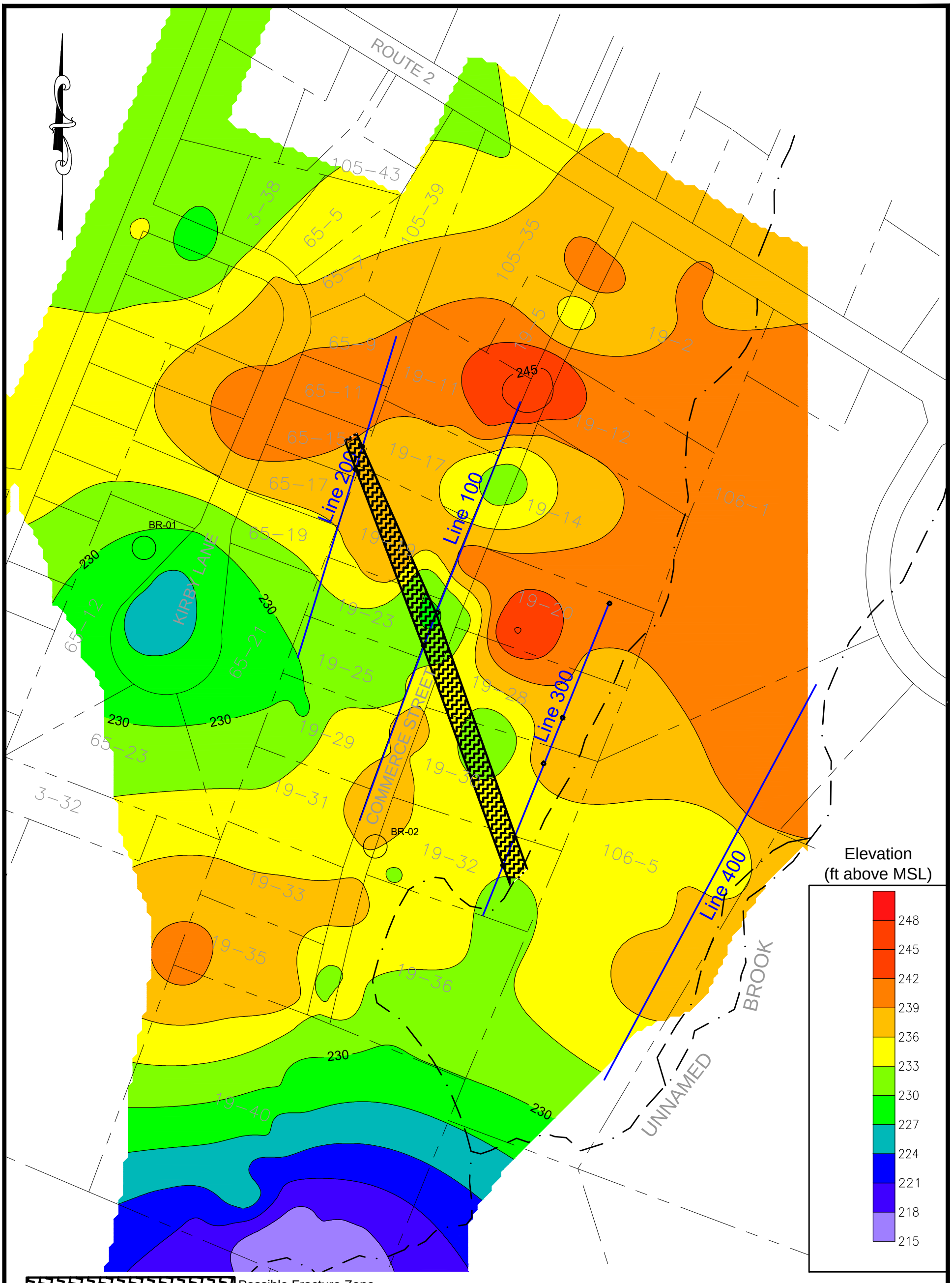

Notes:

1. Base map created by Hager Geoscience, Inc. (HGI) GPS data, August 2010.
2. HGI's geophysical traverses were located using a subfoot GPS system. The data was overlaid onto GPS map.
3. Bedrock elevation contours represent the general trend of the bedrock surface and are not intended to be used as precise site-specific elevation measurements.
4. Clay layer elevations were determined by converting GPR travel times to distance.
5. Not all subsurface features may be depicted on this map.

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FIGURE 3-9

BEDROCK SURFACE ELEVATION CONTOUR MAP
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

DRAWN BY:	ML	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

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Notes:

1. Location of all features is approximate. Map is for reference purposes only. Nobis Engineering, Inc. makes no claims, warranties, representations, expressed or implied, relating to the completeness, accuracy, or reliability of the data shown.

2. Groundwater contours are based on groundwater elevation data obtained in November 2010 and were contoured using the natural neighbor interpolation method. This is one interpretation of the data; other interpretations are possible.

0 100 200 400
Feet
1 inch = 200 feet

N

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FIGURE 3-10

NOVEMBER 2010 (LOW WATER) SHALLOW OVERBURDEN GROUNDWATER CONTOURS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: L:\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\RI\Figure 3-10 November 2010 (Low Water) Shallow Overburden Groundwater Contours.mxd Date Printed: 7/22/2015

Notes:

1. Location of all features is approximate. Map is for reference purposes only. Nobis Engineering, Inc. makes no claims, warranties, representations, expressed or implied, relating to the completeness, accuracy, or reliability of the data shown.

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0 100 200 400
Feet
1 inch = 200 feet

N

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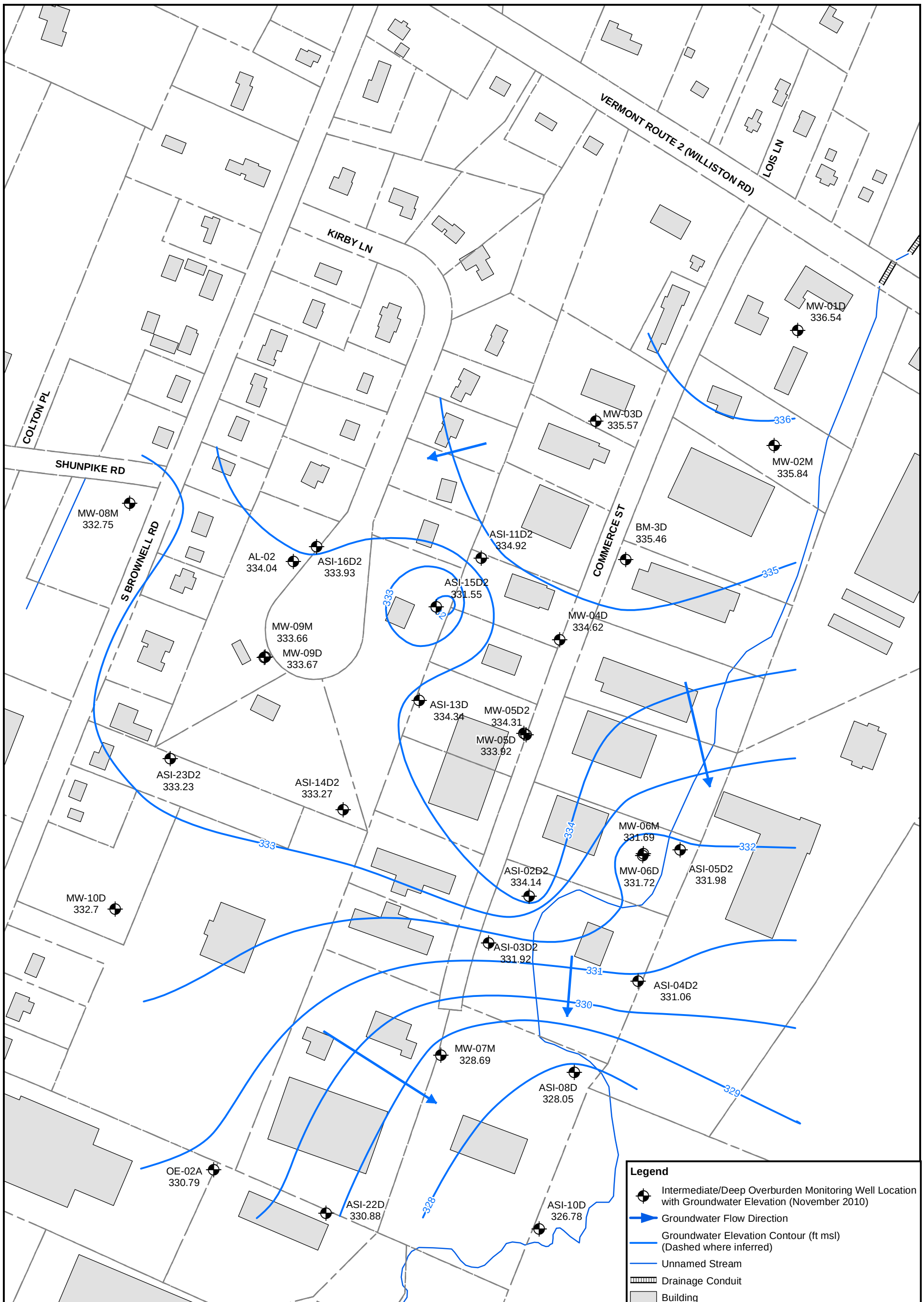
FIGURE 3-11

OCTOBER 2011 (HIGH WATER) SHALLOW OVERBURDEN GROUNDWATER CONTOURS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: K:\Technical Data (TD)\GIS\Maps\RI\Figure 3-11 October 2011 (High Water) Shallow Overburden Groundwater Contours.mxd Date Printed: 7/27/2015



Notes:

1. Location of all features is approximate. Map is for reference purposes only. Nobis Engineering, Inc. makes no claims, warranties, representations, expressed or implied, relating to the completeness, accuracy, or reliability of the data shown.

2. Groundwater contours are based on groundwater elevation data obtained in November 2010 and were contoured using the natural neighbor interpolation method. This is one interpretation of the data; other interpretations are possible.

0 100 200 400
Feet
1 inch = 200 feet

N

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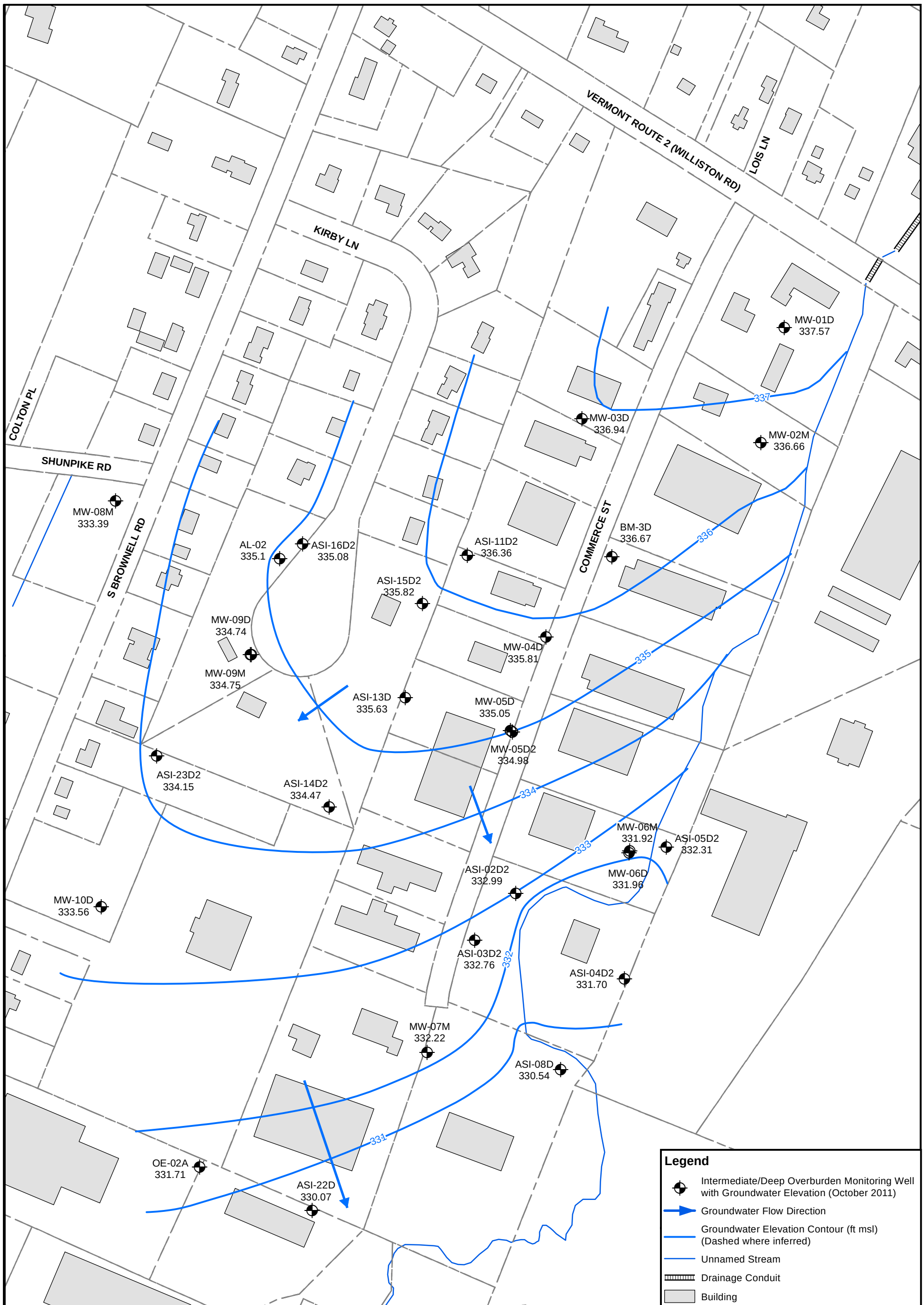
FIGURE 3-12

NOVEMBER 2010 (LOW WATER) INTERMEDIATE/ DEEP OVERBURDEN GROUNDWATER CONTOURS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: L:\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\RI\Figure 3-12 November 2010 (Low Water) Intermediate-Deep Overburden Groundwater Contours.mxd Date Printed: 7/22/2015



Notes:

1. Location of all features is approximate. Map is for reference purposes only. Nobis Engineering, Inc. makes no claims, warranties, representations, expressed or implied, relating to the completeness, accuracy, or reliability of the data shown.

2. Groundwater contours are based on groundwater elevation data obtained in October 2011 and were contoured using the natural neighbor interpolation method. This is one interpretation of the data; other interpretations are possible.

0 100 200 400
Feet
1 inch = 200 feet

N

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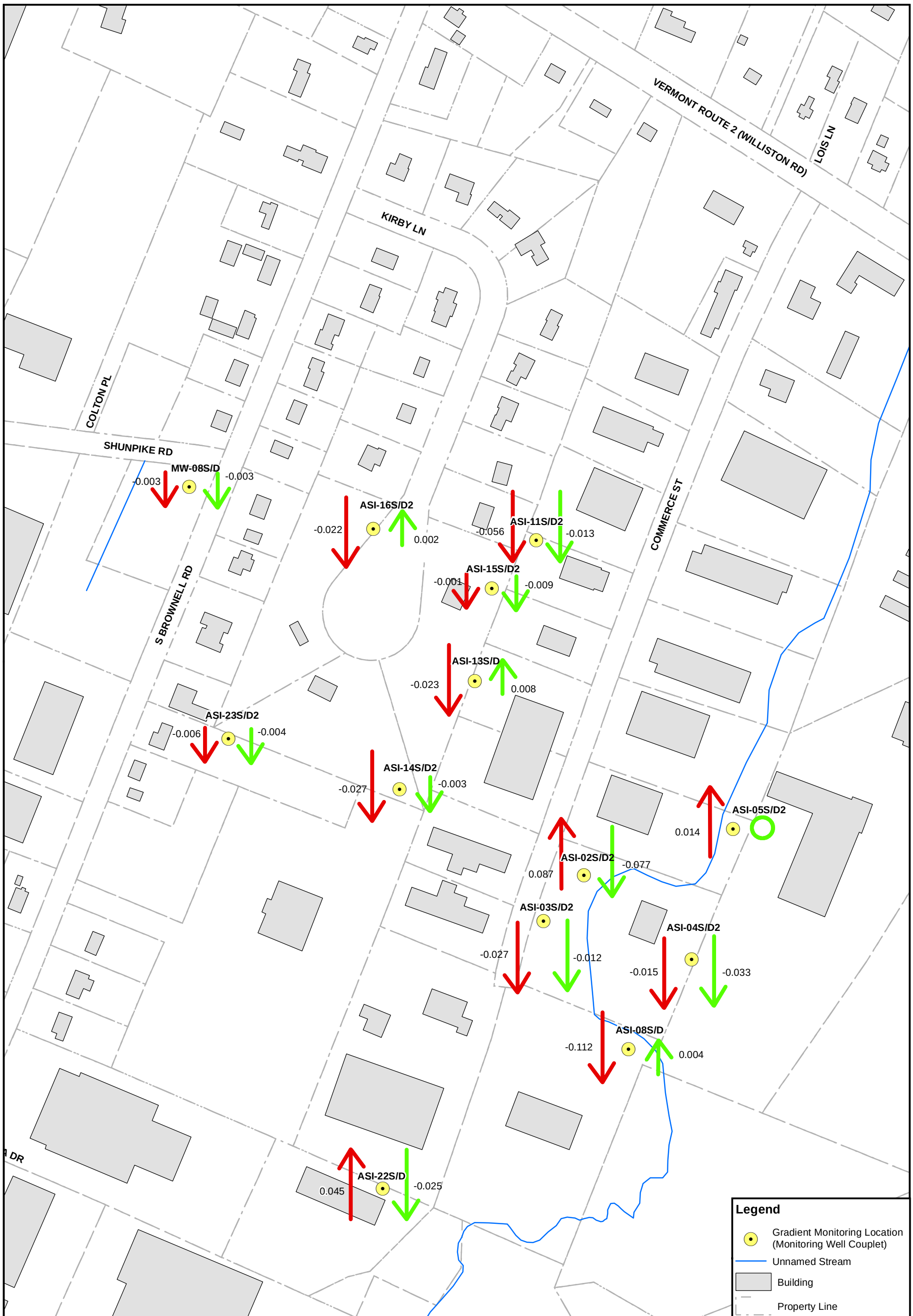
FIGURE 3-13

OCTOBER 2011 (HIGH WATER) INTERMEDIATE/ DEEP OVERBURDEN GROUNDWATER CONTOURS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: L:\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\RI\Figure 3-13 October 2011 (High Water) Intermediate-Deep Overburden Groundwater Contours.mxd Date Printed: 7/22/2015



Vertical Groundwater Gradients

Fall 2010 Fall 2011

Arrows indicate direction, length indicates magnitude
(Long > 0.01, Short < 0.01, circle = no change)

0 100 200 400
Feet
1 inch = 200 feet

N

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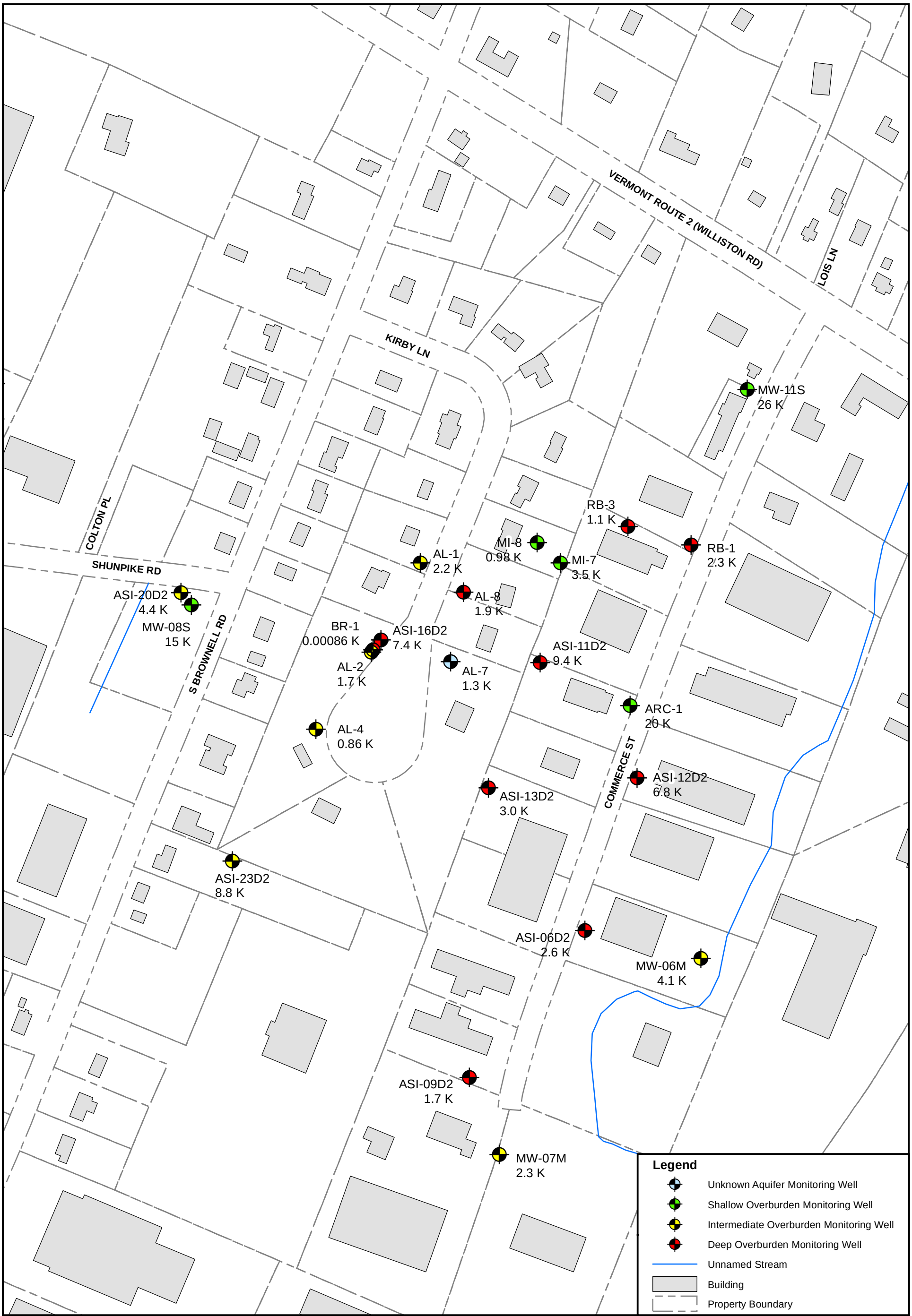
FIGURE 3-14

VERTICAL GROUNDWATER GRADIENTS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: SH
PROJECT NO. 80036	DATE: JULY 2015

Path: K:\Technical Data (TD)\GIS\Maps\RI\Figure 3-14 Vertical Groundwater Gradients.mxd Date Printed: 7/27/2015



Notes:

1. Well labels indicate hydraulic conductivity (K) in ft/day.

2. Hydraulic conductivity data displayed for wells BR-1, MW-06M, MW-07M, MW-08S, and MW-11S were obtained from tests performed by Nobis Engineering, Inc. on January 25, 2013. All other hydraulic conductivity data displayed was collected by others prior to 2008.

0 100 200 400
Feet
1 inch = 200 feet

N

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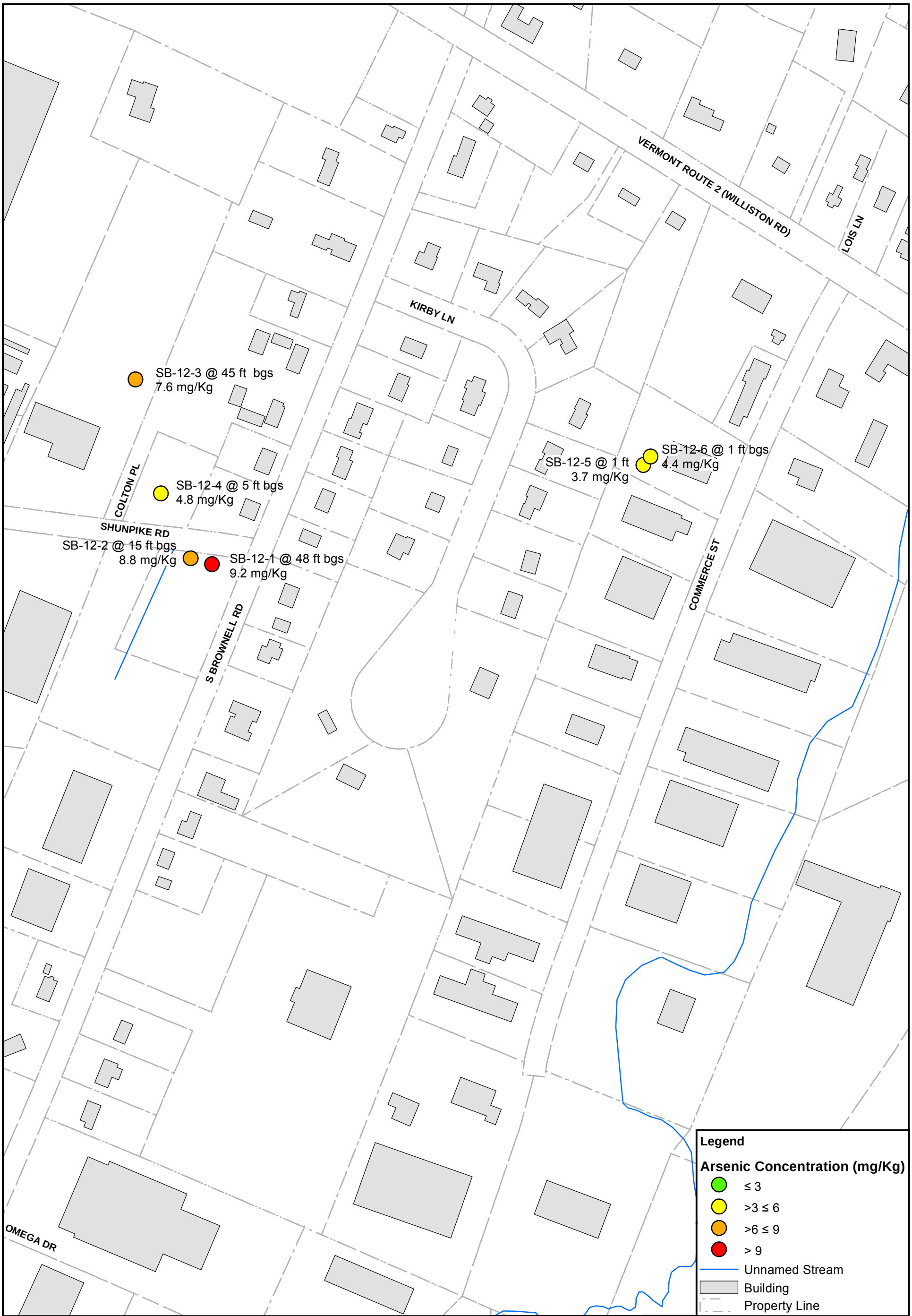
FIGURE 3-15

SLUG TEST LOCATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: K:\Technical Data (TD)\GIS\Maps\R\Figure 3-15 Slug Test Locations.mxd Date Printed: 7/27/2015



Notes:

1. Tags indicate arsenic (As) in soil concentrations in miligrams per kilogram (mg/Kg) at a depth reported in feet below ground surface (ft bgs).

2. Soil samples were collected during a soil boring program performed in August 2012 at the depth interval listed, representing the maximum concentration reported for the samples in the specified soil boring.

0 100 200 400
Feet
1 inch = 200 feet

N

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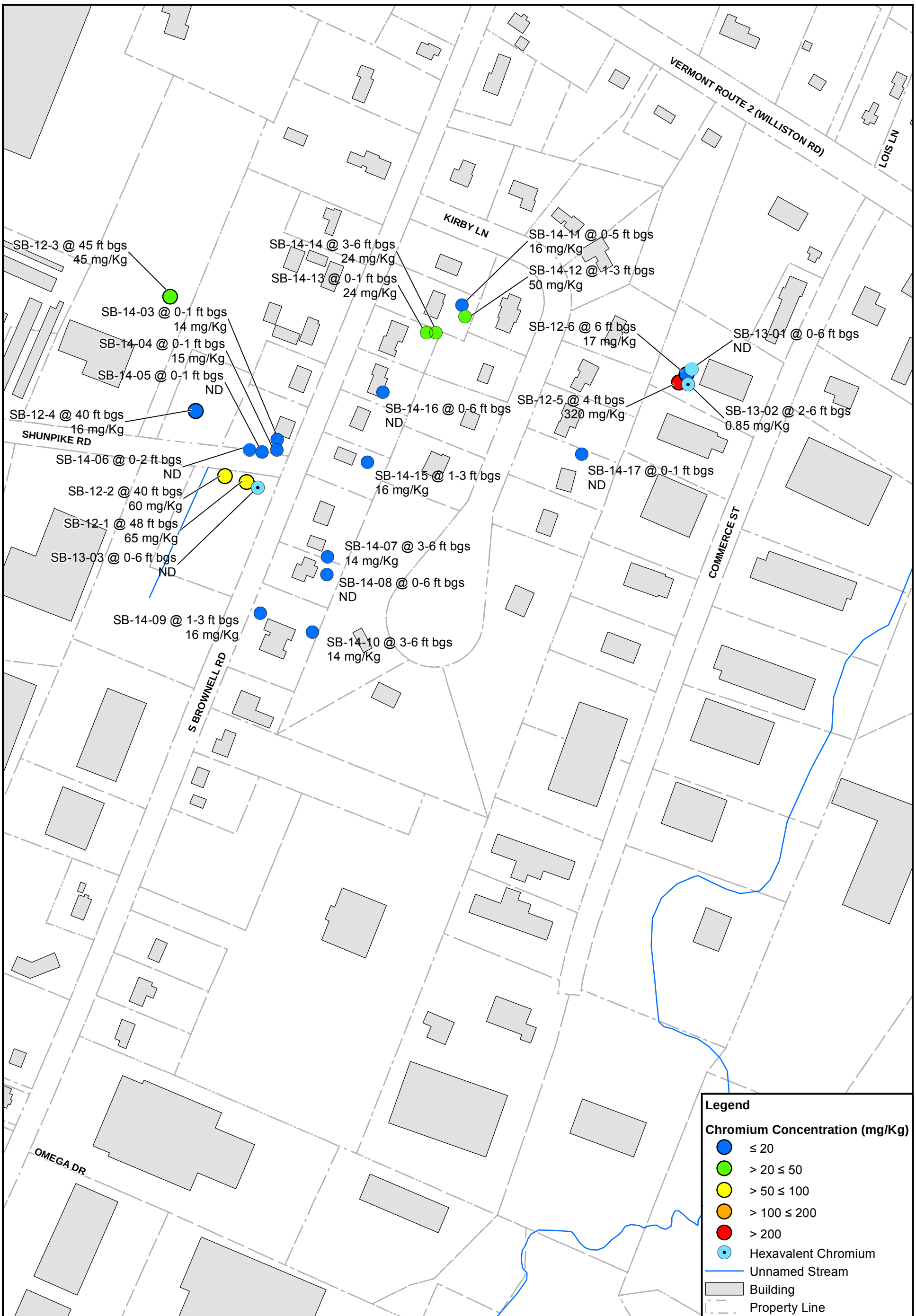
FIGURE 4-1

ARSENIC DISTRIBUTION IN SOIL
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: K:\Technical Data (TD)\GIS\Maps\RI\Figure 4-1 Arsenic Distribution in Soil.mxd Date Printed: 7/27/2015



Notes:

1. Boring labels indicate the maximum total chromium (Cr) in soil concentrations in miligrams per kilogram (mg/Kg) in the soil boirng at the depth reported in feet below ground surface (ft bgs). 2013 results represent hexavalent chromium concentrations. Soil samples were collected during soil boring programs performed in August 2012 and December 2013. ND indicates that chromium was not detected in the soil boring.

0 100 200 400
Feet
1 inch = 200 feet

N

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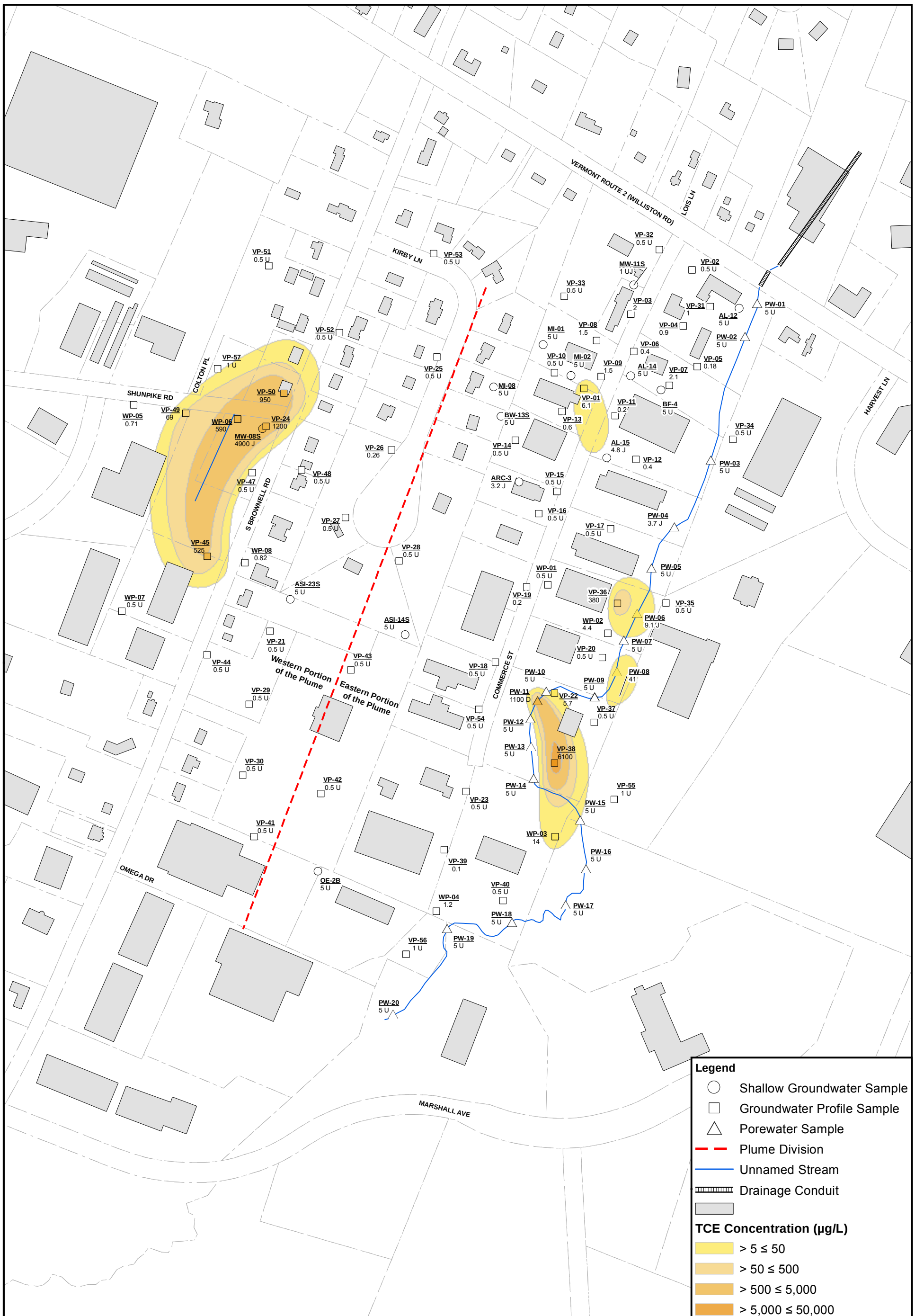
FIGURE 4-2

CHROMIUM DISTRIBUTION IN SOIL
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: K:\Technical Data (TD)\GIS\Maps\RI\Figure 4-2 Chromium Distribution in Soil.mxd Date Printed: 7/27/2015



Notes:

1. Concentrations shown are the most recent shallow groundwater (0 to 20 feet bgs) data collected from the monitoring wells or the maximum concentration data collected during groundwater vertical profiling.

2. U = TCE not detected above sample-specific detection limit. J = Result is estimated.

0 150 300 600
Feet
1 inch = 300 feet

N

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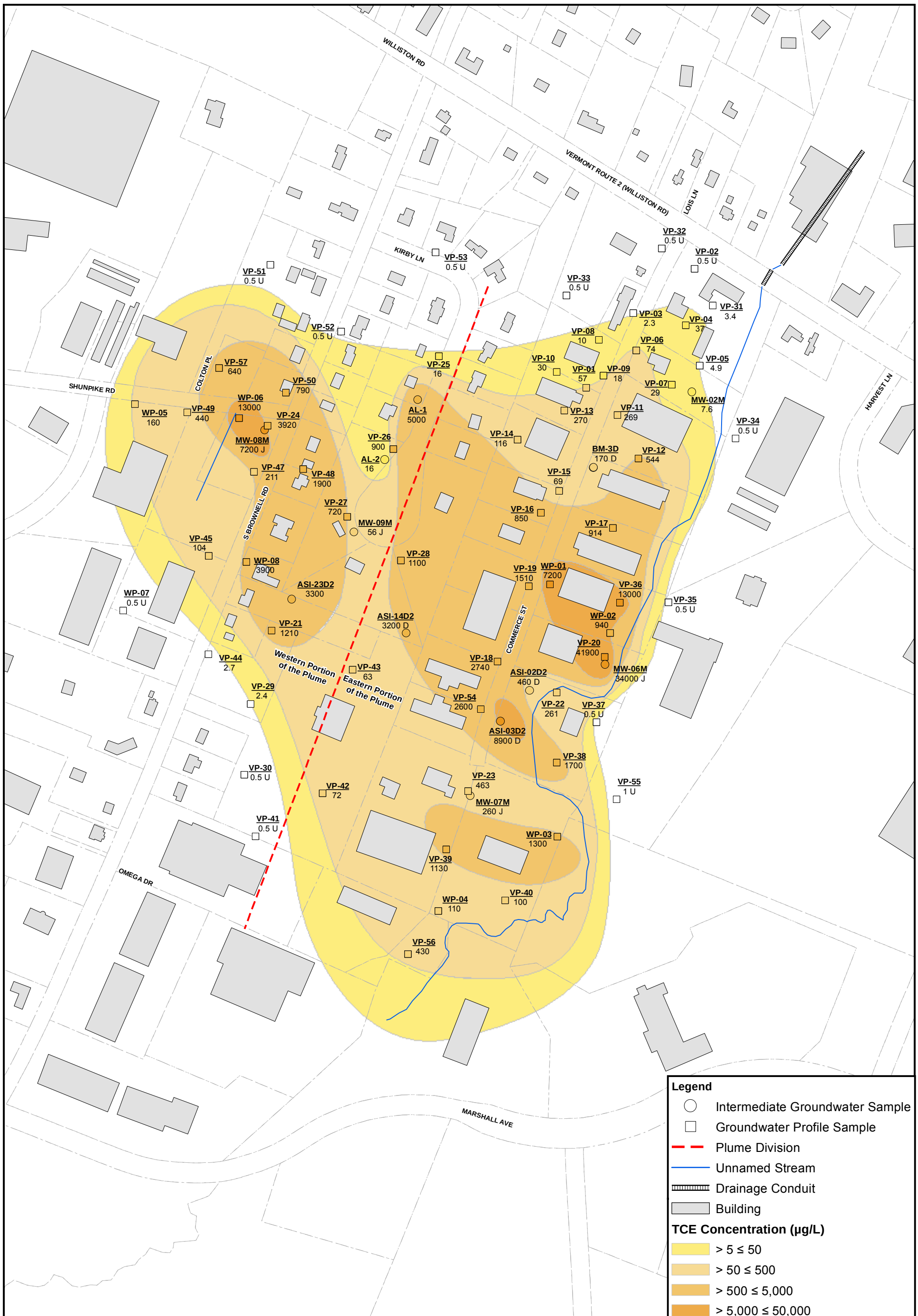
FIGURE 4-3

SHALLOW OVERBURDEN GROUNDWATER TCE CONCENTRATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: L:\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\RI\Figure 4-3 Shallow Overburden Groundwater TCE Concentrations.mxd Date Printed: 7/22/2015



Notes:

1. Concentrations shown are the most recent intermediate groundwater (20 and 30 feet bgs) data collected from the monitoring wells or the maximum concentration collected during groundwater profiling.

2. U = TCE not detected above sample-specific detection limit. J = Result is estimated. D = result is from a dilution of the sample.

0 150 300 600
Feet
1 inch = 300 feet

N

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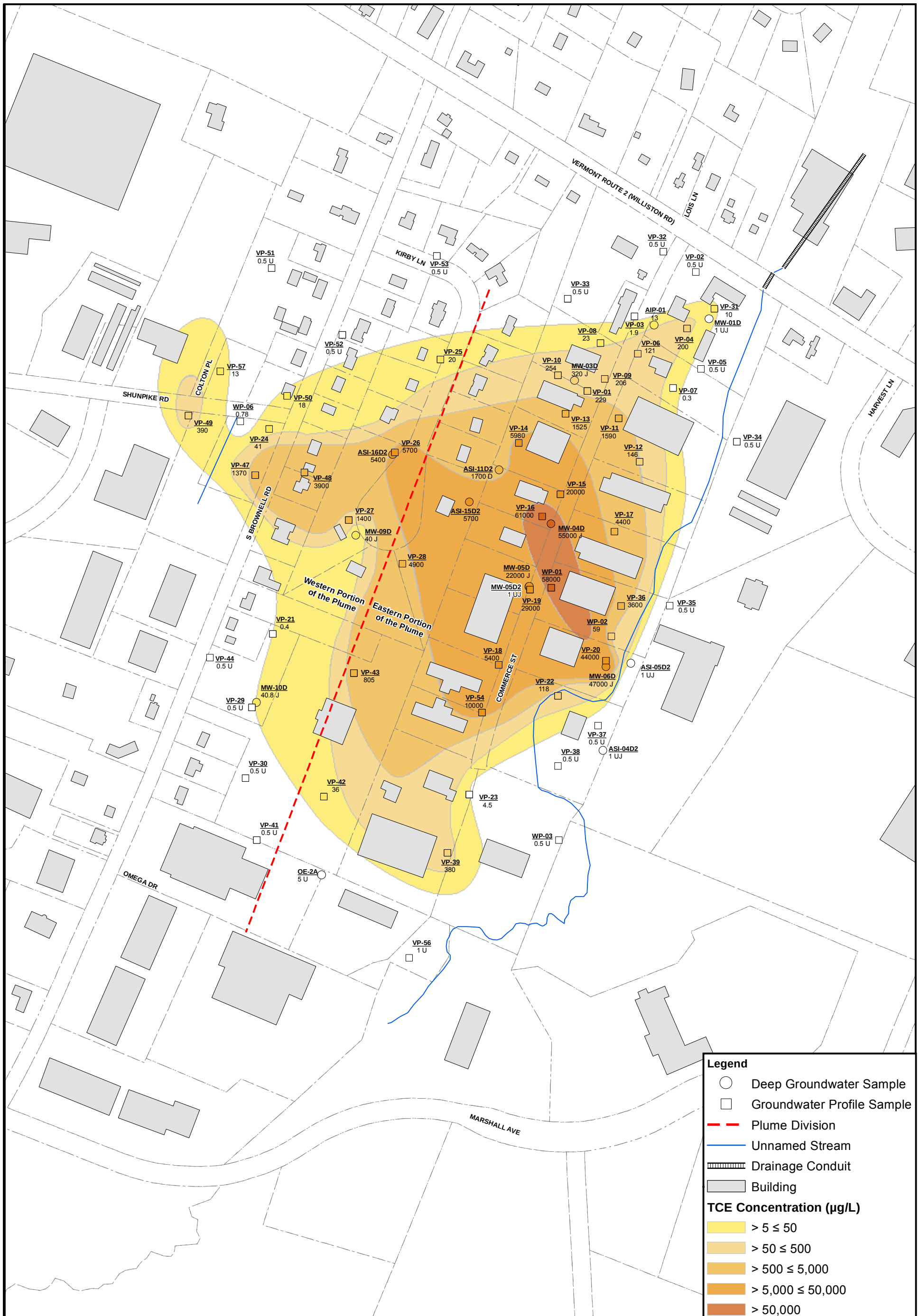
FIGURE 4-4

INTERMEDIATE OVERBURDEN GROUNDWATER TCE CONCENTRATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: L:\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\RI\Figure 4-4 Intermediate Overburden Groundwater TCE Concentrations.mxd Date Printed: 7/22/2015



Notes:

1. Concentrations shown are the most recent deep groundwater (>30 feet bgs) data collected from the monitoring wells or the maximum concentration data collected during groundwater profiling.

2. U = TCE not detected above sample-specific detection limit. J = Result is estimated.

0 150 300 600
Feet
1 inch = 300 feet

N

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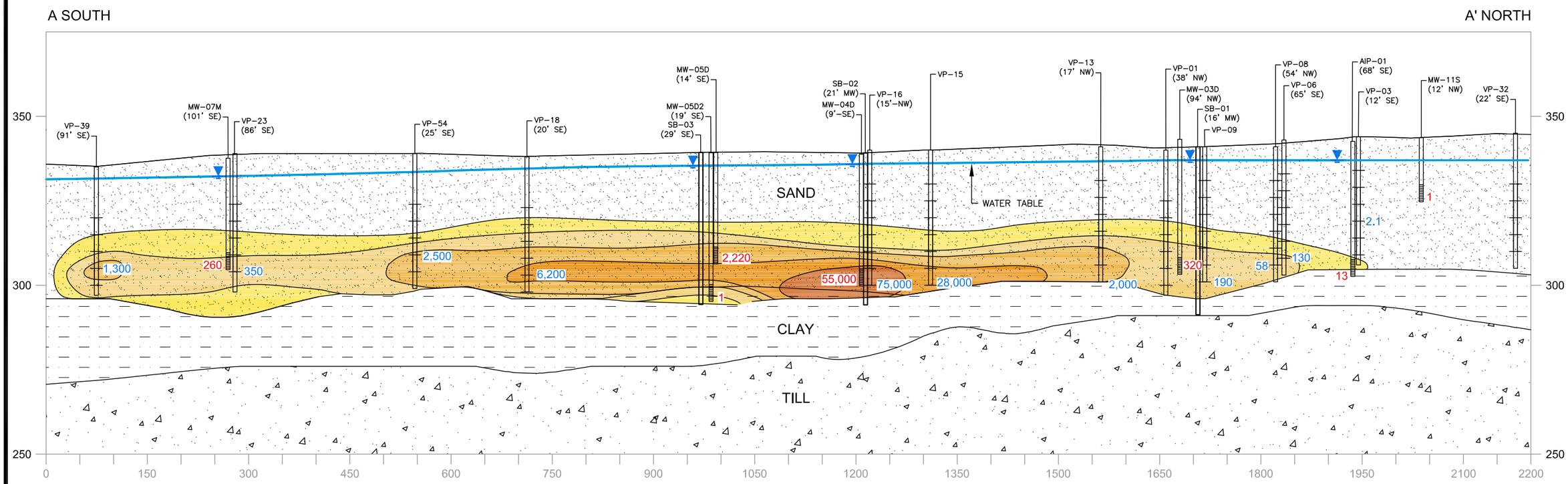
FIGURE 4-5
DEEP OVERBURDEN
GROUNDWATER TCE CONCENTRATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: JL
PROJECT NO. 80036	DATE: JULY 2015

Path: L:\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\RI\Figure 4-5 Deep Overburden Groundwater TCE Concentrations.mxd Date Printed: 7/22/2015



MONITORING WELL

WELL I.D.
(BASELINE OFFSET DISTANCE & DIRECTION)

GROUNDWATER ELEVATION
(OCTOBER 2011)

PVC RISER OR STEEL RISER

5,000 TCE CONCENTRATION (ug/L).

SCREEN

VERTICAL PROFILE

PROFILE I.D.
(BASELINE OFFSET DISTANCE & DIRECTION)

LEGEND

SAND

CLAY

TILL

TCE CONCENTRATION RANGES (ug/L)

5 - 50

51 - 500

501 - 5,000

5,001 - 50,000

> 50,000

ND = NOT DETECTED

Notes:

1. Strata surfaces are mapped based on the 2010 geophysical mapping Hager Geoscience, Inc. (HGI), and observations made during soil borings and vertical profiling.
2. Vertical scale in feet above mean sea level (MSL).

HORIZONTAL
150 0 150 300
30 0 30 60
VERTICAL
SCALE IN FEET

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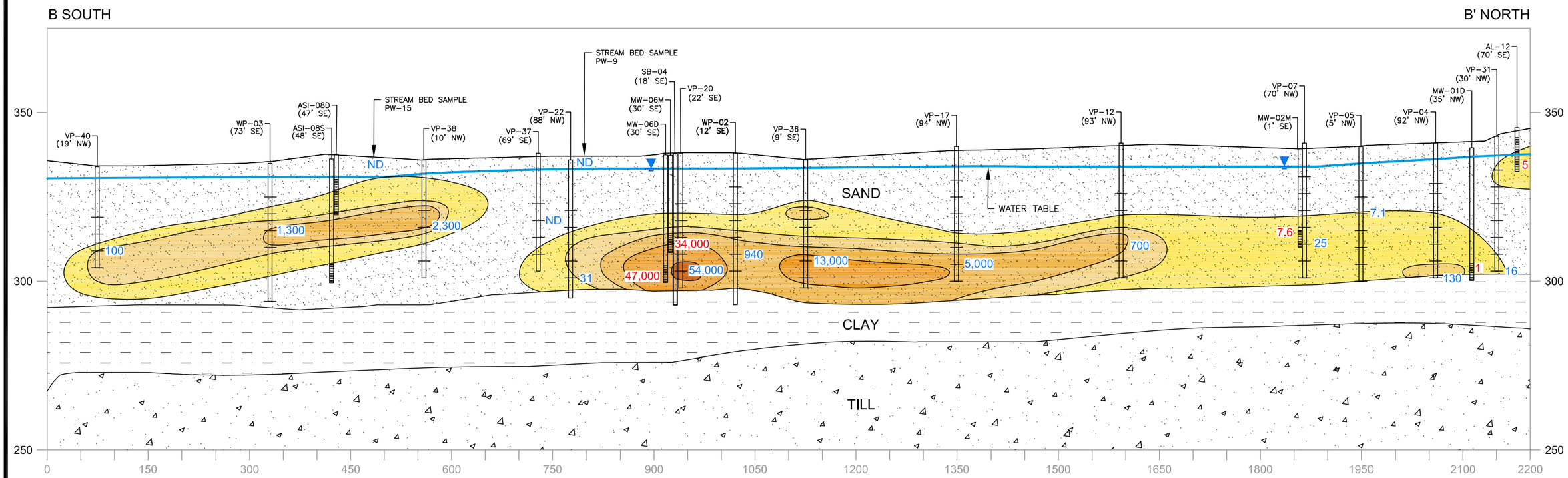
FIGURE 4-6

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

DRAWN BY:	ML	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

K:\Technical Data (TD)\CAD\dwg\80036-CROSS-SECTIONS.dwg



MONITORING WELL

- WELL I.D. (BASELINE OFFSET DISTANCE & DIRECTION)
- GROUNDWATER ELEVATION (OCTOBER 2011)
- PVC RISER OR STEEL RISER
- 5,000 TCE CONCENTRATION (ug/L).
- SCREEN

VERTICAL PROFILE

- PROFILE I.D. (BASELINE OFFSET DISTANCE & DIRECTION)

LEGEND

- SAND
- CLAY
- TILL

TCE CONCENTRATION RANGES (ug/L)

- 5 - 50
- 51 - 500
- 501 - 5,000
- 5,001 - 50,000
- > 50,000
- ND = NOT DETECTED

Notes:

1. Strata surfaces are mapped based on the 2010 geophysical mapping Hager Geoscience, Inc. (HGI), and observations made during soil borings and vertical profiling.
2. Vertical scale in feet above mean sea level (MSL).

HORIZONTAL: 150 0 150 300

VERTICAL SCALE IN FEET: 30 0 30 60

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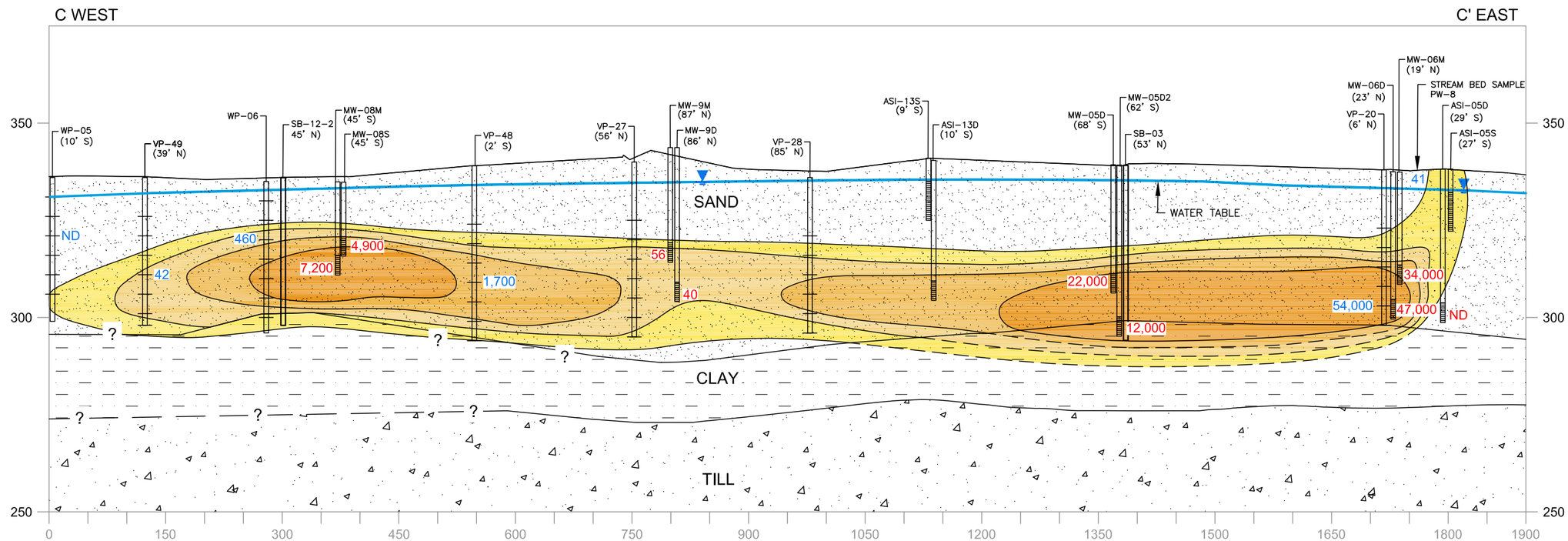
FIGURE 4-7

B-B' CROSS-SECTION
TCE CONCENTRATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

DRAWN BY:	ML	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

K:\Technical Data (TD)\CAD\dwg\80036-CROSS-SECTIONS.dwg



MONITORING WELL

WELL I.D.
(BASELINE OFFSET DISTANCE & DIRECTION)

GROUNDWATER ELEVATION
(OCTOBER 2011)

PVC RISER OR STEEL RISER

5,000 TCE CONCENTRATION (ug/L).

SCREEN

VERTICAL PROFILE

PROFILE I.D.
(BASELINE OFFSET DISTANCE & DIRECTION)

LEGEND

SAND

CLAY

TILL

TCE CONCENTRATION RANGES (ug/L)

5 - 50

51 - 500

501 - 5,000

5,001 - 50,000

> 50,000

ND = NOT DETECTED

Notes:

1. Strata surfaces are mapped based on the 2010 geophysical mapping Hager Geoscience, Inc. (HGI), and observations made during soil borings and vertical profiling.
2. Vertical scale in feet above mean sea level (MSL).

HORIZONTAL
150 0 150 300
30 0 30 60
VERTICAL
SCALE IN FEET

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FIGURE 4-8

C-C' CROSS-SECTION
TCE CONCENTRATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

DRAWN BY:	ML	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

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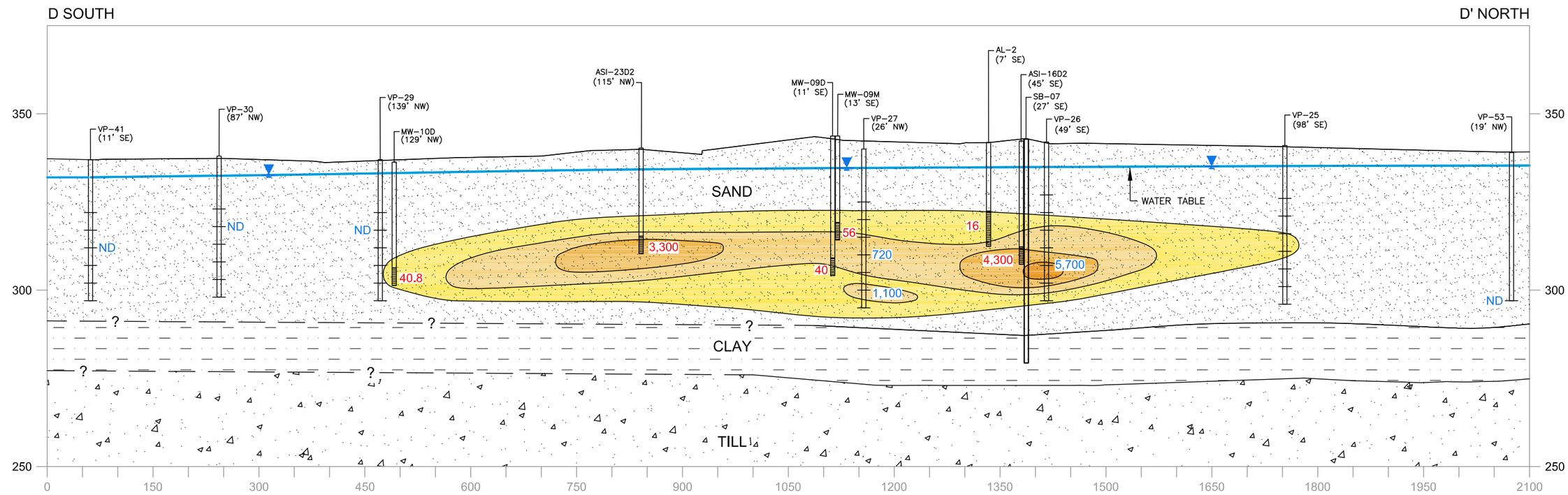

MONITORING WELL

WELL I.D.
(BASELINE OFFSET DISTANCE & DIRECTION)

GROUNDWATER ELEVATION
(OCTOBER 2011)

PVC RISER OR STEEL RISER

5,000 TCE CONCENTRATION (ug/L).

SCREEN

VERTICAL PROFILE

PROFILE I.D.
(BASELINE OFFSET DISTANCE & DIRECTION)

LEGEND

SAND

CLAY

TILL

TCE CONCENTRATION RANGES (ug/L)

5 - 50

51 - 500

501 - 5,000

5,001 - 50,000

> 50,000

ND = NOT DETECTED

Notes:

1. Strata surfaces are mapped based on the 2010 geophysical mapping Hager Geoscience, Inc. (HGI), and observations made during soil borings and vertical profiling.
2. Vertical scale in feet above mean sea level (MSL).

HORIZONTAL
150 0 150 300
30 0 30 60
VERTICAL
SCALE IN FEET

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FIGURE 4-9

D-D' CROSS-SECTION
TCE CONCENTRATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

DRAWN BY:	ML	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

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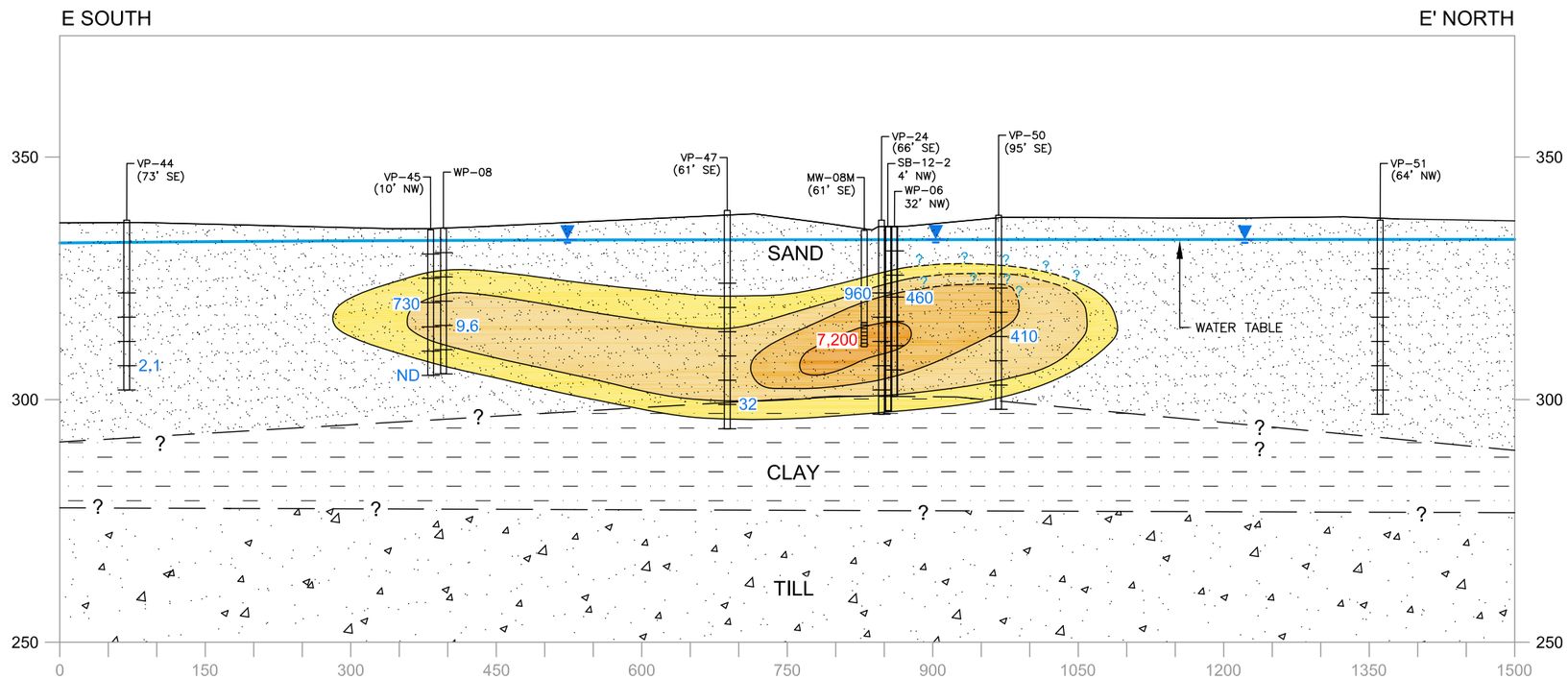

MONITORING WELL

WELL I.D.
(BASELINE OFFSET DISTANCE & DIRECTION)

GROUNDWATER ELEVATION
(OCTOBER 2011)

PVC RISER OR STEEL RISER

5,000 TCE CONCENTRATION (ug/L).

SCREEN

VERTICAL PROFILE

PROFILE I.D.
(BASELINE OFFSET DISTANCE & DIRECTION)

LEGEND

SAND

CLAY

TILL

TCE CONCENTRATION RANGES (ug/L)

5 - 50

51 - 500

501 - 5,000

5,001 - 50,000

> 50,000

ND = NOT DETECTED

Notes:

1. Strata surfaces are mapped based on the 2010 geophysical mapping Hager Geoscience, Inc. (HGI), and observations made during soil borings and vertical profiling.
2. Vertical scale in feet above mean sea level (MSL).

HORIZONTAL
150 0 150 300
30 0 30 60
VERTICAL
SCALE IN FEET

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FIGURE 4-10

E-E' CROSS-SECTION
TCE CONCENTRATIONS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

DRAWN BY:	ML	APPROVED BY:	SH
PROJECT NO.	80036	DATE:	JULY 2015

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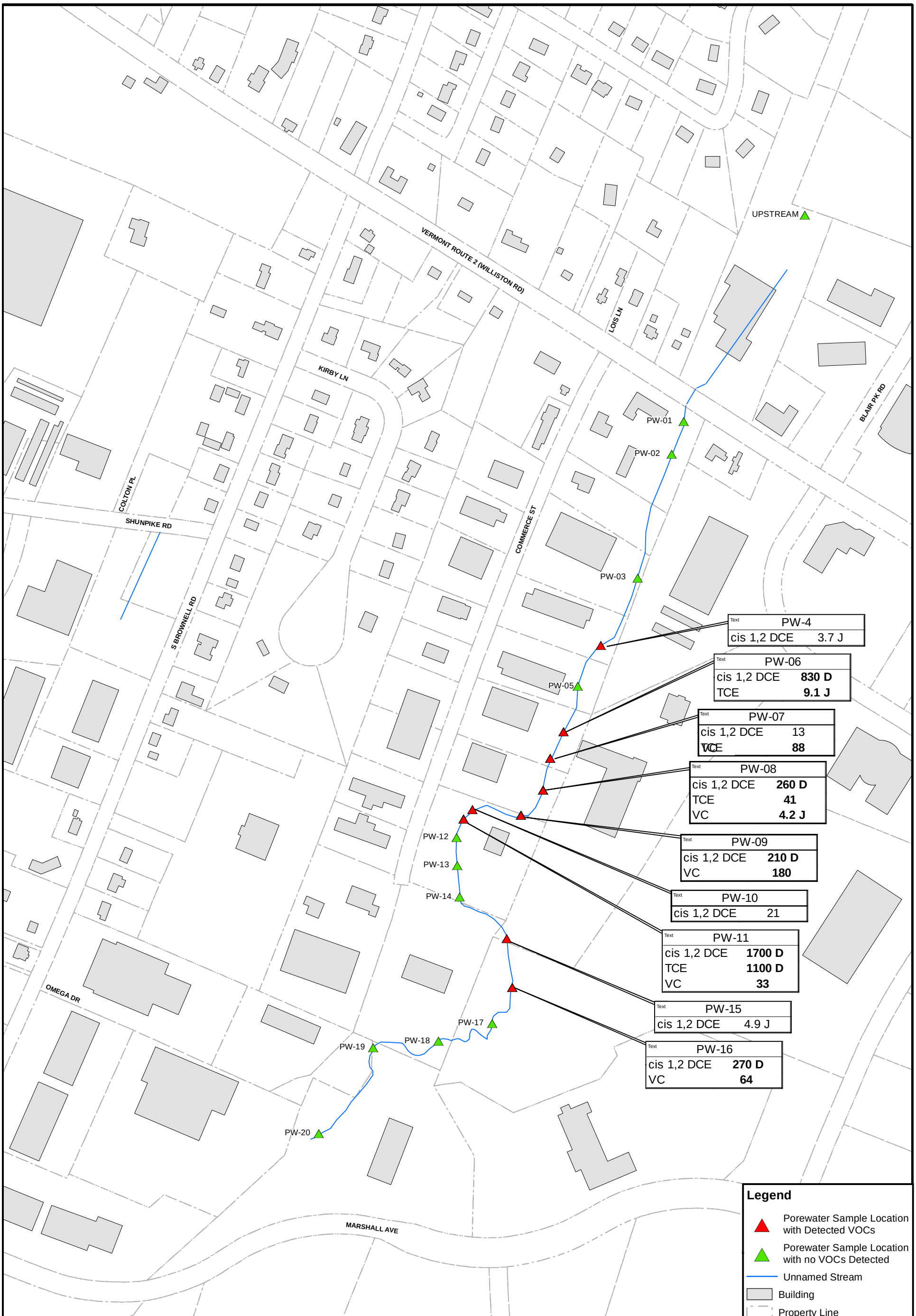

Notes:

1. Results for selected VOCs detected in porewater are shown. Sampling occurred in 2010. **Bold** values indicate an exceedance of applicable criterial. All units are micrograms per liter (µg/L)
2. J = Result was estimated.
D = Result obtained from a dilution of the sample.
3. cis 1,2 DCE = cis 1,2 Dichloroethylene
TCE = Trichloroethylene

0 150 300 600
Feet
1 inch = 300 feet

N

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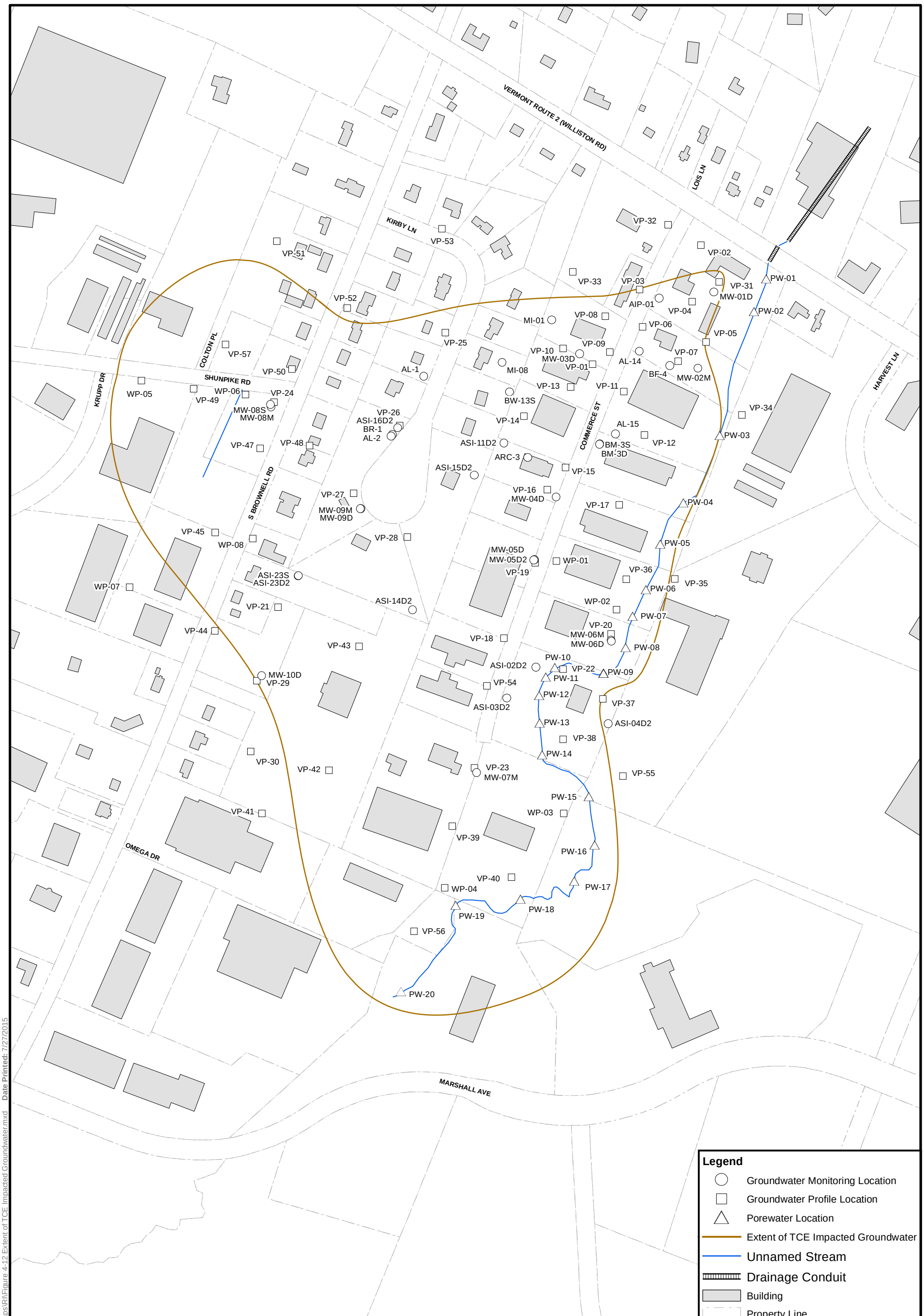
FIGURE 4-11

POREWATER SAMPLING RESULTS
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: SH
PROJECT NO. 80036	DATE: JULY 2015

Path: K:\Technical Data (TD)\GIS\Maps\RI\Figure 4-11 Porewater Sampling Results.mxd Date Printed: 7/28/2015



Notes:

1. Extent shown represents the TCE concentration above 5 ug/L detected from groundwater sampling and vertical profiling events between 2008 and 2012.

0 150 300 600
Feet
1 inch = 300 feet

N

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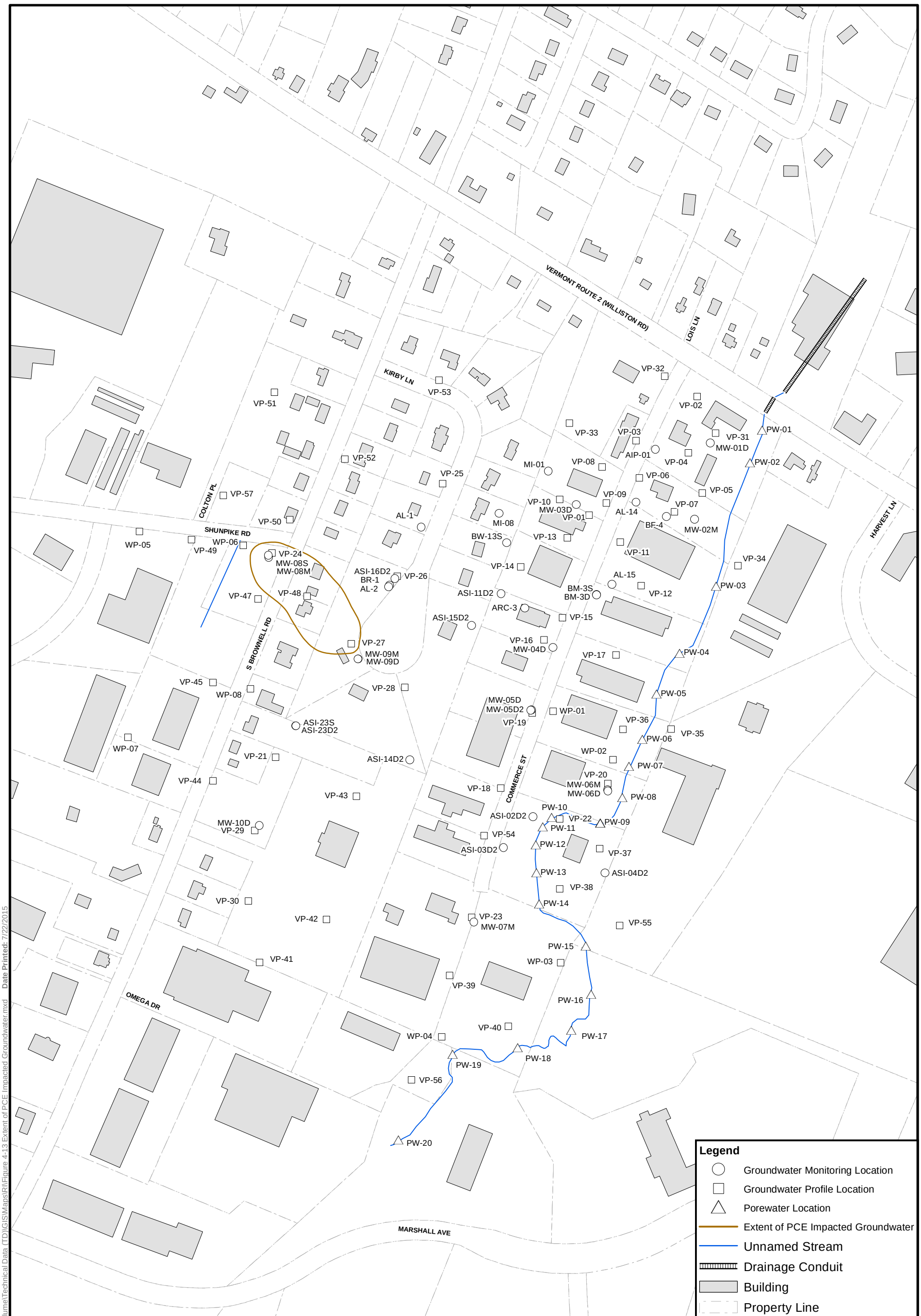
FIGURE 4-12

EXTENT OF TCE IMPACTED GROUDWATER
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: SH
PROJECT NO. 80036	DATE: JULY 2015

Path: K:\Technical Data (TD)\GIS\Maps\RI\Figure 4-12 Extent of TCE Impacted Groundwater.mxd Date Printed: 7/27/2015



Notes:

1. Extent shown represents the PCE concentration above 5 ug/L detected from groundwater sampling and vertical profiling events between 2008 and 2012.

0 150 300 600
Feet
1 inch = 300 feet

N

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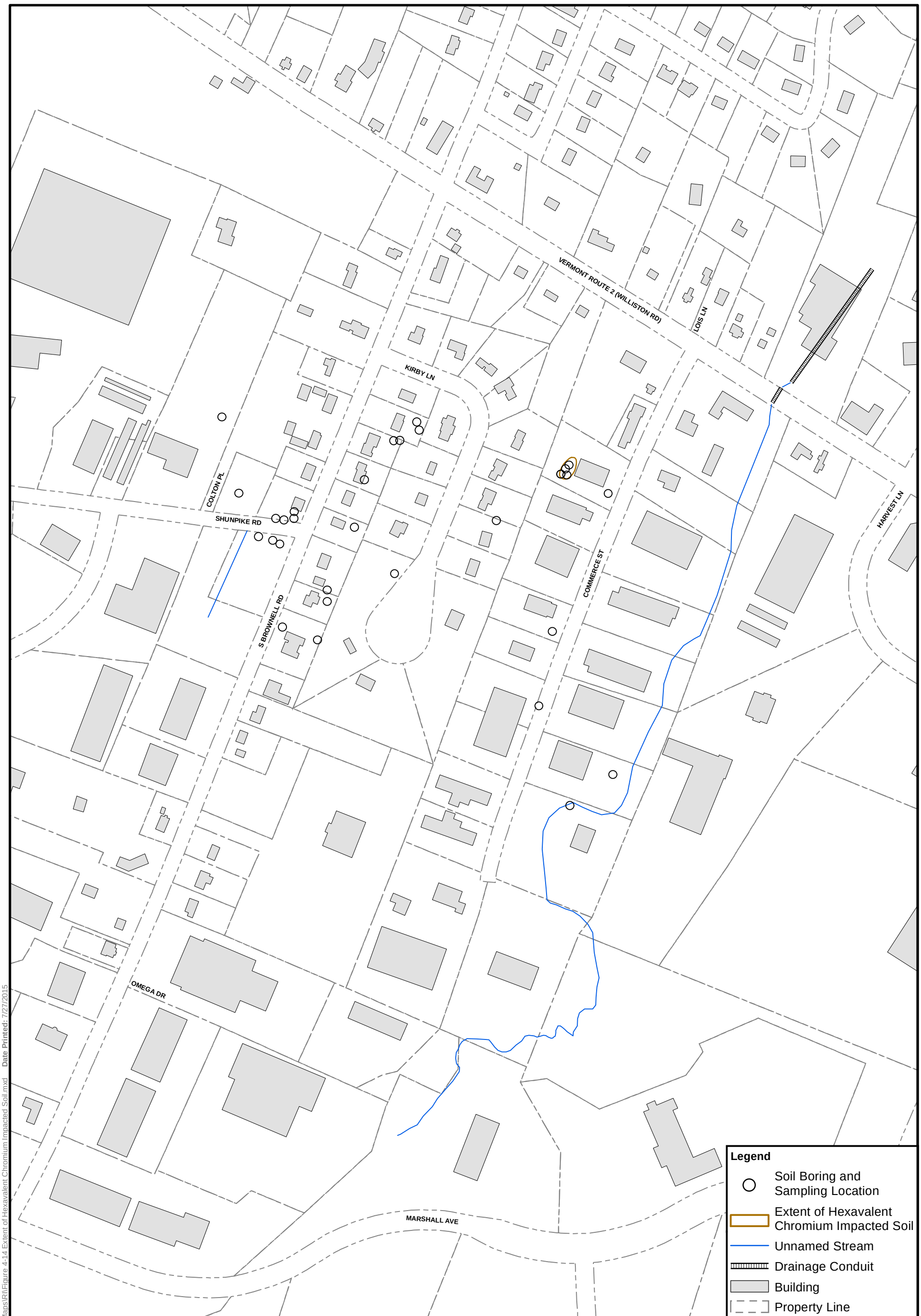
FIGURE 4-13

EXTENT OF PCE IMPACTED GROUDWATER
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: SH
PROJECT NO. 80036	DATE: JULY 2015

Path: L:\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\RI\Figure 4-13 Extent of PCE Impacted Groundwater.mxd Date Printed: 7/22/2015



Notes:

1. Extent shown represents the hexavalent chromium concentration above 0.29 mg/Kg detected from soil sampling events between 2008 and 2013.

0 150 300 600
Feet
1 inch = 300 feet

N

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FIGURE 4-14

EXTENT OF HEXAVALENT CHROMIUM IMPACTED SOIL
COMMERCE STREET PLUME
SUPERFUND SITE
WILLISTON, VERMONT

PREPARED BY: JH	CHECKED BY: SH
PROJECT NO. 80036	DATE: JULY 2015

Path: K:\Technical Data (TD)\GIS\Maps\RI\Figure 4-14 Extent of Hexavalent Chromium Impacted Soil.mxd Date Printed: 7/27/2015

APPENDIX A

Appendix I

December 22, 1984

BORING LOGS -MITEC

The following are the soil boring logs for sampling and monitor well installations conducted at Mitec Systems Corporation , 15 Commerce St. Williston, Vt. conducted under the direction of John Stuart, J.H. Stuart Associates. Samples taken were obtained using representative split spoon sampling (TB 1 &6). Observations were made from auger tailings. Monitor wells were constructed of 2" ID factory slotted (5') and threaded (Diedrich) PVC covered with filter fabric held in place with fiber reinforced tape (#8 & #9 Used S.S. wire). All wells were difficult to instal due to flowing sand.

11/6/84

M/W #1
MI-1

0-5' Clean oxidized medium sand.
5-15'Saturated neutral medium sand.
M/W 9.9' WL(water level below top of pipe), 17.25' TP(total pipe), 2.5' SU (pipe above grade), betonite 5.6-6.2' BG (below grade).

M/W T/B #2
MI-2

0-3' Sand fill.
3-5' Oxidized orange brown loamy sand.
5-20'Saturated neutral medium turning finer sand.
Representative samples-sampler riding in auger.
-21' Saturated neutral fine flowing sand.
-26.2' Same
-32.6' Same
-36.7' Reduced blue gray fine sand trace of silt.
M/W 7.4' WL, 17.1' TP, 2.3' SU, betonite 4.6-5' BG.

M/W #3
MI-3

0-4' Medium sand.
4-5' Mottled medium sand.
5-15'Saturated neutral medium sand.
M/W (Very difficult to instal 3 tries) 1 solvent coupling above grade. 8' WL, 16.7' TP, 2.7'SU, betonite 4.5-5.2' BG.

M/W #4
MI-4

0-4' Dark brown medium sand.
4-5' Reduced dark gray medium/coarse sand-odor.
5-15'Saturated neutral medium sand.
M/W 7.6'WL foamy, 17.1 TP, 3.4'SU, betonite 3.4-4.9' BG.

11/7/84

M/W #5
MI-5

0-4' Medium sand. 4-5' Heavily mottled medium sand.
5-10'Saturated neutral medium sand.
M/W 7.9' WL, 12.1 TP, 3 SU,betonite 0-1' BG.

M/W #6 No representative sample recovery- sand flowed out of sampler. Samples taken with plugged auger.

MI-6

0-2' Bright stained soil.
2-10' Saturated fine sand.
M/W 4.6' WL, [illegible].1' TP, 2.2' SU, betonite .5-1.5' BG.

T/B #6A 5' Offset SW.
-7.7' Jar #2 Light gray fine sand saturated.
-12.9' Jar #3 (two tries-sample from collapsed material and soil below first try taken by over driving). Light gray saturated fine sand.

12/19/84
T/B #2B Auger tailings:
0-5' Damp oxidized yellow brown loamy sand.
5-35' Saturated neutral medium sand.
Split Spoon samples (S.S.) sampler riding in auger.
-41.25' No recovery assumed flowing sand.
-48.0' Reduced gray very silty fine sand.
-52.6' Gray soft clay.
-58.0' Gray soft clay.
No monitor well.

M/W #7 Background.
0-15' No samples Sand.

MI-9

M/W W.L. 7.91', T.P. 17.0', S.U. 2.5' betonite 4-5' B.G.

M/W #8 West of fence.
0-5' No samples -sand.
-12.7' S.S. Sample in collapsed material. (2 tries)coarse sand trace of silt saturated.

MI-7

-17.0' S.S. Gray silty sand.
M/W T.P. 17.1' S.U. 2.6'.

M/W #9 West of burly pine.
0-15' No samples sand.

MI-8

M/W W.L. 5.7', T.P. 16.95'. 2.5' Solvent welded coupling above grade.

Sincerely

Gerard Adams

AD[illegible] ENGINEERING
[illegible]rd Adam[illegible]
RD [illegible], Box [illegible]3
Unde[illegible] Hill, Vt. 05489
99-4945

July 13, 1985

Mr. Chris Stone
Hazardous Waste Section
Agency of Enviornmental Conservation
Montpelier, Vt. 05602

The following are the boring logs for Mitect project conducted at the Alden & Provost properties under the direction of Chris Stone and John Amidon representing AEC:

07/08/85 AL #1

-11.5' 3,2,2,3.(blows from a #140 hammer falling 30" to drive a standard penetration sampler 6" -blow counts are not intended for load bearing information, ie; emphasis is on sample recovery) Sat. brown slightly silty fine sand water at 8'.

-17.1' 2,4,4,3. Sat brown fine sand.

-22.' 2,6. Sat. gray med. sand.

-27.5' 2,2,1. Brown medium sand over over gray fine sandy silt.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section-	10'	Solid Riser-	20'	Bags Sand-	5.5
Betonite Plug-	7'	Total Pipe-	25.4'*	Water Level-	7.1'*
Stick Up-	.5*	Top slop +above -below water-			-8.65'
Air Pump Developed-		Good	Flow-	Good	

* 5' Extension added AFTER these measurements.

07/08/85 AL #2

-12.5' 4,5,4,4.Gray Brown fine-medium san.Saturated.

-17.6' 2,4,6,7. Gray brown medium sand.

-22.67 2,1,3. Gray medium sand. mottled.

-28' 1,1. Questionable recovery sample is gray brown medium tro coarse sand. This is not typical of blow counts & samples from other borings also augers had gray silty silty sand at bottom.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section-	10'	Solid Riser-	15'	Bags Sand-	5.5
Betonite Plug-		Total Pipe-	25.4'	Water Level-	9.4'
Stick Up-	0	Top slop +above -below water-			-6.3'
Air Pump Developed-		Good.	Flow-	Good	

07/09/85 AL #3

-12.5' 3,2,2,3. Saturated brown fine sand trace silt water at 8'.

-16.9' 3,4,6. Brown medium sand.

-21.5' 2,3,4. Brown fine sand.

-27.6' 2,2. Brown fine sand. VO=.3 ppm

-32.8' 1,2,2. Gray fine sand.

-37.2' 2,1. Gray fine sand trace of silt.
-42.1' 2,2,1. Gray fine sand.
-47.2' 2,1,3. Gray clay/silt.
-52.1' 2,1,3. Gray clay/silt.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section-	5'	Solid Riser-	15'	Bags Sand-	3.5
Betonite Plug-	42 & 7'	Total Pipe-	47.5'	Water Level-	7'
Stick Up-	.3'	Top slop +above -below water-			-33.8'
Air Pump Developed-		NO	Flow-	NO	

07/09/85 AL #4 (shallow no samples equired)

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section-	10'	Solid Riser-	15'	Bags Sand-	4.5'
Betonite Plug-	7'	Total Pipe-		Water Level-	
Stick Up-		Top slop +above -below water-			
Air Pump Developed-		Good	Flow-	Good	

07/09/85 AL #5
-12.2' 2,3,4,6. Saturated brown Medium sand over coarse mottled sand.
-17.2' 2,4. Gray brown medium sand.
-22.4' 2,4,2. Brown medium sand over brown gray fine sand.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section-	10'	Solid Riser-	15'	Bags Sand-	0 No

sand ran out of water could not replenish supply-road blocked.

Betonite Plug-	10'	Total Pipe-		Water Level-	
Stick Up-		Top slop +above -below water-			
Air Pump Developed-		Good	Flow-	Good	

07/10/85 AL #6
-7.5' 4,4,4,4.
-11.9' 4,5,5.
-16.9' 4,5,5.
-22.8' 2,2,2.
-27.3' 2,3,2.
-32.2' 2,3,3.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section-	10'	Solid Riser-	15'	Bags Sand-	5
Betonite Plug-	5.5'	Total Pipe-	24.5'	Water Level-	5.5'
Stick Up-	.5'	Top slop +above -below water-			-9.3'
Air Pump Developed-		Cloudy	Flow-	Good.	

Bottom 2' of screen poorly packed due to flowing sand.

07/10/85 AL #7
-12.3' 1,2,4.
-17.2' 2,1,3,3.
-22.8' 3,2,1.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section-	10'	Solid Riser-	15'	Bags Sand-	4

Betonite Plug- 6' Total Pipe- 5.1' Water Level- 7'
Stick Up- 1.3' Top slop +above -below water- -8.4'
Air Pump Developed- Cloudy Flow- Good
Bottom 2' of screen poorly packed due to flowing sand.

07/11/85 AL #8
-31.6' 3,2,3.
-37.6' 2,2,1
-42.2' 3,3.
-47' 1,2,3.
-52' 1,2,3.

MONITOR WELL
2" Factory threaded & Slotted (.010") PVC-Deitrich.
Slotted section- 5' Solid Riser- 35' Bags Sand-Good 5
Betonite Plug- 32 & 6' Total Pipe- 40.8' Water Level- 5.6'
Stick Up- .3' Top slop +above -below water- -25.5'
Air Pump Developed- Cloudy Flow- good

07/11/85 ~~#9~~ AL9
-11.8' 1,2,3.
-17' 1,4,4.
-22.1' 2,1,2.
-26.9' 3,4,2.
32.3' 3,1,2.

MONITOR WELL
2" Factory threaded & Slotted (.010") PVC-Deitrich.
Slotted section- 10' Solid Riser- 15' Bags Sand- 7
Sand Pack- 14' Good.
Betonite Plug- 7' Total Pipe- Water Level-
Stick Up- Top slop +above -below water-
Air Pump Developed-Slightly cloudy Flow- Good

08/12/85 AL#10
-11.3' 5,5,8. Light brown dry medium sand VO=0
-16.8' 2,5,4. Sat. brown medium sand water at 13.8' VO=0
-21.9' 2,3,2. Brown medium sand.
-27' 3,3,3. Brown medium & fine sand.
-32.5' 2,1,2. Gray fine sand very liitle sample
-36.5' 2,2. No recovery drilled into gray fine sand to eliminate problems from upper medium flowing sand.

MONITOR WELL
2" Factory threaded & Slotted (.010") PVC-Deitrich.
Slotted section- 10' Solid Riser- 20' Bags Sand- 7
Sand Pack- 13' Good
Betonite Plug- 13' Total Pipe- 32' Water Level- 13.6'
Stick Up- 0 Top slop +above -below water- -8.7'
Air Pump Developed- no Flow-

08/12/85 AL #11
-6.2' 3,5,6. Wet brown fine sand.
-11.9' 3,3,2. Brown fine sand.
-17' 4,5,3. Brown fine sand.
-22.5' 2,3,1. Brown fine sand.
-26.9' 2,1. Poor recovery-Installed flap retainers-Brown fine sand?

-31.7' 2,1. Gray fine [illegible] nd.
Found silt/clay on aogers when pulled

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section- 15' Soil Riser= [illegible] Bags Sand- 8
Sand Pack-Good at bottom of 12 screen some collapse at top.
Betonite Plug- 5.5' Total Pipe- [illegible].8' Soft. Water Level- 6.2'
Stick Up- -.3'@ Top [illegible]op +above -below water- -12.9'
Air Pump Developed- no [illegible]low-
Location 24' From "40 MPH" sign, & 35' from bush.

Gerard Adams

GAdams

ADAMS ENGINEERING
Gerard Adams
RD #1, Box #403
Underhill, Vt. 05489
899-4945

January 15,1986

Mr. John Amadon
Waste Management Section
Agency of Enviornmental Conservation
Montpelier, Vt. 05602

The following are the boring logs for the work performed on the Alling property (Williston) conducted under the direction of John Strunk:(Soil data from 0-5' from pulled augers, remainder from auger taillings.)

01/06/86 AL #12

0-5' Sandy fill over brown & gray loamy sand.
5-15' Cleaner medium sand.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted Section: 10' Solid Riser: 5' Bags Sand: 0.8 .49 mm
Sand Pack To below grade:-2.5' Betonite Plug:15# of 1/2 NS at 2.5
Total Pipe: 15.3' Water Level: 6.4' 1/14/86 By bobbing
Stick Up: 2.3' Top slot +above -below water:+0.6'
Air surge/pump Developed: Yes Clean Flow: Good-Orange color

AL #13 Bearing Specialty

0-2' Fill Black top ectc.
2-3' White/gray medium sand.
3-4' Well oxidized trace loam medium sand.
4-4.5' Tan medium sand.
4.5-18' Brown medium Sand

MONITOR WELL

2" Factory threaded & Slotted (.020") PVC-Deitrich.

Slotted section: 10' Solid Riser: 9' Bags Sand:0.2 .49 mm
Sand Pack To below grade:-5.7' Betonite Plug:15# of 1/2 NS at 5.7
Total Pipe: 19.1'@ Water Level: 10.2' 1/14/86 By bobbing
Stick Up: 2.8' Top slot +above -below water:+0.6'
Air surge/pump Developed: Yes Clean Flow: Good

AL #14 Sealtest.

0-5' Well oxidized orange medium sand over brown medium sand.
5-19' Brown medium sand.

MONITOR WELL

2" Factory threaded & Slotted (.020") PVC-Deitrich.

Slotted section: 10' Solid Riser: 7' Bags Sand:0 .49 mm
Sand Pack To below grade:- ' Betonite Plug:15# of 3/8 NS at 5.5
Total Pipe: 17.2' Water Level: 8.3' 1/14/86 By bobbing
Stick Up: 1.28' Top slot +above -below water: +0.6'
Air surge/pump Developed: Yes Clean Flow: Good

1/7/86 AL #15 RSL Distributors.

0-5' Mottled brown medium sand & very silty medium sand.
5-19' Brown medium sand.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section: 10' Solid Riser: 10' Bags Sand: 0 .49 mm
Sand Pack To below grade:- ' Betonite Plug:15# of 3/8 NS at 4.5
Total Pipe: 20.0' Water Level: 10.7' 1/14/86 By bobbing
Stick Up: 3.5'' Top slot +above -below water: ;0.2'
Air surge/pump Developed: Yes Clean Flow: Good

AL #16 Fire hydrant in trees.
0-5' Brown loamy medium sand varies to quite loamy.
5-20' Brown medium sand. Traces of fine sand.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section: 10' Solid Riser: 10' Bags Sand: 0 .49 mm
Sand Pack To below grade:- ' Betonite Plug:15# of 3/8 NS at 4.5
Total Pipe: 17.0' Water Level: 7.6' 1/14/86 By bobbing
Stick Up: 1.68' Top slot +above -below water: +0.1'
Air surge/pump Developed: Yes Clean Flow: Good

1/8/86 AL #17 Lot #7
0-5' Brown loamy medium sand over coarse sand.
5-18' Brown medium & coarse sand.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section: 10' Solid Riser: 10' Bags Sand: 0 .49 mm
Sand Pack To below grade:- ' Betonite Plug:25# of 3/8 NS at 3'
Total Pipe: 14.6' Water Level: 5.5' 1/14/86 By bobbing
Stick Up: 0.3' Top slot +above -below water: +0.4'
Air surge/pump Developed: Yes Clean Flow: Good

AL #18 S. Brownell Rd.
0-5' Brown medium sand becoming medium & fine sand.
5-17' Brown medium sand.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section: 10' Solid Riser: 5' Bags Sand: .49 mm
Sand Pack To below grade:- ' Betonite Plug:25# of 3/8 NS at 3'
Total Pipe: 13.93' Water Level: 4.6' 1/14/86 By bobbing
Stick Up: .1' Top slot +above -below water: +0.2'
Air surge/pump Developed: Yes Clean Flow: Good

AL #19 Obrien Farm
0-5' Brown medium & some fine sand.
5-15' "

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

Slotted section: 10' Solid Riser: 5' Bags Sand: 0 .49 mm
Sand Pack To below grade:- ' Betonite Plug:25# of 3/8 NS at 2''
Total Pipe: 15.35' Water Level: 5.9' 1/14/86 By bobbing
Stick Up: 2.44' Top slot +above -below water: +0.1'
Air surge/pump Developed: Yes Clean Flow: Good

/86 AL #20 Lot #13
0-5' Light brown medium & fine sand.
5-20' Brown medium & fine sand.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

lotted section: 10' Solid Riser: 10' Bags Sand: 0 .49 mm
and Pack To below grade:- ' Betonite Plug:25# of 3/8 NS at 4.7
otal Pipe: 18.25' Water Level: 8.9' 1/14/86 By bobbing
tick Up: .2' Top slot +above -below water: +0.15'
ir surge/pump Developed: Yes Clean Flow: Good

L #21 Lot #12
0-15' Brown loamy fine sand.

MONITOR WELL

2" Factory threaded & Slotted (.010") PVC-Deitrich.

lotted section: 10' Solid Riser: 5' Bags Sand: 0 .49 mm
and Pack To below grade:- ' Betonite Plug:25# of 3/8 NS at 2'
otal Pipe: 12.6' Water Level: 3.9' 1/14/86 By bobbing
tick Up: 0.3' Top slot +above -below water: +0.8'
ir surge/pump Developed: Yes Clean Flow: Good

Gerard

erard Adams

Boring Number: DIS-1

1-2

SOIL BORING LOG

SPECIALTY DRILLING & INVESTIGATION

P.O. BOX 64709
BURLINGTON, VERMONT
05406-4709
TEL: 802-658-0820
FAX: 802-860-1014

PROJECT NAME: VDEC/ALLING

SDI PROJECT NUMBER: 00925

PROJECT LOCATION: WILLISTON, VERMONT

LATTITUDE: 44°27'9.9" LONGITUDE: 73°7'10.6"
300'

SHEET 1 OF 2

Boring Location: 20' south of BE-6

Date Started: 7/19/00 Rig Hours Meter Start: 1078.3 Time: 8:30 AM

Foreman: Chris Aldrich H&N Staff: Chris Aldrich and Steven LaRosa, then Brian Beaudoin

Date Completed: 7/19/00 Rig Hours Meter End: 1083.4 Time: 4:40 PM

Sampling Method:
Split Spoon: ☐ Direct Push: ☒ Cuttings: ☐
Size: 24"
Hammer: 140 lb Solinst 660 sample point
Fall: 30"

Collected lab samples at 32 and 36', field GC samples all others.

No.	Rec. (ft)	Depth (ft)	Blows	Sample Description	Strata Change		Field Testing PID
				Water below top of pipe = 4.16' at MW #BE-6 Went to 5' for first sample	Field GC	Lab	Recovery rate Poor → excellent
1	–	6'	–	Sample collected at 9:38, silty, gray	X		X
2	–	8'	–	Sample collected at 10:05, silty	X		X
3	–	10'	–	Sample collected at 10:14, light silt	X		X
4	–	12'	–	Sample collected at 10:28, iron coloration	X		X
5	–	14'	–	Sample collected at 10:40, clear	X		X
6	–	16'	–	Sample collected at 10:50, lightly cloudy	X		X
7	–	18'	–	Sample collected at 11:10, clear	X		X
8	–	20'	–	Sample collected at 11:30, clear	X		X
9	–	22'	–	Sample collected at 12:20, clear	X		X

WELL CONSTRUCTION DETAILS

PVC Screen: _____" diameter _____" slot _____' Sections Set from: _____' to _____'
PVC Riser: _____" diameter _____' sections Set from: _____' to _____ ' (_____' stick up)
Filter Sock: _____'
Sand Pack: _____' to _____' (_____ bags)
Bentonite seal: _____' to _____' (_____bags)
Grout Seal: _____' to _____' (_____ bags)
Well Finish: _____ flush; _____ Guard

Boring Number: DIS-1

SOIL BORING LOG

SPECIALTY DRILLING & INVESTIGATION

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BURLINGTON, VERMONT
05406-4709
TEL: 802-658-0820
FAX: 802-860-1014

PROJECT NAME: VDEC/ALLING

SDI PROJECT NUMBER: 00925

PROJECT LOCATION: WILLISTON, VERMONT

LATTITUDE: 44°27'9.9" LONGITUDE: 73°7'10.6"
300'

SHEET 2 OF 2

Boring Location: 20' south of BE-6

Date Started: 7/19/00 Rig Hours Meter Start: 1078.3 Time: 8:30 AM

Foreman: Chris Aldrich H&N Staff: Chris Aldrich and Steven LaRosa, then Brian Beaudoin

Date Completed: 7/19/00 Rig Hours Meter End: 1083.4 Time: 4:40 PM

Sampling Method:
Split Spoon: ☐ Direct Push: ☒ Cuttings: ☐
Size: 24"
Hammer: 140 lb Solinst 660 sample point
Fall: 30"

Collected lab samples at 32 and 36', field GC samples all others.

No.	Rec. (ft)	Depth (ft)	Blows	Sample Description	Strata Change		Field Testing PID
					Field GC	Lab	Recovery rate Poor → excellent
10	–	24'	–	Sample collected at 1:08 (duplicate), clear	X		X
11	–	26'	–	Sample collected at 1:22, clear	X		X
12	–	28'	–	Sample collected at 1:34, clear	X		X
13	–	30'	–	Sample collected at 1:53, cloudy	X	X	X
14	–	32'	–	Sample collected at 2:15, clear	X		X
15	–	34'	–	Sample collected at 2:35, clear	X	X	X
16	–	36'	–	Sample collected at 2:58, clear	X	X	X
17	–	38'	–	Sample collected at 3:50, silty	X	X	X
				End of sample collection. Bentonite grout to ground surface.			

WELL CONSTRUCTION DETAILS

PVC Screen: _____" diameter _____" slot _____' Sections Set from: _____' to _____'
PVC Riser: _____" diameter _____' sections Set from: _____' to _____ '(_____' stick up)
Filter Sock: _____'
Sand Pack: _____' to _____' (_____ bags)
Bentonite seal: _____' to _____' (_____bags)
Grout Seal: _____' to _____' (_____ bags)
Well Finish: _____ flush; _____ Guard

Boring Number: DIS-2

SOIL BORING LOG

SPECIALTY DRILLING & INVESTIGATION
P.O. BOX 64709
BURLINGTON, VERMONT
05406-4709
TEL: 802-658-0820
FAX: 802-860-1014

PROJECT NAME: VDEC/ALLING

SDI PROJECT NUMBER: 00925

PROJECT LOCATION: WILLISTON, VERMONT

LATTITUDE: 44°27'9.2" LONGITUDE: 73°07'13" 400'

SHEET 1 OF 2

Boring Location: Parking Lot 50' west of Garage/Grass Cuts for Less

Date Started: 7/20/00 Rig Hours Meter Start: 1083.9 Time: 7:30 AM

Foreman: Chris Aldrich H&N Staff: Chris Aldrich and Peter Dufault

Date Completed: 7/20/00 Rig Hours Meter End: 1090.00 Time: 3:00 PM

Sampling Method:
Split Spoon: ☐ Direct Push: ☒ Cuttings: ☐
Size: 24"
Hammer: 140 lb Solinst 660 sample point
Fall: 30"

Trip and field blanks collected for field GC.

No.	Rec. (ft)	Depth (ft)	Blows	Sample Description	Strata Change		Field Testing PID
					Field GC	Lab	Recovery rate Poor → good
1	–	6'	–	Sample collected at 7:50, clear	X		X
2	–	8'	–	Sample collected at 8:04, clear	X		X
3	–	10'	–	Sample collected at 8:20, clear	X		X
4	–	12'	–	Sample collected at 8:33, clear	X		X
5	–	14'	–	Sample collected at 8:44, clear	X		X
6	–	16'	–	Sample collected at 8:58, clear	X		X
7	–	18'	–	Sample collected at 9:17, clear	X		X
8	–	20'	–	Sample collected at 9:45, clear	X		X
–	–	22'	–	Pump failure, tube filled with silt.	–	–	–
9	–	24'	–	Sample collected, 11:24 (duplicate), cloudy	X		X

WELL CONSTRUCTION DETAILS

PVC Screen: _____" diameter _____" slot _____' Sections Set from: _____' to _____'
PVC Riser: _____" diameter _____' sections Set from: _____' to _____ ' (_____' stick up)
Filter Sock: _____'
Sand Pack: _____' to _____' (_____ bags)
Bentonite seal: _____' to _____' (_____bags)
Grout Seal: _____' to _____'. (_____ bags)
Well Finish: _____ flush; _____ Guard

Boring Number: DIS-2

SOIL BORING LOG

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BURLINGTON, VERMONT
05406-4709
TEL: 802-658-0820
FAX: 802-860-1014

PROJECT NAME: VDEC/ALLING

SDI PROJECT NUMBER: 00925

PROJECT LOCATION: WILLISTON, VERMONT

LATTITUDE: 44°27'9.9" LONGITUDE: 73°7'10.6"
300'

SHEET 2 OF 2

Boring Location: Parking Lot 50' west of Garage/Grass Cuts for Less

Date Started: 7/20/00 Rig Hours Meter Start: 1078.3 Time: 8:30 AM

Foreman: Chris Aldrich H&N Staff: Chris Aldrich and Steven LaRosa, then Brian Beaudoin

Date Completed: 7/20/00 Rig Hours Meter End: 1090.0 Time: 3:00 PM

Sampling Method:
Split Spoon: ☐ Direct Push: ☒ Cuttings: ☐
Size: 24"
Hammer: 140 lb Solinst 660 sample point
Fall: 30"

Trip and field blanks collected for field GC.

No.	Rec. (ft)	Depth (ft)	Blows	Sample Description	Strata Change		Field Testing PID
					Field GC	Lab	Recovery rate Poor → excellent
11	–	26'		No sample			
12	–	28'		Sample collected at 1:55, cloudy, fracked with N_2.			X
13	–	30'		No sample, clogged screen. Attempted fracking with N_2. No recovery.			
14	–	30-33'		Macro Core® soil sample. Saturated gray, very fine silt.			
				End of boring. Bentonite grout to ground surface.			

WELL CONSTRUCTION DETAILS

PVC Screen: _____" diameter _____" slot _____' Sections Set from: _____' to _____'
PVC Riser: _____" diameter _____' sections Set from: _____' to _____ ' (_____' stick up)
Filter Sock: _____'
Sand Pack: _____' to _____' (_____ bags)
Bentonite seal: _____' to _____' (_____bags)
Grout Seal: _____' to _____' (_____ bags)
Well Finish: _____ flush; _____ Guard

SOIL BORING LOG
Inchcape Testing Services

PROJECT NAME: Alling Ind. Park
PROJECT NUMBER: 95088
CLIENT: VT. DEC. HMD
LOCATION: Williston. VT.
DATE COMPLETED: 16 May 1996

Boring I.D.: GP-1
TOTAL DEPTH: 34
DRILLING METHOD: Geo-Probe
DRILLING COMPANY: Twin State
LOGGED BY: RGF

SAMPLE	PID	LITHOLOGY	USCS	DESCRIPTION
0'-4'	BKGD		SM	Brown/Grey, fine silty SAND Horizontal bedding and oxidized layer near surface ▼ Water level at time of drilling
4'-8'	BKGD			Alternating Red/Brown and Grey fine and very fine SAND, little organic Sample tube shattered at 4'-8' and 8'-12'
8'-12'	BKGD			Red/Brown/Gray, fine and very fine SAND,
12'-16'	BKGD		SP	Gray, fine SAND Sampled without tube insert
16'-20'	BKGD			Gray, Medium to fine SAND
			SM	Sampled with 2' sampler (1" diameter)
24'-28'	BKGD			Grey, fine and very fine SAND, some Silt some Mica minerals
30'-32'	BKGD			Slurry very fine silty SAND horizontal bedding
32'-34'	BKGD		CL	Gray, sticky CLAY

0 5 10 15 20 25 30 35 40

SOIL BORING LOG
Inchcape Testing Services

PROJECT NAME: Alling Ind. Park
PROJECT NUMBER: 95088
CLIENT: VT. DEC. HMD
LOCATION: Williston. VT.
DATE COMPLETED: 16 May 1996

Boring I.D.: GP-2
TOTAL DEPTH: 36
DRILLING METHOD: Geo-Probe
DRILLING COMPANY: Twin State
LOGGED BY: RGF

SAMPLE	PID	LITHOLOGY	USCS	DESCRIPTION
0'-4'	BKGD		SP	4' of top soil Red/Brown, fine SAND Horizontal bedding of gray and red SAND
4'-8'	BKGD		SP	▼ Water level at time of drilling Alternating bedding of red/brown fine to medium SAND and brown/gray, fine and very fine SAND, little Silt
8'-12'	BKGD		SP	Sample tube shattered at 8'-12' Brown/Gray, fine and medium SAND, Sampled with 2' sampler (1" diameter)
12'-14'	BKGD		SP	Gray, fine to medium SAND oxidized layer (1.5") at 13.5'
			SW	
18'-20'			SW	Gray fine soupy SAND, with bedding
			SW	
24'-26'	BKGD		SW	Gray fine soupy SAND, with bedding
			SW	
30'-32'	<BKGD		SW	
32'-34'	<BKGD		SW	Gray fine soupy SAND, with bedding
34'-36'			SM	Gray, fine and very fine SAND some Silt

0 5 10 15 20 25 30 35 40

SOIL BORING LOG
Inchcape Testing Services

PROJECT NAME: Alling Ind. Park
PROJECT NUMBER: 95088
CLIENT: VT. DEC HMD
LOCATION: Williston, VT.
DATE COMPLETED: 17 May 1996

Boring I.D.: GP-3
TOTAL DEPTH: 35
DRILLING METHOD: Geo-Probe
DRILLING COMPANY: Twin State
LOGGED BY: RGF

	SAMPLE	PID	LITHOLOGY	USCS	DESCRIPTION
0					
5	4'-8'				Collected water table sample
10					
15					
20					
25					
30					
35	34'-35'				Collected deep groundwater sample
40					

SOIL BORING LOG
Inchcape Testing Services

PROJECT NAME: Alling Ind. Park
PROJECT NUMBER: 95088
CLIENT: VT. DEC HMD
LOCATION: Williston, VT.
DATE COMPLETED: 17 May 1996

Boring I.D.: GP-4
TOTAL DEPTH: 42
DRILLING METHOD: Geo-Probe
DRILLING COMPANY: Twin State
LOGGED BY: RGF

SAMPLE	PID	LITHOLOGY	USCS	DESCRIPTION
4'-8'	<BKGD		SP	Alternating layers of grey fine, medium and coarse SAND with oxidized layers .1-14
20'-24'	0.9		SW	Grey fine SAND
34'-36'			SM	Grey fine and very fine SAND, trace Silt
40'-42'			SM	Grey fine and very fine Sand, trace Silt

0 5 10 15 20 25 30 35 40

SOIL BORING LOG
Inchcape Testing Services

PROJECT NAME: Alling Ind. Park
PROJECT NUMBER: 95088
CLIENT: VT. DEC. HMD
LOCATION: Williston. VT.
DATE COMPLETED: 17 May 1996

Boring I.D.: GP-6
TOTAL DEPTH: 38.5
DRILLING METHOD: Geo-Probe
DRILLING COMPANY: Twin State
LOGGED BY: RGF

SAMPLE	PID	LITHOLOGY	USCS	DESCRIPTION
			SP	▼ Approximate Water level at time of drilling Alternating layers of gray fine, medium and coarse SAND with oxidized layers
4'-8'	<BKGD			
8'-12'	<BKGD			Grey medium to fine SAND, alternating oxidized layers
12'-16'	2.4			
			SW	Increase resistance with probe at 15 feet Grey fine SAND
20'-22'	5.8			Grey fine SAND, with horizontal bedding
26'-28'	28			Grey fine SAND, with slightly dipping bedding
32'-34'	8.8		SM	Gray fine and very fine SAND
36'-38.5'			CL	Gray sticky CLAY

0 5 10 15 20 25 30 35 40

SOIL BORING LOG
Inchcape Testing Services

PROJECT NAME: Alling Ind. Park
PROJECT NUMBER: 95088
CLIENT: VT. DEC. HMD
LOCATION: Williston, VT.
DATE COMPLETED: 17 May 1996

Boring I.D.: GP-5
TOTAL DEPTH: 24
DRILLING METHOD: Geo-Probe
DRILLING COMPANY: Twin State
LOGGED BY: RGF

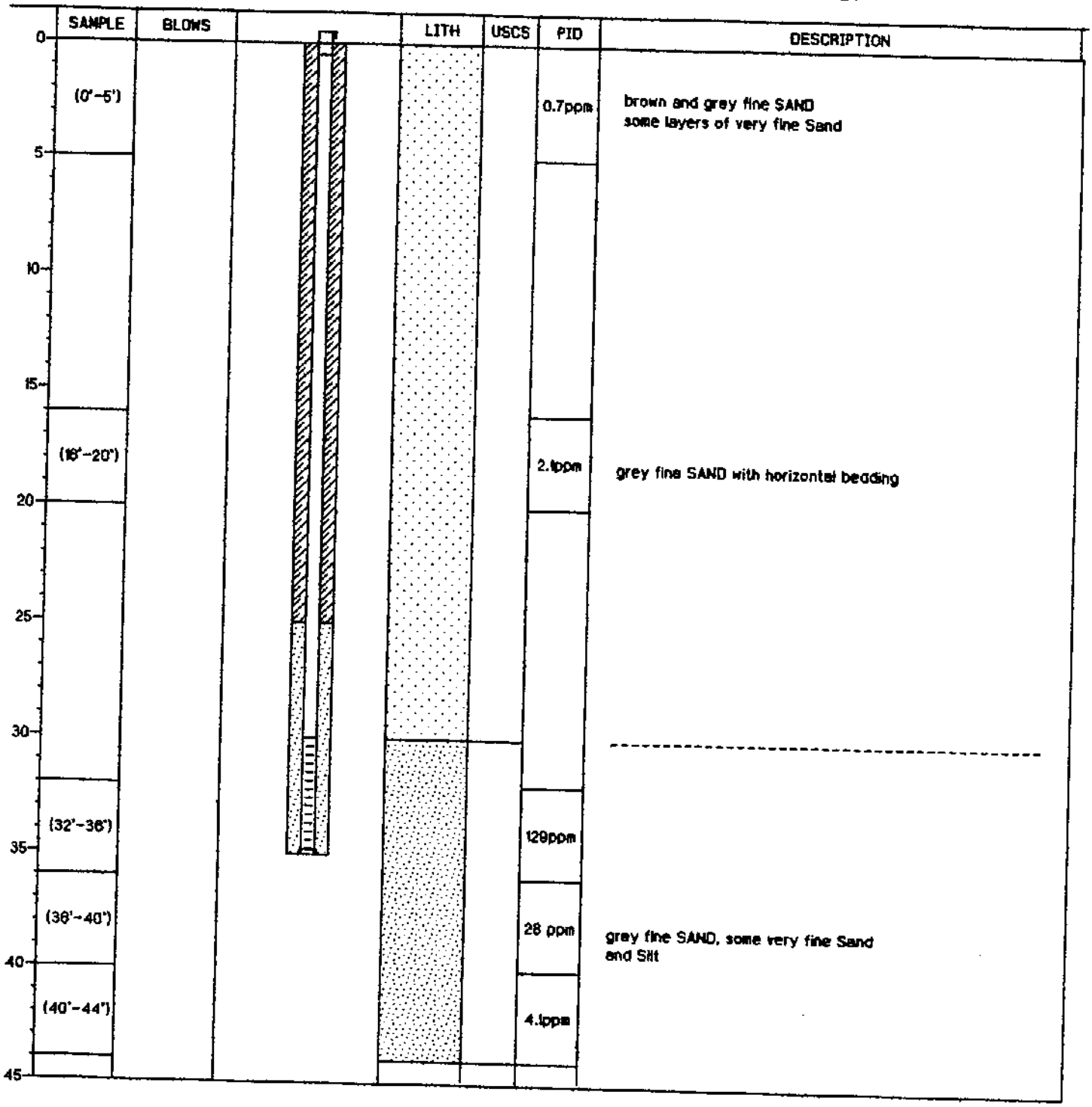
SAMPLE	PID	LITHOLOGY	USCS	DESCRIPTION
0'-4'	0.6		SP	Top 14" brown fine to medium SAND with 3" layers of black/brown SAND, and red/brown SAND Bottom 14" alternating layers of fine gray SAND and fine to medium gray SAND, Soils are wet. ▼ approximate Water level at time of drilling
4'-8'	0.4			Top 2' fine to medium brown SAND and grades to fine brown SAND Bottom 14" alternating layers on brown/grey medium to fine and fine to very fine SAND. Layer of yellow material and white material
8'-12'			SP	Sampled without sleeve at 8'-12' Fine to medium SAND, some Silt
12'-16'	< 0			Fine to medium SAND, some Silt
16'-20'	< 0		SW	Gray fine SAND, little Silt, 2 oxidized layers
20'-24'	<0			Gray, fine Soupy SAND

0 5 10 15 20 25 30 35 40

MONITORING WELL LOG

PROJECT NAME: AIP-SA
PROJECT NUMBER: 95088
CLIENT: DEC WMD
LOCATION: Williston, VT
DATE COMPLETED: 1 August 1996

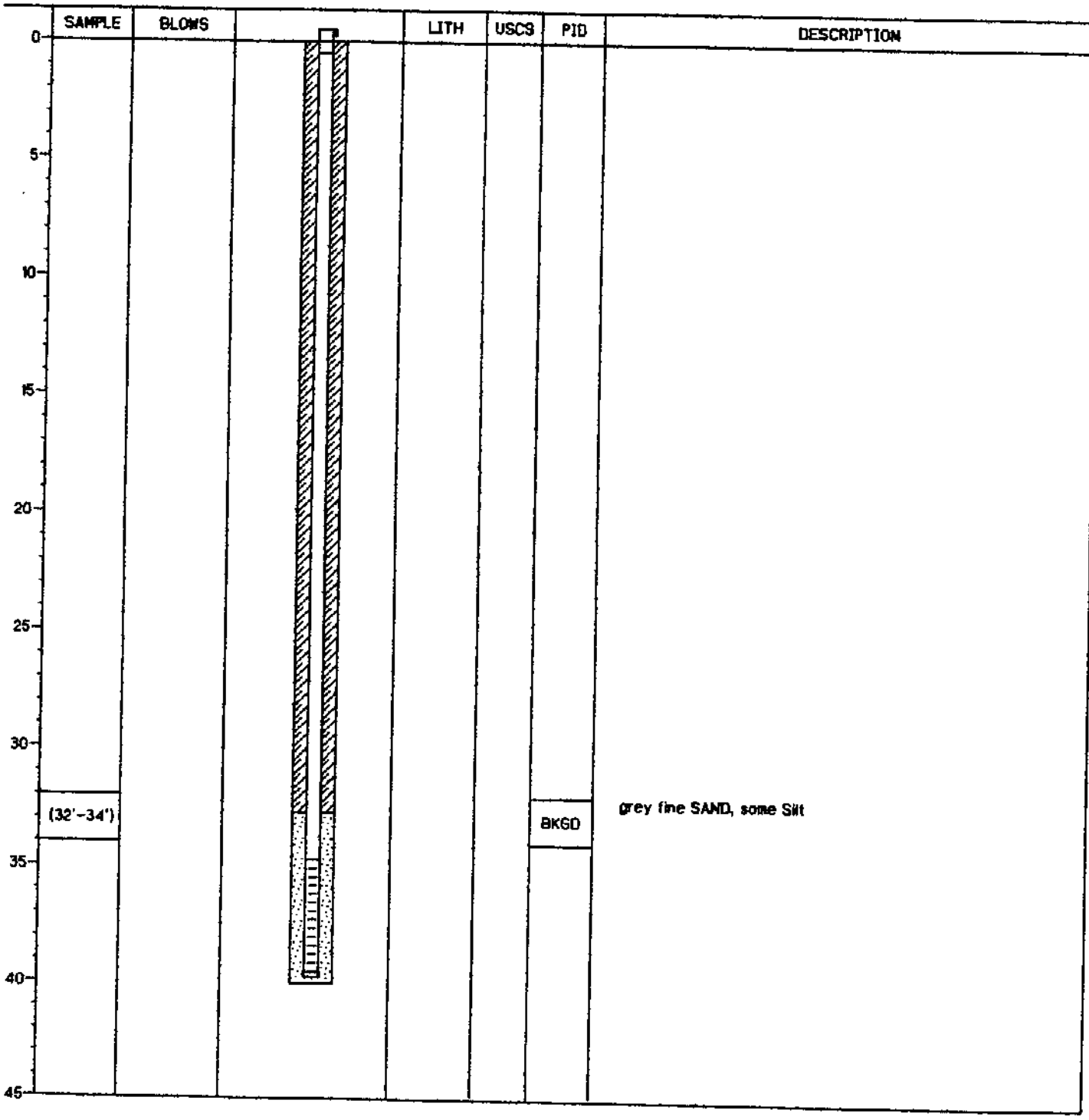
WELL I.D.: RB-1
TOTAL DEPTH: 44
DRILLING METHOD: Geo-Probe
DRILLING COMPANY: Adams Eng.
LOGGED BY: RGF



MONITORING WELL LOG

PROJECT NAME: AIP-SA
PROJECT NUMBER: 95088
CLIENT: DEC WMD
LOCATION: Williston, VT
DATE COMPLETED: 1 August 1996

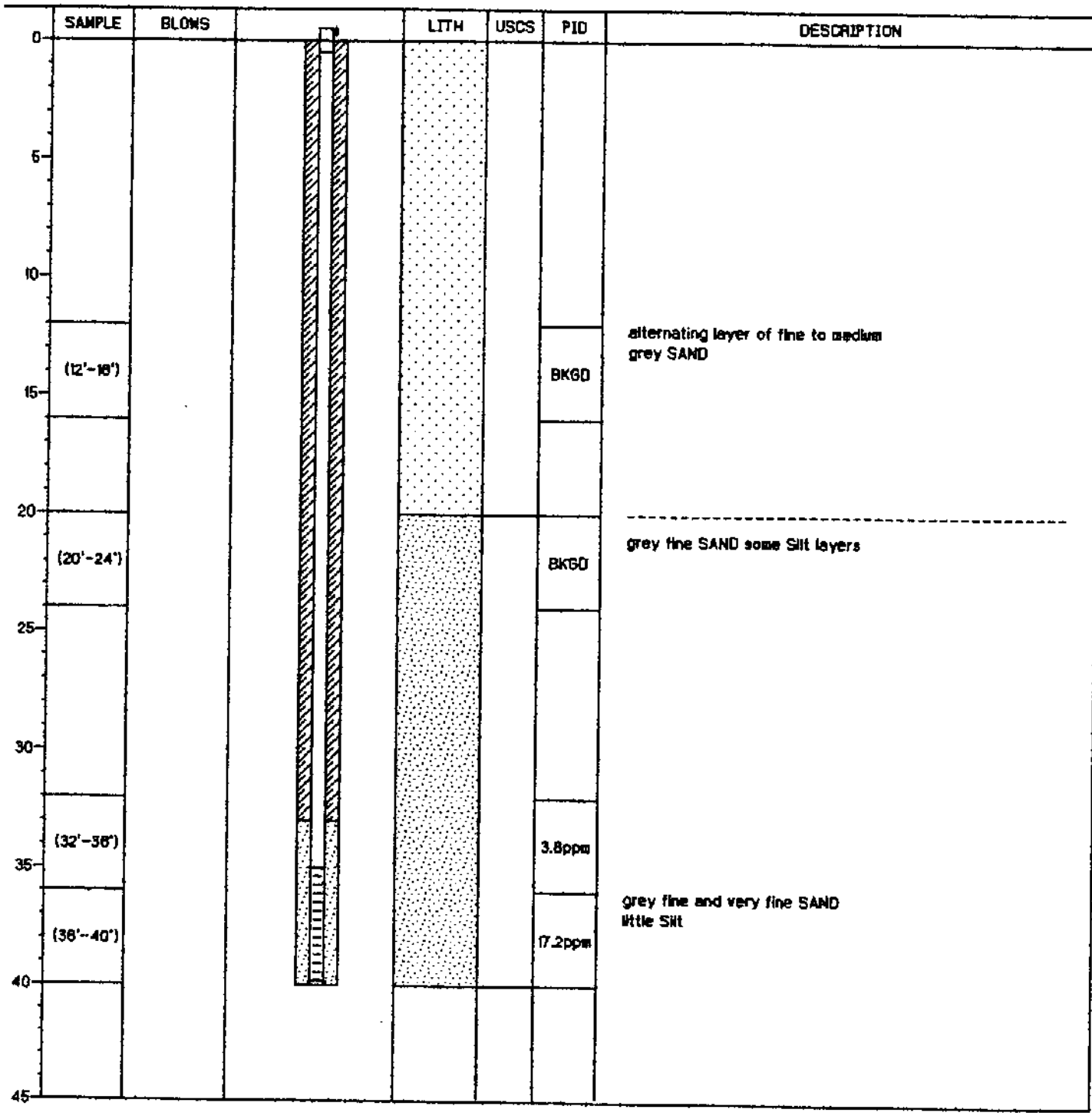
WELL I.D.: RB-2
TOTAL DEPTH: 40
DRILLING METHOD: Geo-Probe
DRILLING COMPANY: Adams Eng.
LOGGED BY: RGF



MONITORING WELL LOG

PROJECT NAME: AIP-SA
PROJECT NUMBER: 95088
CLIENT: DEC WMD
LOCATION: Williston, VT
DATE COMPLETED: 2 August 1996

WELL I.D.: RB-3
TOTAL DEPTH: 40
DRILLING METHOD: Geo-Probe
DRILLING COMPANY: Adams Eng.
LOGGED BY: RGF



APPENDIX B

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-01
FILE NO. 80036
Sheet No. 1 of 3
Checked by: JF
Date Start 8/25/10
Date End 8/25/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
1		S-1	53	0.0-5.0			<1	S-1: 2" Dark brown, medium-fine sand, some fine gravel, some organics. 29" Brown, fine sand, fades to 10" Red/brown fine sand. 6" Very fine-fine sand. 6" Reddish-brown, medium-fine sand, little coarse sand. Sample collected at 0.5 - 1'. Sample collected at 3 - 3.5'.				
2												
3												
4												
5												
6		S-2	52	5.0-10.0			<1	S-2: 20" Coarse-medium sand, brown, moist. 2" Very fine sand, some fines, gray/brown, moist. 8" Fine sand, brown with dark brown lens at 4-inches (2-inch lens), wet. 5" Coarse-medium sand, brown, wet. 8" Fine sand, brown, wet. 9" Coarse-fine sand, brown, wet. Sample collected at 8 - 8.5'.		▽		
7												
8												
9												
10												
11		S-3	60	10.0-15.0			<1	S-3: 24" Fine sand, little medium-coarse sand, light brown. 18" Medium-fine sand, little coarse sand. 18" Gray, fine-medium sand. Sample collected at 12 - 12.5'.				
12												
13												
14												
15												
16		S-4	53	15.0-20.0			<1	S-4: 6" 6" Gray, Coarse-fine sand. 4" Medium-fine sand, gray. 36" Fine sand, gray. 1" Very fine sand with fines, gray. Sample collected at 17 - 17.5'.				
17												
18												
19												
20												
21		S-5	52	20.0-25.0			<1	S-5: 52" Gray, fine-very fine sand. Sample collected at 22 - 22.5'.				
22												

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/25/10		7 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-01
FILE NO. 80036
Sheet No. 2 of 3
Checked by: JF
Date Start 8/25/10
Date End 8/25/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
24								No samples collected between 25 to 40 feet below ground surface (bgs) due to running sands.				
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
41		S-6	60	40.0-45.0			<1	S-6: 60" Very fine sand, gray, saturated. Sample collected at 44.5 - 45'.				
42												
43												
44												
45												
		S-7	50	45.0-50.0				S-7: 11" Silty clay, gray, loose.				

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/25/10		7 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-01
FILE NO. 80036
Sheet No. 3 of 3
Checked by: JF
Date Start 8/25/10
Date End 8/25/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
								39" Clay, gray, hard from 11" to 28".				
47												
48												
49												
50												
51								End of Boring at 50 ft. bgs. Following completion of SB-01, Nobis attempted collection of samples between 25-40 feet bgs on 8/27/10. No recovery.				
52												
53												
54												
55												
56												
57												
58												
59												
60												
61												
62												
63												
64												
65												
66												
67												
68												

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/25/10		7 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-02
FILE NO. 80036
Sheet No. 1 of 2
Checked by: JF
Date Start 8/26/10
Date End 8/26/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
1		S-1	48	0.0-5.0			1.1	S-1: 3" Topsoil, dark brown, dry-slightly moist. 9" Dark brown, fine sand, trace fines and medium sand, organics, moist. 10" Dark brown, fine sand, little organics. Defined transition. 7" Rust colored fine sand (fading to tan at bottom of 7"). 19" Tan, fine sand, trace medium sand. Sample collected at 0.5 - 1'. Sample collected at 2 - 2.5'.				1
2												
3												
4												
5												
6		S-2	47	5.0-10.0			<1	S-2: 5" Light brown sand little dark brown/black and rust, fine sand, wet. 10" Fine-medium well graded sand, less densly packed, saturated (water bearing zone). 12" Dense, fine sand, light brown, less dense (loose) 8" Fine-medium well-graded sand (water zone) 4" Dense, fine sand. 8" Fine-medium, water bearing sand, medium dense. Sample collected at 7 - 7.5'.				
7												
8												
9												
10												
11		S-3	35	10.0-15.0			<1	S-3: 7" Fine-medium sand, brown, saturated, less density. 11" Medium sand, brown/orange, less density. 15" Fine sand, more density. Sample collected at 12.5 - 13'.				
12												
13												
14												
15												
16		S-4	30	15.0-20.0			<1	S-4: 30" Brownnish gray, fine sand, medium density, saturated. Sample collected at 17 - 17.5'.				
17												
18												
19												
20												
21		S-5	26	20.0-25.0			<1	S-5: 26" Gray, fine sand, slight increase in density, saturated. Sample collected at 22.5 - 23.3'				
22												

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/26/10		5 feet		

REMARKS:
1) 1.1 ppmv PID reading measured from 3" topsoil.

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-02
FILE NO. 80036
Sheet No. 2 of 2
Checked by: JF
Date Start 8/26/10
Date End 8/26/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
24												
25												
26		S-6	22	25.0-30.0			<1	S-6: 22" Gray, fine sand, slight increase in density, saturated. Sample collected at 29.5 - 30'.				
27												
28												
29												
30												
31		S-7	27	30.0-35.0			10.5	S-7: 27" Gray, fine sand, slight increase in density, saturated. Sample collected at 30 - 30.5'				
32							2.4					
33							1.7					
34							1.2					
35							<1					
36		S-8	17	35.0-40.0			20.8	S-8: 8" Fine sand, gray, wet. 9" Very fine sand, with silt, gray, wet. Performed field test for presence of DNAPL, result negative. Sample collected at 37.5 - 38'.				
37							88.8					
38							135.0					
39							27.8					
40							24.2					
41		S-9	16	40.0-45.0				S-9: 4" Silt with trace of very fine sand, gray. 12" Gray Clay.				
42												
43												
44												
45												

GRANULAR SOILS (N-Value)

0 to 4 - Very Loose
5 to 10 - Loose
10 to 30 - Medium Dense
31 to 50 - Dense
Over 50 - Very Dense

COHESIVE SOILS (N-Value)

0 to 2 - Very Soft
3 to 4 - Soft
5 to 8 - Medium Stiff
9 to 15 - Stiff
15 to 30 - Very Stiff
Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/26/10		5 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-03
FILE NO. 80036
Sheet No. 1 of 2
Checked by: JF
Date Start 8/26/10
Date End 8/26/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
1		S-1	33	0.0-5.0			<1	S-1: 5" Dark brown topsoil, organics, dry. 7" Fine sand, some organics, trace fines, dark brown, dry. 12" Fine sand, trace fines, light brown, dry, medium density. 4" Dark brown, fine sand fines, increasing density, dry. 5" Light brown fine sand, trace fines, dry. Sample collected at 0.5 - 1'. Sample collected at 3 - 3.5'.				
2												
3												
4												
5												
6		S-2	34	5.0-10.0			<1	S-2: 11" Fine sand, medium density, dark brown, trace organics, wet. 7" Brown, fine sand, trace medium sand, trace fine gravel, trace organics. 7" Dark brown, fine sand, little fines, fine-coarse sand, increasing density. 6" Light brown, fine sand with fines, trace coarse sand. 3" Dark brown/black, fine-very fine sand, trace fine gravel. Sample collected at 7 - 7.5'.				
7												
8												
9												
10												
11		S-3	29	10.0-15.0			<1	S-3: 5" Dark brown, fine-medium sand. 4" Medium-coarse sand, trace fine gravel, rust colored, decreasing density, wet. 20" Fine-medium sand, medium density, gray, wet. Sample collected at 12 - 12.5'.				
12												
13												
14												
15												
16		S-4	33	15.0-20.0			<1	S-4: 16" Fine-very fine sand, light brown/brown/rust. 17" Fine-very fine sand, wet, gray, increasing density. Sample collected at 17 - 17.5'.				
17												
18												
19												
20												
21		S-5	27	20.0-25.0			<1	S-5: 27" Fine-very fine sand with little fines, gray. Sample collected at 22 - 22.5'.				
22												

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/26/10		5 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-03
FILE NO. 80036
Sheet No. 2 of 2
Checked by: JF
Date Start 8/26/10
Date End 8/26/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
24												
25												
26		S-6		25.0-30.0			2.3	S-6: Fine-very fine sand with some fines, gray. Sample collected at 25 - 25.5'.				
27							2.2					
28							1.7					
29							1.9					
30							2.2					
31		S-7	25	30.0-35.0			7.3	S-7: 25" Fine-very fine sand with fines, gray. Sample collected at 34.5 - 35'.				
32							6.8					
33							9.8					
34							17.8					
35							27					
36		S-8	23				41.1	S-8: 6" Fine grading to very fine sand with fines, gray, wet. 17" Fines, some very fine sand, gray, increasing fines with depth, increasing density. Sample collected at 36.5 - 37'.				
37							71.8					
38							17.9					
39							6.1					
40							5					
41		S-9	60	40.0-45.0			<1	S-9: 60" Gray clay.				
42												
43												
44												
45												
								End of Boring at 45 ft. bgs.				

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/26/10		5 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-04
FILE NO. 80036
Sheet No. 1 of 2
Checked by: JF
Date Start 8/26/10
Date End 8/26/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
1		S-1	42	0.0-5.0			<1	S-1: 10" Black, coarse-fine sand, medium-fine gravel, asphalt pieces. 4" Light brown fine sand, little fines. 3" Dark black with organics, very fine sand with fines. 8" Rust/orange colored fine-very fine sand with trace coarse sand fine gravel. 9" Fine-very fine light brown sand. 7" Fine-very fine brown sand, decreasing density, moist. Sample collected at 0.5 - 1'. Sample collected at 3.5 - 4'.				
2												
3												
4												
5												
6		S-2	33	5.0-10.0			<1	S-2: 4" Tan, very fine sand, decreasing fines, plastic, light brown/rust, wet. 12" Gray band at 0.5", tan very fine sand, decreasing fines, plastic, light brown/rust, 0.5" gray, 14" banded 1/4-1" bands with slight plastic. Sample collected at 7 - 7.5'.				
7												
8												
9												
10												
11		S-3	36	10.0-15.0			<1	S-3: 27" Brown/rust, fine-very fine sand, some fines, wet, (banded) 9" Gray, fine sand, wet. Sample collected at 12 - 12.5'.				
12												
13												
14												
15												
16		S-4	47	15.0-20.0			<1	S-4: 47" Fine sand, brown, gray at 37". Sample collected at 17 - 17.5'.				
17												
18												
19												
20												
21		S-5	120	20.0-30.0			17	S-5: 120" Very fine/fine sand, gray. Sample collected at 24.5 - 25'.				
22												

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/26/10		5 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-04
FILE NO. 80036
Sheet No. 2 of 2
Checked by: JF
Date Start 8/26/10
Date End 8/26/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
24												
25												
26												
27												
28												
29												
30												
31				30.0-30.0				No recovery from 30 to 40 feet bgs, due to running sands.				
32												
33												
34												
35												
36												
37												
38												
39												
40												
41		S-6	7	40.0-45.0			5.4	S-6: 5" Very fine sand, slightly plastic. 2" Gray clay. Sample collected at 40.5 - 41'.				
42							2.8					
43							1.3					
44							4.8					
45												
								End of Boring at 45 ft. bgs. Gray clay encountered.				

GRANULAR SOILS (N-Value)

0 to 4 - Very Loose
5 to 10 - Loose
10 to 30 - Medium Dense
31 to 50 - Dense
Over 50 - Very Dense

COHESIVE SOILS (N-Value)

0 to 2 - Very Soft
3 to 4 - Soft
5 to 8 - Medium Stiff
9 to 15 - Stiff
15 to 30 - Very Stiff
Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/26/10		5 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-05
FILE NO. 80036
Sheet No. 1 of 2
Checked by: JF
Date Start 8/27/10
Date End 8/27/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
1		S-1	22	0.0-5.0			<1	S-1: 7" Topsoil, fine-coarse sand with fines, trace medium-fine gravel, dark brown with organics, dry. 2" Increasing plastic, dark brown clay, trace very fine-fine sand. 10" Loose, fine-coarse sand, little medium-fine gravel, trace fines organics, brown, dry. 3" Increasing plastic fines, some fine-coarse sand, trace fine gravel, dark brown. Sample collected at 0.5 - 1'. Sample collected at 3 - 3.5'.				
2												
3												
4												
5												
6		S-2	44	5.0-10.0			<1	S-2: 4" Plastic fines, little fine-medium sand, brown, dry. 6" Brown with dark brown plastic fines woth fine sand, little medium-coarse sand, moist, large piece of gravel at end of 6" (1" gravel). 5" Fine-very fine sand, brown with black, trace organics. 14" Dark brown, slightly plastic, fine-very fine sand with organics. 15" Gray, fine-very fine sand (1" organics at 1"), brownish gray to very gray. Sample collected at 7 - 7.5'.				
7												
8												
9												
10												
11		S-3	57	10.0-15.0			<1	S-3: 16" Dark brownish gray with black brown, increasing with organics, increasing fine sand with fines, plastic, wet, (wood pieces, sediment, rock fragments) - low density. 19" Grayish brown, fine-very fine sand, decreasing density, wet, loose. 15" Brown, fine-very fine sand. 2" Fine-medium gravel with fine-coarse sand. 5" Fine sand, brown. Sample collected at 13 - 13.5'.				
12												
13												
14												
15												
16		S-4	28	15.0-20.0			<1	S-4: 28" Gray, fine sand, some fine gravel. Sample collected at 17 - 17.5'.				
17												
18												
19												
20												
21		S-5		20.0-20.0				S-5: No recovery.				
22												

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/27/10		5.5 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-05
FILE NO. 80036
Sheet No. 2 of 2
Checked by: JF
Date Start 8/27/10
Date End 8/27/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
24												
25												
26		S-7	13	25.0-35.0			<1	S-7: 13" Gray, very fine sand. Sample collected at 25 - 35'.				
27												
28												
29												
30												
31												
32												
33												
34												
35												
36		S-8	35	35.0-40.0			<1	S-8: 35" Gray clay.				
37												
38												
39												
40												
41								End of Boring at 40 ft. bgs.				
42												
43												
44												
45												

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/27/10		5.5 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-06
FILE NO. 80036
Sheet No. 1 of 3
Checked by: JF
Date Start 8/25/10
Date End 8/26/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
1		S-1	48	0.0-5.0			1.1	S-1: 3" Organics. 10" Medium-fine sand, brown-light brown, trace gravel. 2" Dark brown, medium-fine sand. 23" Light brown/orange fine sand. 6" Brown, fine-very fine sand, trace medium sand, moist. 4" Very fine sand, moist. Sample collected at 0.5 - 1'. Sample collected at 3 - 3.5'.				
2												
3												
4												
5												
6		S-2	55	5.0-10.0			<1	S-2: 14" Brownish-gray, very fine sand, saturated. 12" Brown/gray, fine sand. 20" Fine sand. 9" Medium-coarse sand, some fine sand. Sample collected at 7 - 7.5'.				
7												
8												
9												
10												
11		S-3	60	10.0-15.0			<1	S-3: 16" Fine sand, brown, saturated. 5" Fine-medium sand, trace coarse. 6" Fine sand - fine medium sand, 1" very fine sand, brown. 32" Medium-fine sand, trace coarse. Sample collected at 13 - 13.5'.				
12												
13												
14												
15												
16		S-4	60	15.0-20.0			<1	S-4: 12" Gray, very fine, dense, sand. 3" Brown/orange, fine sand, trace medium-coarse sand. 18" Fine sand, trace medium sand, gray, medium-fine sand, some medium-coarse sand. 27" Coarse-medium sand, gray. Sample collected at 18 - 18.5'.				
17												
18												
19												
20												
21		S-5		20.0-25.0			<1	S-5: Fine-medium sand, moist, gray, dense. Sample collected at 23 - 23.5'.				1
22												

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/26/10		5 feet		

REMARKS:
1) Sample stuck in PETG sleeve. Sample collected from 9" in sleeve.

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-06
FILE NO. 80036
Sheet No. 2 of 3
Checked by: JF
Date Start 8/25/10
Date End 8/26/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
24												
25												
26		S-6	29	25.0-30.0			<1	S-6: 29" Dark gray fine-very fine sand, wet/moist, dense. Sample collected at 27.5 - 28'.				
27												
28												
29												
30												
31		S-7		30.0-35.0			<1	S-7: Dark gray fine-very fine sand, wet/moist, dense. Sample collected at 32.5 - 33'.				
32												
33												
34												
35												
36		S-8	15	35.0-40.0			<1	S-8: 15" Dark gray fine-very fine sand, wet/moist, less dense in last 6". Sample collected at 37.5 - 38'.				
37												
38												
39												
40												
41		S-9	23	40.0-45.0			<1	S-9: 6" Dark gray fine-very fine sand, some silt, wet/moist. 17" Silty very fine sand. Sample collected at 42.5 - 43'.				
42												
43												
44												
45												

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/26/10		5 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-06
FILE NO. 80036
Sheet No. 3 of 3
Checked by: JF
Date Start 8/25/10
Date End 8/26/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
47												
48												
49												
50												
51								Bottom of boring at 50' bgs.				
52												
53												
54												
55												
56												
57												
58												
59												
60												
61												
62												
63												
64												
65												
66												
67												
68												

GRANULAR SOILS (N-Value)

0 to 4 - Very Loose
5 to 10 - Loose
10 to 30 - Medium Dense
31 to 50 - Dense
Over 50 - Very Dense

COHESIVE SOILS (N-Value)

0 to 2 - Very Soft
3 to 4 - Soft
5 to 8 - Medium Stiff
9 to 15 - Stiff
15 to 30 - Very Stiff
Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/26/10		5 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-07
FILE NO. 80036
Sheet No. 1 of 3
Checked by: JF
Date Start 8/27/10
Date End 8/27/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
1		S-1	41	0.0-5.0			<1	S-1: 7" Brown, fine-very fine sand, some organics, trace medium-coarse sand, trace gravel. 34" Brown, fine-very fine sand, trace coarse sand, trace fines, trace medium-coarse sand. Sample collected at 0.5 - 1'. Sample collected at 3 - 3.5'.				
2												
3												
4												
5												
6		S-2	39	5.0-10.0			<1	S-2: 15" Fine-very fine light brown sand, dry. 17" Very fine sand, trace fines, brown, moist at 10", wet at 3'. 3" Medium brown sand. 4" Fine sand, trace fine gravel. Sample collected at 7 - 7.5'.				
7												
8												
9												
10												
11		S-3	27	10.0-15.0			<1	S-3: 16" Medium-coarse brown sand, wet. 3" Very fine brown sand, increasing density. 3" Medium-coarse sand, decreasing density, brown. 1" Very fine sand, brown. 4" Medium-course sand, brown. Sample collected at 12 - 12.5'				
12												
13												
14												
15												
16								Only 20" of recovery from 15-45'. Very soft, zero hydraulic pressure from geoprobe used to push to 42'. Max PID reading was 8 ppmv. Sample collected at 15 - 45'.				
17												
18												
19												
20												
21												
22												

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/27/10		8.5 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-07
FILE NO. 80036
Sheet No. 2 of 3
Checked by: JF
Date Start 8/27/10
Date End 8/27/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
24												
25												
26												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												

GRANULAR SOILS (N-Value)	COHESIVE SOILS (N-Value)
0 to 4 - Very Loose	0 to 2 - Very Soft
5 to 10 - Loose	3 to 4 - Soft
10 to 30 - Medium Dense	5 to 8 - Medium Stiff
31 to 50 - Dense	9 to 15 - Stiff
Over 50 - Very Dense	15 to 30 - Very Stiff
	Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/27/10		8.5 feet		

REMARKS:

Nobis Engineering, Inc.

PROJECT

Commerce Street Plume
Superfund Site
Williston, Vermont
TO 80036

BORING NO. SB-07
FILE NO. 80036
Sheet No. 3 of 3
Checked by: JF
Date Start 8/27/10
Date End 8/27/10

Boring Co. Zebra Environmental Rig Geoprobe 8260 Boring Location See Site Sketch
Driller Brian Ramos, Jeff S. Inspector AB/JF Ground Surface El. Datum Top-of-Riser El.

Depth (ft.)	Casing Blows (ft.)	SAMPLE INFORMATION Type & No.	REC (inches)	DEPTH (feet)	BLOWS/ 6 IN.	SPT N-Value	PID	SAMPLE DESCRIPTION ASTM D2488 - Visual Manual Procedure	WELL DETAIL	Ground Water	STRATUM	REMARKS
47												
48												
49												
50												
51												
52												
53												
54												
55												
56												
57												
58												
59												
60												
61												
62												
63												
64								Bottom of boring at 63.5' bgs. Gray clay encountered.				
65												
66												
67												
68												

GRANULAR SOILS (N-Value)

0 to 4 - Very Loose
5 to 10 - Loose
10 to 30 - Medium Dense
31 to 50 - Dense
Over 50 - Very Dense

COHESIVE SOILS (N-Value)

0 to 2 - Very Soft
3 to 4 - Soft
5 to 8 - Medium Stiff
9 to 15 - Stiff
15 to 30 - Very Stiff
Over 30 - Hard

Sampler: Soil samples were collected using Geoprobe Macrocore discrete interval samplers. The sampler produces a 60"x2" sample in a disposable PVC sleeve. The sampler is driven to depth using a Geoprobe Model 8260 hydraulic push probe.

Drilling Method:

Groundwater Observations (ft.)

Date	Time	Depth Below Ground	Depth Below Riser	Stabilization Time
8/27/10		8.5 feet		

REMARKS:

KEY TO SYMBOLS

Symbol	Description

Misc. Symbols

▽	Water table during drilling

Notes:

1. Exploratory borings were drilled on the dates indicated using the methods described in the boring logs.

2. Groundwater was encountered as indicated.

3. Boring locations were located relative to existing site features.

4. These logs are subject to the limitations, conclusions, and recommendations in this report.

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **SB-12-1**

Boring Location:

Checked by:

Date Start: August 7, 2012

Date Finish: August 7, 2012

Contractor: Platform Environmental Drilling

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
1	S-1	2.5	0-3					S-1: Brown, silty SAND (SM), moist, 20% Medium Sand, 40% Fine Sand. 40% SILT.	
2									
3									
4	S-2	18	3-5					S-2: Brown, silty SAND (SM), moist, 20% Medium Sand, 40% Fine Sand. 40% SILT.	
5									
6	S-3	15	5-10					S-3: Brown, silty SAND (SM), wet, 20% Medium Sand, 40% Fine Sand. 40% SILT.	
7									
8									
9									
10									
11	S-4	35	10-15					S-4: Brown, poorly-graded SAND (SP), wet, 10% Medium Sand, 80% Fine Sand. 10% SILT.	
12									
13									
14									
15									
16	S-5	38	15-20					S-5: Brown, silty SAND (SM), wet, 60% Fine Sand. 40% SILT Orange Band at 29".	
17									
18									
19									
20									
21	S-6	36	20-25					S-6: Gray, silty SAND (SM), wet, 60% Fine Sand. 40% SILT.	
22									
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 12/11/14 16:41 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **SB-12-1**

Boring Location:

Checked by:

Date Start: August 7, 2012

Date Finish: August 7, 2012

Contractor: Platform Environmental Drilling

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
	S-7	54	25-30					S-7: Gray, silty SAND (SM), wet, 80% Fine Sand. 20% SILT.	
26									
27									
28									
29									
30									
	S-8	52	30-35					S-8: Gray, silty SAND (SM), wet, 30% Fine Sand. 70% SILT.	
31									
32									
33									
34									
35									
	S-9	0	35-40					S-9: No Recovery.	
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
	S-10		45-48					S-10: Gray, fat CLAY (CH), wet, 100% CLAY.	
46									
47									
48									
49								Boring terminated at 48 feet.	
50									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 12/11/14 16:42 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **SB-12-2**

Boring Location:

Checked by:

Date Start: August 7, 2012

Date Finish: August 7, 2012

Contractor: Platform Environmental Drilling

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
1	S-1	24	0-3					S-1: Brown, silty SAND (SM), moist, 15% Medium Sand, 40% Fine Sand. 40% SILT.	
2									
3									
4	S-2	15	3-5					S-2: Silty SAND (SM), 15% Medium Sand, 55% Fine Sand. 30% SILT.	
5									
6	S-3	8	5-10					S-3: 5" loose, saturated,20% Silt, 20% Fine Sand, 60% Medium-Coarse Sand, brown. 3" compact (medium dense) 5% Silt, 95% Fine Sand.	
7									
8									
9									
10									
11	S-4	44	10-15					S-4: 14" saturated, brown, 20% Silt, 80% poorly graded fine Sand 12" saturated, brown 100% poorly graded fine Sand 18" saturated, brown 20% Silt, 80% fine-medium Sand.	
12									
13									
14									
15									
16	S-5	47	15-20					S-5: 8" saturated, light brown, 15% Silt, 85% poorly graded fine Sand, loose 4" dark brown, 30% Silt, 70% poorly graded fine to medium Sand 4" brown / rust tint, 100% poorly graded fine Sand 5" brownish gray, 100% poorly graded very fine Sand 26" gray, 100% poorly graded very fine Sand.	
17									
18									
19									
20									
21	S-6	55	20-25					S-6: 26" saturated, gray, very loose, 5% Fines, 95% poorly graded very fine Sand 29" gray, wet, medium dense 5% Fines, 95% fine Sand.	
22									
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 12/11/14 16:42 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: SB-12-2

Boring Location:

Checked by:

Date Start: August 7, 2012

Date Finish: August 7, 2012

Contractor: Platform Environmental Drilling

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
	S-7	57.5	25-30					S-7: 38" saturated, gray, loose, 100% poorly graded very fine Sand 19.5" saturated, gray, dense, 100% poorly graded very fine Sand.	
26									
27									
28									
29									
30									
	S-8	48	30-35					S-8: Gray, wet, Sandy Silt, 60% Silt, 40% fine Sand.	
31									
32									
33									
34									
35									
	S-9	37	35-40					S-9: Gray, wet, 100% fat Clay.	
36									
37									
38									
39									
40									
								Boring terminated at 40 feet.	
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

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BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **SB-12-3**

Boring Location:

Checked by:

Date Start: August 7, 2012

Date Finish: August 7, 2012

Contractor: Platform Environmental Drilling

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
1	S-1	29	0-3					S-1: 12" gray, dry, Gravel with Sand 17" brown, dry, well graded Sand with 5% Silt.	
2									
3									
4	S-2	24	3-5					S-2: Top 8" appears to have fallen in from above (Gravel) 16" marbled dark brown / brown Sand, 90% poorly graded fine Sand, 10% Fines (first 9") 5" 90% medium Sand, 5% Fines.	
5									
6	S-3	31	5-10					S-3: Top 7" likely from above and not representative of subsurface conditions Bottom 24", wet, poorly graded, medium Sand with Gravel, bottom is saturated indicating.	
7									
8									
9									
10									
11	S-4	45	10-15					S-4: Top 19" brown, saturated, poorly graded fine Sand, 90% Sand, 10% Silt 19-45" brown, saturated, poorly graded medium Sand, 90% Sand, 10% Silt.	
12									
13									
14									
15									
16	S-5	32	15-20					S-5: Saturated, brown, poorly graded very fine Sand, 95% Sand, 5% Fines.	
17									
18									
19									
20									
21	S-6		20-25					S-6: Brown, wet, poorly graded, very fine Sand, 95% Sand, 5% Silt.	
22									
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

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BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: SB-12-3

Boring Location:

Checked by:

Date Start: August 7, 2012

Date Finish: August 7, 2012

Contractor: Platform Environmental Drilling

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
	S-7		25-30					S-7: Gray, wet, poorly graded, very fine Sand, 95% Sand, 5% Silt.	
26									
27									
28									
29									
30									
	S-8		30-35					S-8: Gray, wet, poorly graded, very fine Sand, 95% Sand, 5% Silt.	
31									
32									
33									
34									
35									
	S-9		35-40					S-9:	
36									
37									
38									
39									
40									
	S-10		40-45					S-10:	
41									
42									
43									
44									
45									
46								Boring terminated at 45 feet.	
47									
48									
49									
50									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

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BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **SB-12-4**

Boring Location:

Checked by:

Date Start: August 7, 2012

Date Finish: August 7, 2012

Contractor: Platform Environmental Drilling

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
1	S-1	31	0-5					S-1: 3" Topsoil 12" brown, dry, poorly graded fine Sand, dry, 15% Fines, 85% Sand 6" poorly graded medium Sand, 5% Fines, 95% Sand 10" moist, poorly graded, very fine Sand, 10% Silt.	
2									
3									
4									
5									
6	S-2	40	5-10					S-2: 4" marbled brown / dark brown silty Sand, 20% Silt, 80% fine Sand 13" loose silty Sand, 15% Fines, 85% Sand 10" medium dense, fine Sand, 10% Fines, 90% fine Sand 14" gray, poorly graded fine Sand.	
7									
8									
9									
10									
11	S-3	48	10-15					S-3: Brown, wet, silty Sand, 35% Silt, 50% fine Sand, 10% medium Sand, 5% coarse Sand.	
12									
13									
14									
15									
16	S-4	38	15-20					S-4: 24" saturated, loose, brown, silty Sand, 15% Silt, 85% very fine Sand 14" poorly graded Sand with Silt, 10% Silt, 90% fine Sand.	
17									
18									
19									
20									
21	S-5	41	20-25					S-5: 14" loose, poorly graded very fine Sand, <5% Silt 8" medium dense, saturated, poorly graded, very fine Sand 18" gay, saturated, very fine Sand, 100% Sand.	
22									
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

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BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **SB-12-4**

Boring Location:

Checked by:

Date Start: August 7, 2012

Date Finish: August 7, 2012

Contractor: Platform Environmental Drilling

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
	S-6		25-30					S-6: Gray, wet, poorly graded Sand with Silt, 10% Silt, 90% fine Sand.	
26									
27									
28									
29									
30									
	S-7	48	30-35					S-7: Gray, wet, poorly graded very fine Sand with Silt, 5% Silt, 95% Sand.	
31									
32									
33									
34									
35									
	S-8	55	35-40					S-8: Gray, wet, fat Clay.	
36									
37									
38									
39									
40									
41								Boring terminated at 40 feet.	
42									
43									
44									
45									
46									
47									
48									
49									
50									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

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BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **SB-12-5**

Boring Location:

Checked by:

Date Start: August 7, 2012

Date Finish: August 7, 2012

Contractor: Platform Environmental Drilling

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
	S-1	38	0-5					S-1A: 4" dark brown, dry, Topsoil (roots), well graded Sand with Silt, 10% Silt, 70% fine Sand, 20% medium Sand 22" tan, dry, well graded Sand with Silt, 10% Silt, 80% fine Sand, 10% medium Sand. S-1B: 25" brown, well graded Sand with Silt, 10% Silt, 50% fine Sand, 40% medium Sand 38" light brown, well graded Sand with Silt, 10% Silt, 60% fine Sand, 30% medium Sand.	
1									
2									
3									
4									
5									
	S-2	48	5-10					S-2: 9" light brown, well graded Sand with Silt, 10% Silt, 60% fine Sand, 30% medium Sand 10" brown band, well graded Sand with Silt, 10% Silt, 60% fine Sand, 30% medium Sand 13" light brown, well graded Sand with Silt, 10% Silt, 60% fine Sand, 30% medium Sand 48 wet, brown, well graded Sand with Silt, 10% Silt, 40% Fine Sand, 50% medium Sand, dark brown bars at 29-34" and 40-42". Clay at 48", 1" thick, Clay / Silt mix.	
6									
7									
8									
9									
10								Boring terminated at 10 feet.	
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 12/11/14 16:42 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **SB-12-6**

Boring Location:

Checked by:

Date Start: August 7, 2012

Date Finish: August 7, 2012

Contractor: Platform Environmental Drilling

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
	S-1	36	0-5					S-1A: 2" dark brown, dry, Topsoil, organic needles/roots, well graded Sand with Silt, 10% Silt, 70% fine Sand, 20% medium Sand 8" tan, dry, well graded Sand with Gravel, 10% Silt, 15% fine Gravel, 15% medium Sand, 60% fine Sand 12" brown, dry, well graded Sand with Gravel, 10% Silt, 15% fine Gravel, 15% medium Sand, 60% fine Sand. S-1B: 24" light brown, well graded Sand with Silt, 10% Silt, 70% fine Sand, 20% medium Sand 36" brown / orange, well graded Sand with Silt, 10% Silt, 70% fine Sand, 20% medium Sand.	
1									
2									
3									
4									
5									
	S-2	36	5-10					S-2: 9" brown / orange, moist, well graded Sand with Silt, 10% Silt, 70% fine Sand, 20% medium Sand 36" brown, wet, well graded Sand with Silt, 10% Silt, 40% fine Sand, 50% medium Sand gray band of Silt at 16".	
6									
7									
8									
9									
10								Boring terminated at 10 feet.	
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

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BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **SB-13-01**

Boring Location:

Checked by:

Date Start: December 10, 2013

Date Finish: December 10, 2013

Contractor: Eastern Analytical, Inc.

Driller: D. Nevison

Nobis Rep.: M. Carboneau

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
12/10/13	00:00	3		6	

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
	S-1	24	0-2					S-1: Orangish brown, poorly-graded SAND (SP), dry, 90% Fine Sand, 10% Fines. 3 inches of topsoil.	
1									
2									
	S-2	39	2-6					S-2: Orangish brown, poorly-graded SAND (SP), dry, 90% Fine Sand, 10% Fines. more brown at bottom. Wet.	
3									
4									
5									
6								Boring terminated at 6 feet.	
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

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BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **SB-13-02**

Boring Location:

Checked by:

Date Start: December 10, 2013

Date Finish: December 10, 2013

Contractor: Eastern Analytical, Inc.

Driller: D. Nevison

Nobis Rep.: M. Carboneau

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
12/10/13	00:00	3.5		6	

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
1	S-1	20	0-2					S-1: Orangish brown, poorly-graded SAND (SP), dry, 90% Fine Sand, 10% Fines. 2 inches of topsoil.	
2									
3	S-2	41	2-6					S-4: Orangish brown, poorly-graded SAND (SP), dry, 90% Fine Sand, 10% Fines. More brown at bottom. Wet.	
4									
5									
6									
7								Boring terminated at 6 feet.	
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

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BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **SB-13-03**

Boring Location:

Checked by:

Date Start: December 10, 2013

Date Finish: December 10, 2013

Contractor: Eastern Analytical, Inc.

Driller: D. Nevison

Nobis Rep.: M. Carboneau

Rig Type / Model: Geoprobe

Hammer Type: Direct-push

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Direct-Push Technique	
Size ID (in.)		
Advancement		

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified ASTM)	NOTES
	S-1	24	0-2					S-1 (0.6"): Brown, (TOPSOIL).	
1	S-1A		0.6					S-1A: Brown, poorly-graded SAND (SP), dry, 90% Fine Sand, 10% Fines.	
2								Moist.	
	S-2	39	2-6					S-2: Brown, poorly-graded SAND (SP), moist, 90% Fine Sand, 10% Fines.	
3									
4	S-2A		3.5					S-2A: Brown, poorly-graded SAND (SP), wet, 90% Coarse Sand, 10% Fines.	
5									
6									
7								Boring terminated at 6 feet.	
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

Soil descriptions and gradation percentagesare based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 12/11/14 16:42 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-01D**

Boring Location:

Checked by: S. Harding

Date Start: November 9, 2010

Date Finish: November 9, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	2.50			

Depth (ft.)	Sample Information: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Lithology: Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
1								Casing advanced to 39.4 feet to install monitoring well.	Flush-mount Curb Box Set in Concrete	
2										
3					▽					
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										PVC Riser With Native Soil Backfill
18										
19										
20										
21										
22										
23										
24										
25										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little -	10 - 20	few
some	20 - 35	several -
and -	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs. -

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:57 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-01D**

Boring Location:

Checked by: S. Harding

Date Start: November 9, 2010

Date Finish: November 9, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

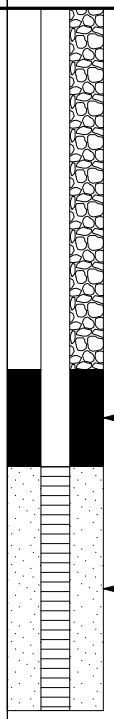
Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	2.50			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40								Boring terminated at 39.4 feet.		
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										



Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:57 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-02M**

Boring Location:

Checked by: S. Harding

Date Start: November 9, 2010

Date Finish: November 9, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	2.75			

Depth (ft.)	SAMPLE INFORMATION: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY: Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
1								Casing advanced to 29.3 feet to install monitoring well.	Flush-mount Curb Box Set in Concrete	
2										
3					▽					
4										
5										
6										
7										
8										
9										
10										
11										
12									PVC Riser With Native Soil Backfill	
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24									Bentonite - Seal	
25										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little -	10 - 20	few
some	20 - 35	several -
and -	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs. -

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:57 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-02M**

Boring Location:

Checked by: S. Harding

Date Start: November 9, 2010

Date Finish: November 9, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

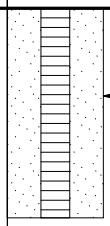
Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	2.75			

Depth (ft.)	Sample Information: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Lithology: Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
26									 Slotted PVC Pipe with Sand Filter	
27										
28										
29										
30								Boring terminated at 29.3 feet.		
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:57 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project:	Commerce Street Plume Superfund Site	Boring No.:	MW-03D
Location:	Williston, Vermont	Boring Location:	
Nobis Project No.:	TO 80036	Checked by:	S. Harding
		Date Start:	November 9, 2010
		Date Finish:	November 9, 2010

Contractor:	Platform	Rig Type / Model:	Geoprobe / 7855DT	Ground Surface Elev.:	
Driller:	M. Jordan	Hammer Type:	Hydraulic Hammer		
Nobis Rep.:	J. Stewart	Hammer Hoist:		Datum:	NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	7.39			

Depth (ft.)	SAMPLE INFORMATION: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY: Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
-1								Casing advanced to 40.2 feet to install monitoring well.	Capped Protective Casing; Protective Casing Set in Concrete; PVC Riser With Native Soil Backfill	
0										
1										
2										
3										
4										
5										
6										
7										
8					▽					
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:57 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-03D**

Boring Location:

Checked by: S. Harding

Date Start: November 9, 2010

Date Finish: November 9, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	7.39			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34									Bentonite Seal	
35										
36										
37										
38									Slotted PVC Pipe with Sand Filter	
39										
40										
41								Boring terminated at 40.2 feet.		
42										
43										
44										
45										
46										
47										
48										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:57 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis
Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-04D**

Boring Location:

Checked by: S. Harding

Date Start: November 10, 2010

Date Finish: November 10, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	3.31			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
1								Casing advanced to 39.5 feet to install monitoring well.	Flush-mount Curb Box Set in Concrete	
2										
3					▽					
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										PVC Riser With Native Soil Backfill
18										
19										
20										
21										
22										
23										
24										
25										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little -	10 - 20	few
some	20 - 35	several -
and -	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs. -

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:57 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-04D**

Boring Location:

Checked by: S. Harding

Date Start: November 10, 2010

Date Finish: November 10, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

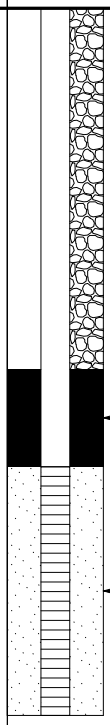
Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	3.31			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40								Boring terminated at 39.5 feet.		
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										



Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:57 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project:	Commerce Street Plume Superfund Site
Location:	Williston, Vermont
Nobis Project No.:	TO 80036
Boring No.:	MW-05D
Boring Location:	
Checked by:	S. Harding
Date Start:	November 10, 2010
Date Finish:	November 10, 2010
Contractor:	Platform
Driller:	M. Jordan
Nobis Rep.:	J. Stewart
Rig Type / Model:	Geoprobe / 7855DT
Hammer Type:	Hydraulic Hammer
Hammer Hoist:	
Ground Surface Elev.:	
Datum:	NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	4.41			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
1								Casing advanced to 33.5 feet to install monitoring well.	Flush-mount Curb Box Set in Concrete	
2										
3										
4										
5					▽					
6										
7										
8										
9										
10										
11										
12										
13										
14									PVC Riser With Native Soil Backfill	
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little -	10 - 20	few
some	20 - 35	several -
and -	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs. -

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:58 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-05D**

Boring Location:

Checked by: S. Harding

Date Start: November 10, 2010

Date Finish: November 10, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

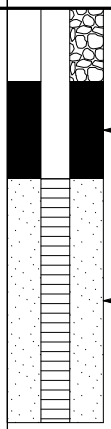
Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	4.41			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
26										
27										
28										
29										
30										
31										
32										
33										
34								Boring terminated at 33.5 feet.		
35										
36										
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										



Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:58 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-05D2**

Boring Location:

Checked by: S. Harding

Date Start: November 10, 2010

Date Finish: November 10, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	4.49			

Depth (ft.)	Sample Information: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Lithology: Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
1								Casing advanced to 44.4 feet to install monitoring well.	Flush-mount Curb Box Set in Concrete	
2										
3										
4										
5					▽					
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										PVC Riser With Native Soil Backfill
21										
22										
23										
24										
25										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little -	10 - 20	few
some	20 - 35	several -
and -	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs. -

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:58 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-05D2**

Boring Location:

Checked by: S. Harding

Date Start: November 10, 2010

Date Finish: November 10, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

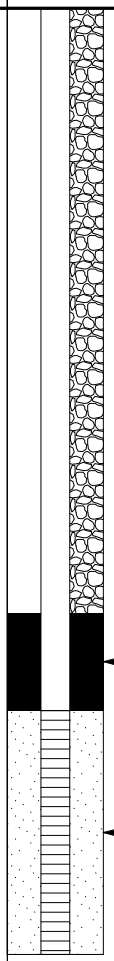
Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	4.49			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
43										
44										
45								Boring terminated at 44.4 feet.		
46										
47										
48										
49										
50										



Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:58 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project:	Commerce Street Plume Superfund Site	Boring No.:	MW-06D
Location:	Williston, Vermont	Boring Location:	
Nobis Project No.:	TO 80036	Checked by:	S. Harding
		Date Start:	November 10, 2010
		Date Finish:	November 10, 2010

Contractor:	Platform	Rig Type / Model:	Geoprobe / 7855DT	Ground Surface Elev.:	
Driller:	M. Jordan	Hammer Type:	Hydraulic Hammer		
Nobis Rep.:	J. Stewart	Hammer Hoist:		Datum:	NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	5.38			

Depth (ft.)	SAMPLE INFORMATION: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY: Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
1								Casing advanced to 37.9 feet to install monitoring well.	Flush-mount Curb Box Set in Concrete	
2										
3										
4										
5										
6					▽					
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										PVC Riser With Native Soil Backfill
18										
19										
20										
21										
22										
23										
24										
25										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little -	10 - 20	few
some	20 - 35	several -
and -	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs. -

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:58 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-06D**

Boring Location:

Checked by: S. Harding

Date Start: November 10, 2010

Date Finish: November 10, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	5.38			

Depth (ft.)	Sample Information: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Lithology: Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
26										
27										
28										
29										
30										
31										
32									Bentonite Seal	
33										
34										
35										
36									Slotted PVC Pipe with Sand Filter	
37										
38								Boring terminated at 37.9 feet.		
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:58 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-06M**

Boring Location:

Checked by: S. Harding

Date Start: November 10, 2010

Date Finish: November 10, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	5.3			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
1								Casing advanced to 28.9 feet to install monitoring well.	Flush-mount Curb Box Set in Concrete	
2										
3										
4										
5					▽					
6										
7										
8										
9										
10										
11										
12									PVC Riser With Native Soil Backfill	
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23									Bentonite Seal	
24										
25										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little -	10 - 20	few
some	20 - 35	several -
and -	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs. -

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:58 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-06M**

Boring Location:

Checked by: S. Harding

Date Start: November 10, 2010

Date Finish: November 10, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	5.3			

Depth (ft.)	SAMPLE INFORMATION: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY: Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
26									Slotted PVC Pipe with Sand Filter	
27										
28										
29								Boring terminated at 28.9 feet.		
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:58 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project:	Commerce Street Plume Superfund Site
Location:	Williston, Vermont
Nobis Project No.:	TO 80036
Boring No.:	MW-07M
Boring Location:	
Checked by:	S. Harding
Date Start:	November 11, 2010
Date Finish:	November 11, 2010
Contractor:	Platform
Driller:	M. Jordan
Nobis Rep.:	J. Stewart
Rig Type / Model:	Geoprobe / 7855DT
Hammer Type:	Hydraulic Hammer
Hammer Hoist:	
Ground Surface Elev.:	
Datum:	NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/12/10	00:00	5.37			

Depth (ft.)	SAMPLE INFORMATION: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY: Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
1								Casing advanced to 34.3 feet to install monitoring well.	Flush-mount Curb Box Set in Concrete	
2										
3										
4										
5										
6					▽					
7										
8										
9										
10										
11										
12										
13										
14										
15										PVC Riser With Native Soil Backfill
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little -	10 - 20	few
some	20 - 35	several -
and -	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs. -

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:58 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-07M**

Boring Location:

Checked by: S. Harding

Date Start: November 11, 2010

Date Finish: November 11, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

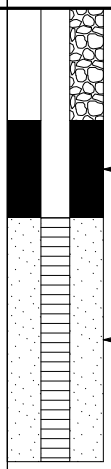
Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/12/10	00:00	5.37			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
26										
27										
28										
29										
30										
31										
32										
33										
34										
35								Boring terminated at 34.3 feet.		
36										
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										



Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:58 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-08M**

Boring Location:

Checked by: S. Harding

Date Start: November 12, 2010

Date Finish: November 12, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

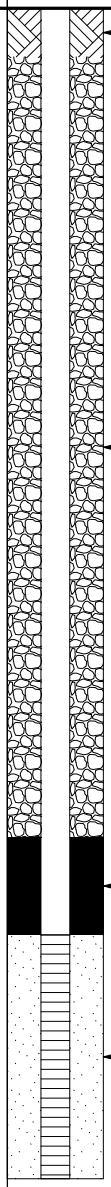
Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/12/10	00:00	1.44			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
1								Casing advanced to 24.0 feet to install monitoring well.		
2					▽					
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24								Boring terminated at 24 feet. -		
25 -										

Flush-mount Curb Box Set in Concrete

PVC Riser With Native Soil Backfill

Bentonite Seal

Slotted PVC Pipe with Sand Filter

Soil -	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:59 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-08S**

Boring Location:

Checked by: S. Harding

Date Start: November 23, 2010

Date Finish: November 23, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/12/10	00:00	1.64			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
1								Casing advanced to 19.0 feet to install monitoring well.	Flush-mount Curb Box Set in Concrete	
2					▽					
3										
4										
5										
6										
7									PVC Riser With Native Soil Backfill	
8										
9										
10										
11										
12										
13									Bentonite Seal	
14										
15										
16										
17									Slotted PVC Pipe with Sand Filter	
18										
19										
20								Boring terminated at 19 feet.		
21										
22										
23										
24										
25										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:59 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-09D**

Boring Location:

Checked by: S. Harding

Date Start: November 11, 2010

Date Finish: November 11, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/12/10	00:00	8.94			

Depth (ft.)	Sample Information: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Lithology: Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
-1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23					▽			Casing advanced to 39.6 feet to install monitoring well.	Capped Protective Casing; Protective Casing Set in Concrete; PVC Riser With Native Soil Backfill	

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:59 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-09D**

Boring Location:

Checked by: S. Harding

Date Start: November 11, 2010

Date Finish: November 11, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/12/10	00:00	8.94			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34									Bentonite Seal	
35										
36										
37									Slotted PVC Pipe with Sand Filter	
38										
39										
40								Boring terminated at 39.6 feet.		
41										
42										
43										
44										
45										
46										
47										
48										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:59 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-09M**

Boring Location:

Checked by: S. Harding

Date Start: November 11, 2010

Date Finish: November 11, 0210

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

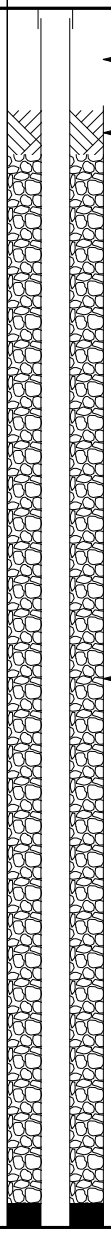
Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/12/10	00:00	8.85			

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
-1								Casing advanced to 29.5 feet to install monitoring well.		
0										
1										
2										
3										
4										
5										
6										
7										
8										
9					▽					
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										



Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:59 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-09M**

Boring Location:

Checked by: S. Harding

Date Start: November 11, 2010

Date Finish: November 11, 0210

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/12/10	00:00	8.85			

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
24									Bentonite Seal	
25										
26										
27									Slotted PVC Pipe with Sand Filter	
28										
29										
30								Boring terminated at 29.5 feet.		
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 12:59 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-10D**

Boring Location:

Checked by: S. Harding

Date Start: November 12, 2010

Date Finish: November 12, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/12/10	00:00	2.84			

Depth (ft.)	Sample Information: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Lithology: Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
1								Casing advanced to 35.0 feet to install monitoring well.	Flush-mount Curb Box Set in Concrete	
2										
3					▽					
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										PVC Riser With Native Soil Backfill
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little -	10 - 20	few
some	20 - 35	several -
and -	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs. -

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 13:00 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-10D**

Boring Location:

Checked by: S. Harding

Date Start: November 12, 2010

Date Finish: November 12, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

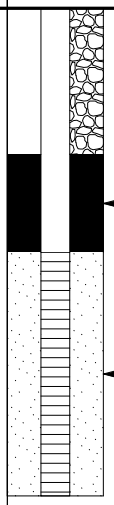
Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/12/10	00:00	2.84			

Depth (ft.)	SAMPLE INFORMATION: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY: Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
26										
27										
28										
29										
30										
31										
32										
33										
34										
35								Boring terminated at 35 feet.		
36										
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										



Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 13:00 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

BORING LOG

Nobis — Engineering a Sustainable Future

Project: Commerce Street Plume Superfund Site

Location: Williston, Vermont

Nobis Project No.: TO 80036

Boring No.: **MW-11S**

Boring Location:

Checked by: S. Harding

Date Start: November 9, 2010

Date Finish: November 9, 2010

Contractor: Platform

Driller: M. Jordan

Nobis Rep.: J. Stewart

Rig Type / Model: Geoprobe / 7855DT

Hammer Type: Hydraulic Hammer

Hammer Hoist:

Ground Surface Elev.:

Datum: NAVD 88

	Drilling Method	Sampler
Type	Geoprobe	
Size ID (in.)	3	
Advancement	Push	

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 11/11/10	00:00	6.71	19.30		

Depth (ft.)	Sample Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Well Detail	Notes
1								Casing advanced to 19.3 feet to install monitoring well.	Flush-mount Curb Box Set in Concrete	
2										
3										
4										
5										
6										
7					▽				PVC Riser With Native Soil Backfill	
8										
9										
10										
11										
12										
13										
14									Bentonite Seal	
15										
16										
17									Slotted PVC Pipe with Sand Filter	
18										
19										
20								Boring terminated at 19.3 feet.		
21										
22										
23										
24										
25										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

) Wells constructed of 5 foot prepacked screens and 2 feet of prepacked bentonite plugs.

Soil descriptions are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG - NOBIS GINT DATA TEMPLATE OCT 7 2011.GDT - 7/29/15 13:00 - R:\80000 TASK ORDERS\80036 COMMERCE STREET PLUME\NEW 80036 GINT LOGS.GPJ

APPENDIX C

Nobis	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of Rev.: 0
		Prepared by: John St. John	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): John St. John

Temperature Range: 45-
Precipitation: SLIGHT
Wind Speed/Direction: 10mph

SAMPLE INFORMATION

Sampling Round: ~~April~~ 2008 Long-Term Monitoring Dec
Sample ID: MW-1
Sample Date / Time: 12-15, 15:20

QA/QC Sample:
QA/QC Sample Time: ~~15:20~~
Initial Water Level: 7.20

Equipment Information

Pump Type: Peristaltic
Pump Name/ID: Geopump E/L IIe
Water Level Name/ID: Heron dipper-T

Multimeter Name/ID: YSI 556 mps
Turbidity Name/ID: Lamotte 2020

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
				Set up pump, fill flow-through cell, etc.					
14:40	7.25		240	10.57	378	6.45	342.2	28.9	16
14:45	7.26		235	10.65	419	6.46	345.1	28.0	15
14:50	7.26		245	10.80	438	6.48	351.2	26.5	14
14:55	7.26		250	10.83	442	6.48	356.8	26.3	11
15:00	7.26		250	10.83	440	6.48	360.8	26.5	11
15:05	7.26		250	10.84	419	6.49	365.7	26.6	9.1
15:10	7.26		250	10.87	416	6.48	371.3	26.4	6.8
15:15	7.26		250	10.88	409	6.48	373.5	25.9	6.6
15:20			SAMPLE	TAKEN					

COMMENTS:

Signature: John St. John

Well Purging - Field Water Quality Measurements

80036.03 Task 330
Location: (Site/Facility Name) Commerce St Plume
Well Number: MI-2 Date: 12/15/08
Field Personnel: D. Gray
Sampling Organization: Nobis Engineering, Inc.

Identify MP: Top of PVC
Pump Intake at (ft. below MP):
Purging Device; (pump type): Peri
Initial DTW 6.86'

Clock Time (24 HR)	Water Depth Below MP 0.3(ft)	Pump Dial[1]	Purge Rate (ml/min)	Temp. (C) (3%)	Specific Conduc.[2] (mS/m) (3%)	pH (+/-0.1)	ORP/ Eh[3] (mv) (+/-10)	DO (mg/L) (10%)	Turbidity (NTU) (10%,<5)
1530	6.98		200	10.86	134	6.43	205.1	6.26	28
1535	6.99		200	11.00	136	6.16	203.2	5.76	19
1540	6.99		200	11.07	140	6.06	202.1	5.51	18
1545	6.99		200	11.07	140	6.06	202.1	5.51	11
1550	6.99		200	11.07	140	6.06	202.1	5.51	6.2
1555	6.99		200	11.23	147	6.01	187.7	5.23	4.2
1600	7.00		200	11.23	146	5.97	188.8	5.08	3.0
1605	7.01		200	11.30	153	5.94	189.3	4.77	1.7
1610	7.00		200	11.32	157	5.91	189.2	4.65	1.2
1615	7.00		200	11.30	156	5.90	189.3	4.61	0.55
1620	7.01		200	11.32	159	5.89	188.9	4.56	1.2
1625	Sample collected								

1. Pump dial setting (for example: hertz, cycles/min, etc)
2. MilliSiemens per cm (same as mmhos/cm) at 25C
3. Oxidation reduction potential (stand in for Eh)

Comments:
Purge water is clear. No sheen and no odor.

	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of Rev.: 0
		Prepared by:	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): Ken Marks

Temperature Range: 25 to 30°F
Precipitation: None
Wind Speed/Direction: N 3 to 5 mph

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID:
Sample Date / Time: 12-16-08 ~~1310~~ 1440

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 7.30

Equipment Information

Pump Type: GRC Pump
Pump Name/ID:
Water Level Name/ID: Heron - 056604

Multimeter Name/ID: 006182
Turbidity Name/ID: LaMotte 2020 SN - ME-12918

WELL ID: AL-14

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)	
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10	
1320	7.30	N/A	250	Set up pump, fill flow-through cell, etc.						
1325	7.30		250	9.52	762	5.74	~~14.0~~	19.0	20	QAD-2351
1330	7.30		250	9.99	229	5.68	244.5	3.91	11	
1335	7.30		250	9.97	217	5.49	258.0	1.45	9.7	
1340	7.30		250	9.94	217	5.70	234.9	0.99	11	
1345	7.30		250	9.97	217	5.65	233.3	0.78	12	
1350	7.30		250	10.02	219	5.61	238.4	0.69	11	
1355	7.30		250	10.12	221	5.72	229.5	0.55	9.3	
1400	7.30		250	10.26	222	5.68	232.2	0.46	9.0	
1410	7.30		250	10.31	~~226.7~~	5.68	226.7	0.41	7.1	Second = 222
1415	7.30		250	10.31	219	5.71	223.1	0.37	7.0	
1420	7.30		250	10.30	218	5.72	220.7	0.34	6.1	
1425	7.30		250	10.30	218	5.74	218.8	0.33	5.2	
1430	7.30		250	10.29	219	5.73	219.1	0.34	5.2	
1435	7.30		250	10.29	219	5.74	219.6	0.34	5.1	

COMMENTS: Good recharge, clear no odor, 1.5" PVC stick up

Signature: Ken Marks

Nobis	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of 1 Rev.: 0
		Prepared by:	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): Danielle Gray

Temperature Range: 20s
Precipitation: N/A
Wind Speed/Direction:

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: ASI-14S
Sample Date / Time: 12/16/08

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 7.25

Equipment Information

Pump Type: Peri Geo Pump
Pump Name/ID: #2219
Water Level Name/ID: Solinst 102

Multimeter Name/ID: YSI 600XL
Turbidity Name/ID: LaMotte 2020

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
0905	8.40	N/A	200	Set up pump, fill flow-through cell, etc.					
↓	↓	↓	↓	7.67	183	7.06	-66.2	2.29	33
0910	7.90		200	7.90	148	6.74	50.7	1.27	18
0915	7.74		100	7.09	140	6.58	-44.3	1.02	20
0920	7.91		100	7.16	131	6.46	-40.7	0.84	13
0925	7.94		100	7.32	126	6.37	-35.2	0.69	15
0930	7.88		100	7.25	120	6.33	-29.6	0.62	9.8
0935	7.90		100	7.42	117	6.25	-25.3	0.58	15
0940	7.91		100	7.50	114	6.18	-20.8	0.51	22
0945	7.90		100	7.10	112	6.17	-21.8	0.46	17
0950	7.90		100	7.24	112	6.16	-21.6	0.45	16
0955	7.91		100	7.44	111	6.14	-20.7	0.47	12
1000	7.90		100	6.24	106	6.12	-20.1	0.55	12
1005	7.65		100	6.43	106	6.10	-21.8	0.59	8.5
1010	7.85		100	6.23	105	6.10	-21.9	0.55	7.9
1015	7.90		100	6.31	106	6.09	-21.8	0.56	9.1
1020	7.92		100	6.29	109	6.09	-23.3	0.51	4.7
1025	Sample		Collected						

COMMENTS:

Signature:

Nobis	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of Rev.: 0
		Prepared by: John St. John	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s):

Temperature Range:
Precipitation:
Wind Speed/Direction:

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: AS1-14D2
Sample Date / Time: 12/16/08 11:20

QA/QC Sample: Duplicate
QA/QC Sample Time: 11:55
Initial Water Level: 6.457 33.6

Equipment Information

Pump Type: Peri
Pump Name/ID: Geopump E/Z Loader II
Water Level Name/ID: Solinst 101 - 35452

Multimeter Name/ID: YSI-556
Turbidity Name/ID: Lamotte 2020

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
8:48	6.57			Set up pump, fill flow-through cell, etc.					
~~8:50~~		Delay	75						
9:00	6.75	→	340	7.64	577	6.46	32.6	8.5	1.8
9:05	6.77		360	8.17	588	6.75	11.3	4.5	1.5
9:10	6.80		400	8.31	589	6.73	5.9	5.0	0.95
9:20	6.74		360	8.49	588	6.82	0.0	4.7	0.90
—	Generator		Stopped		- Refill Gas				—
9:35	6.75		320	8.10	577	6.76	16.7	5.3	1.0
9:40	6.77		340	8.43	589	6.80	8.3	3.6	0.30
9:45	6.77		340	8.38	587	6.78	4.9	3.0	0.40
9:50	6.78		350	8.45	586	6.73	-14.0	2.8	0.25
9:55	6.79		340	8.44	586	6.71	-39.4	2.5	0.15
10:00	6.80		350	8.41	584	6.73	-26.1	3.5	0.20
10:05	6.79		340	8.46	584	6.75	-19.6	3.2	0.05
10:10	6.79		340	8.41	584	6.72	-19.2	3.7	0.15
10:15	6.78		335	8.34	583	6.75	34.6	3.8	0.10
10:20	6.79		340	8.33	583	6.72	-36.8	3.0	0.15
10:25	6.78		350	8.20	582	6.73	-26.0	4.5	0.20
10:30	6.78		350	8.38	583	6.69	-41.8	3.3	0.20

COMMENTS:

Signature:

NOLS	**LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET**	SOP No: SA-003 Date: 8/21/2007	Page: 2 of 2 Rev.: 0
		Prepared by:	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): John St. John

Temperature Range:
Precipitation:
Wind Speed/Direction:

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: ASI-14D2
Sample Date / Time:

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level:

Equipment Information

Pump Type:
Pump Name/ID:
Water Level Name/ID:

Multimeter Name/ID:
Turbidity Name/ID:

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
				Set up pump, fill flow-through cell, etc.					
JS 10:35	6.78								
~~10:40~~	~~6.78~~		350	8.31	582	6.68	-23.4	2.4	0.20
10:40	6.78		350	8.35	582	6.66	-28.4	3.0	0.15
10:45	6.78		350	8.28	582	6.61	-19.8	2.2	0.20
10:50	6.78		350	8.28	581	6.61	-19.7	1.9	0.00
10:55	6.77		350	8.32	582	6.48	-15.4	2.7	0.00
11:00	6.78		350	8.26	581	6.56	-31.4	2.9	0.00
11:05	6.78		350	8.32	582	6.55	-14.3	1.9	0.00
11:10	6.78		350	8.29	581	6.58	-17.6	2.2	0.00
11:15	6.78		350	8.33	581	6.56	-23.9	1.7	0.00
11:20			SAMPLE TAKEN						
11:55		Duplicate Sample Taken							

COMMENTS:

Signature:

Nobis	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of Rev.: 0
		Prepared by:	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): Danielle Gray

Temperature Range: 20s
Precipitation: N/A
Wind Speed/Direction:

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: AS I - 23 D2
Sample Date / Time: 12/16/03 1505

QA/QC Sample: MS/MSD
QA/QC Sample Time: 1530/1547
Initial Water Level: 7.01

Equipment Information

Pump Type: Peristaltic
Pump Name/ID: Geo Tech 2219
Water Level Name/ID: Solinst Model 101

Multimeter Name/ID: YSI 600 XL
Turbidity Name/ID: LaMotte 2020

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
				Set up pump, fill flow-through cell, etc.					
1410	7.23	N/A	200	8.49	838	6.62	-52.7	3.64	5.31
1415	7.26		200	8.40	868	6.63	-47.4	2.59	6.53
1420	7.26		200	8.92	865	6.60	-38.1	1.77	3.19
1425	7.26		200	8.92	860	6.59	-35.2	1.54	3.89
1430	7.28		200	8.89	850	6.58	-35.1	1.42	2.5
1435	7.30		300	8.84	850	6.58	-32.3	1.42	0.30
1440	7.30		350	8.80	843	6.58	-31.9	1.43	0.10
1445	7.30		350	8.73	839	6.58	-30.8	1.51	0.55
1450	7.30		350	8.66	831	6.58	-30.2	1.47	0.00
1455	7.30		350	8.59	831	6.52	-30.3	1.43	0.50
1500	7.30		350	8.60	328	6.58	-30.5	1.40	0.00
1505	Sample Collected								
1530	MS Collected								
1547	MSD Collected								

COMMENTS: PID reading over wellhead = 0.0 ppm.

Signature: Danielle Gray

	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of 2 Rev.: 0
		Prepared by: John St John	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): John St John

Temperature Range: 20°
Precipitation: NONE
Wind Speed/Direction: 5mph

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: AS1-233
Sample Date / Time: 12-16-08

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 13:40

Equipment Information

Pump Type: Peristaltic
Pump Name/ID: Geopump Easy-load II
Water Level Name/ID: Solinst # 34452

Multimeter Name/ID: YSI-556
Turbidity Name/ID: Lamotte 2020 4303

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
13:40	8.32	Problems w/ Pump		Set up pump, fill flow-through cell, etc.					
14:20	15.10		220	8.67	656	6.16	34.6	39.4	7.1
14:25	14.38		230	8.60	658	6.04	40.6	37.2	6.8
14:30	14.63		220	8.69	645	5.74	49.4	26.3	2.1
14:35	13.82		220	8.70	629	5.54	50.4	20.7	0.85
14:40	13.42		220	8.54	615	5.43	50.4	19.1	0.20
14:45	13.10		230	8.58	604	5.41	49.6	18.2	0.30
14:50	13.30		220	8.37	591	5.46	47.6	16.6	0.00
14:55	13.40		220	8.13	575	5.38	46.0	13.3	0.00
15:00	13.45		220	8.25	570	5.23	48.5	14.1	0.00
15:05	13.40		220	7.97	574	5.11	49.3	13.9	0.00
15:10	13.45		220	8.11	575	4.88	50.4	12.3	0.00
15:15	13.40		220	8.17	586	4.84	45.6	11.2	0.00
15:20	13.40		220	8.04	593	4.78	29.3	11.1	0.00
15:25	13.35		220	8.10	591	4.77	25.1	10.9	0.00
15:30	13.40		220	8.23	595	4.66	9.1	10.5	0.00
15:35	13.40		220	8.26	599	4.95	-4.2	10.9	0.00
15:40	13:30		230	8.23	605	4.86	-3.9	10.4	0.00
15:45	13:35		230	8.10	618	4.90	-19.5	9.7	0.00

20.8

COMMENTS:

Signature: John St John

	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 2 of 2 Rev.: 0
		Prepared by: John St. John	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): John St. John

Temperature Range: 20s
Precipitation: None
Wind Speed/Direction: 5mph

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: AS1.23S
Sample Date / Time: 12/16/08

QA/QC Sample:
QA/OC Sample Time: 16:25
Initial Water Level: 13:40

Equipment Information

Pump Type: Peri
Pump Name/ID: Geopump E/L II
Water Level Name/ID: Solinst 102

Multimeter Name/ID: YSI-556
Turbidity Name/ID: Lamotte 2020

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
~~15:50~~	~~13:40~~		230	~~8.08~~	Set up pump, fill flow-through cell, etc.				
15:50	13:40		230	8.08	5.94	4.75	-9.3	8.6	0.00
15:55	13:40		230	8.02	593	4.75	-7.7	8.8	0.00
15:60	13.40		230	8.04	593	4.67	-7.2	8.3	0.00
16:05	13.40		230	8.06	588	4.71	-4.6	8.1	0.00
16:10	13.40		230	8.03	586	4.60	-14.7	7.6	0.00
16:15	13.40		230	8.08	584	4.62	-15.8	7.5	0.00
16:20	13.40		230	8.06	591	4.57	-9.6	6.5	0.00
16:25			SAMPLE TAKEN						

COMMENTS:

Signature: John St. John

Nobis	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of 1 Rev.: 0
		Prepared by: Danielle Gray	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): Danielle Gray

Temperature Range: Cold
Precipitation: Snow
Wind Speed/Direction:

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: ARC-3
Sample Date / Time: 12/17/08 1040

QA/QC Sample: N/A
QA/QC Sample Time: N/A
Initial Water Level: 4.35

Equipment Information

Pump Type: Peri
Pump Name/ID: U.S. Environmental
Water Level Name/ID: Solinst

Multimeter Name/ID: YSI 600 XL
Turbidity Name/ID: LaMotte 2020

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
				Set up pump, fill flow-through cell, etc.					
1000	4.30		200	10.17	44	6.49	190.6	10.95	45
1005	4.30		200	10.49	45	6.09	201.2	10.91	33
1010	4.32		200	10.50	45	5.89	205.3	10.96	23
1015	4.28		200	10.55	45	5.74	207.2	11.03	14
1020	4.48		200	10.54	45	5.75	208.2	11.04	8.7
1025	4.47		200	10.57	45	5.72	208.0	11.07	7.8
1030	4.48		200	10.60	45	5.74	208.7	11.08	5.7
1035	4.48		200	10.61	46	5.72	208.6	11.09	4.6
1040	Sample Collected								

COMMENTS:

Began using GeoTech KECK Water Level Meter at 1020 reading.

Signature: Danielle Gray

Nobis	**LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET**	SOP No: SA-003 Date: 8/21/2007	Page: 1 of 1 Rev.: 0
		Prepared by: John St John	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): John St. John

Temperature Range: 20s
Precipitation: None
Wind Speed/Direction: 5mph-S

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: OE-2
Sample Date / Time: 12/17/08 - 14:20

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level:

Equipment Information

Pump Type: Peri
Pump Name/ID: 12/17/08 # 489
Water Level Name/ID: Solinst 101 - 36452

Multimeter Name/ID: YSI 556 # 06108
Turbidity Name/ID: Lamotte 2020

WELL ID: OE-2A

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
				Set up pump, fill flow-through cell, etc.					
13:20	7.42								
13:25	7.85		300	7.21	1148	5.97	31.8	12.0	55
13:30	7.87		280	7.85	1273	7.04	-95.8	7.6	23
13:35	7.80		260	7.92	1287	7.36	-124.3	6.6	25
13:40	7.82		260	8.02	1289	7.58	-134.9	5.1	19
13:45	7.82		250	8.05	1282	7.61	-132.6	4.8	21
13:50	7.80		250	8.05	1277	7.56	-144.8	4.7	18
13:55	7.80		250	8.07	1276	7.62	-151.4	4.4	13
14:00	7.81		255	8.07	1275	7.58	-154.2	4.3	9.7
14:05	7.81		250	8.09	1274	7.63	-154.1	4.1	6.3
14:10	7.81		250	8.08	1273	7.63	-154.3	4.1	5.8
14:15	7.81		250	8.07	1274	7.63	-152.5	4.0	6.3
14:20	—	SAMPLE TAKEN				—			

COMMENTS:

Signature: John St. John

Nobis	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of Rev.: 0
		Prepared by: Danielle Gray	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): Danielle Gray

Temperature Range: Wicked Cold
Precipitation: None
Wind Speed/Direction: Slight Breeze

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: OE-2B
Sample Date / Time: 12/17/08 1435

QA/QC Sample: N/A
QA/QC Sample Time: N/A
Initial Water Level: 7.34

Equipment Information

Pump Type: Peri
Pump Name/ID: GeoPump #469
Water Level Name/ID: KECK - 100'

Multimeter Name/ID: YSI 600XLM
Turbidity Name/ID: LaMotte 2020

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
1325			300	Set up pump, fill flow-through cell, etc.					
1330	7.49		200	8.00	39	5.09	205.0	5.64	70
1335	7.49		200	8.14	40	5.07	213.2	5.52	60
1340	7.50		200	8.20	44	5.06	219.3	5.46	60
1345	7.49		200	8.15	45	5.05	218.6	5.38	55
1350	7.49		200	8.09	48	5.06	208.5	5.41	39
1355	7.49		200	8.22	55	5.08	202.3	5.43	28
1400	7.49		200	8.26	60	5.11	198.5	5.45	18
1405	7.49		200	8.21	60	5.12	188.6	5.40	12
1410	7.49		200	8.29	61	5.12	167.4	5.27	8.7
1415	7.49		200	8.22	62	5.13	162.0	5.43	5.7
1420	7.49		200	8.19	64	5.14	162.1	5.26	2.9
1425	7.50		200	8.23	66	5.13	163.6	5.24	1.2
1430	7.50		200	8.24	65	5.13	164.6	5.21	1.5
1435	Sample Collected								

COMMENTS:

Signature: Danielle Gray

	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of 1 Rev.: 0
		Prepared by: Ken Marks	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): Ken Marks

Temperature Range: 25 to 30
Precipitation: Yes Snow
Wind Speed/Direction: N/A

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: BC-1
Sample Date / Time: 12-17-08 1055

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 8.18

Equipment Information

Pump Type: Geo Pump
Pump Name/ID:
Water Level Name/ID:

Multimeter Name/ID:
Turbidity Name/ID:

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
0850	8.18	N/A	220	Set up pump, fill flow-through cell, etc.					
0940	8.30		220	10.83	1526	7.28	-141.8	2.20	30.2
0945	8.30		220	10.90	1552	7.28	-147.2	1.11	10.1
0950	8.30		220	10.95	1688	7.29	-149.3	0.80	7.11
0955	8.29		220	10.94	1692	7.29	-151.7	0.73	1.20
1000	8.29		220	10.93	1411	7.31	-164.4	0.81	1.13
1005	8.29		220	11.04	1291	7.34	-170.7	0.77	1.05
1010	8.29		220	11.10	1108	7.35	-172.0	0.86	1.01
1015	8.29		220	11.08	1127	7.36	-171.6	0.71	1.00
1020	8.29		220	11.02	1198	7.36	-172.1	0.60	1.01
1025	8.29		220	11.01	1257	7.35	-172.0	0.56	1.03
1030	8.29		220	11.02	1207	7.35	-171.2	0.61	1.01
1035	8.29		220	11.02	1210	7.35	-170.8	0.67	1.00
1040	8.29		220	11.03	1267	7.35	-169.8	0.69	1.00
1045	8.29		220	11.01	1267	7.35	-170.7	0.67	1.02
1050	8.29		220	11.00	1269	7.35	-171.0	0.66	1.01

COMMENTS: Purge water clear. Slight Odor?

Signature: Ken Marks

Nolos	**LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET**	SOP No: SA-003 Date: 8/21/2007	Page: 1 of 1 Rev.: 0
		Prepared by: Ken Marks	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): Ken Marks

Temperature Range: 25 to 30
Precipitation: light snow
Wind Speed/Direction: light

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: BR-1
Sample Date / Time: 12-17-08 1315

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 8.77

Equipment Information

Pump Type: Geo-Pump
Pump Name/ID:
Water Level Name/ID:

Multimeter Name/ID:
Turbidity Name/ID:

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)	
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10	
1200	8.77	N/A	120	Set up pump, fill flow-through cell, etc.						
1220	8.91		120	10.19	65537	12.41	-132.2	5.01	10.7	
1225	8.90		120	9.93	65588	12.38	-126.1	4.10	24.1	
1230	8.90		120	9.89	~~600~~ 14M	12.42	-122.8	3.85	27.3	S.Con=65075
1235	8.88		120	10.13	65909	12.42	-120.9	3.49	21.1	
1240	8.89		120	9.96	66203	12.42	-121.9	3.34	19.6	
1245	8.89		120	9.85	66256	12.43	-122.4	3.37	11.6	
1250	8.89		120	9.81	66232	12.44	-120.3	3.55	11.0	
1255	8.89		120	9.73	66245	12.44	-119.6	3.51	10.6	
1300	8.89		120	9.74	66251	12.43	-119.3	3.31	9.31	
1305	8.89		120	9.77	66255	12.43	-119.5	3.33	9.33	
1310	8.89	✓	120	9.76	66257	12.43	-120.1	3.34	9.32	

COMMENTS:

Signature: Ken Marks

Nobis	**LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET**	SOP No: SA-003 Date: 8/21/2007	Page: 1 of Rev.: 0
		Prepared by: John St. John	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): John St. John

Temperature Range: 20s
Precipitation: Light Snow
Wind Speed/Direction: 5 mph SE

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: Bm 3D
Sample Date / Time: 12/17/08

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 6.42 30.35

Equipment Information

Pump Type: Peri
Pump Name/ID: Geo-Pump #469
Water Level Name/ID: Solinst 101 - 36452

Multimeter Name/ID: YSI 556 #06108
Turbidity Name/ID: Lamotte 2020 #4303

WELL ID: Bm 3D

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
9:25	6.88		300	Set up pump, fill flow-through cell, etc.					
9:30	6.82		260	9.80	712	6.74	-119.5	3.3	95
9:35	6.84		250	10.09	718	6.77	-122.0	3.7	85
9:40	6.83		250	10.14	722	6.80	-107.4	4.9	80
9:45	6.84		250	10.12	732	6.78	-130.2	3.5	55
9:50	6.84		250	10.14	732	6.79	-111.6	3.2	50
9:55	6.84		250	10.13	732	6.79	-120.6	2.3	40
10:00	6.84		250	10.33	738	6.70	-127.2	2.2	45
10:05	6.83		250	10.27	742	6.79	-125.5	2.3	45
10:10	6.84		250	10.27	743	6.79	-128.2	2.0	25
10:15	6.84		250	10.14	745	6.77	-121.6	2.4	26
10:20	6.84		250	10.31	747	6.76	-116.5	2.3	27
10:25	6.84		250	10.31	747	6.76	-126.8	2.3	23
10:30	6.84		250	10.26	749	6.75	-128.7	2.3	23
10:35	6.84		250	10.23	755	6.75	-133.7	2.3	21
10:40			SAMPLE TAKEN						

COMMENTS:

Signature: John St. John

	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of 1 Rev.: 0
		Prepared by: Ken Marks	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): Ken Marks

Temperature Range: 25 to 30
Precipitation: None
Wind Speed/Direction: 1+5 mph NW

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: ASI-15 D2
Sample Date / Time: 12-18-08 1000

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 7.11

Equipment Information

Pump Type: Geo-Pump
Pump Name/ID:
Water Level Name/ID:

Multimeter Name/ID: 06K 1082
Turbidity Name/ID:

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
0855	7.11	N/A	225	Set up pump, fill flow-through cell, etc.					
0910	7.17		225	8.57	1011	7.01	-118.1	2.02	4.29
0915	7.17		225	8.70	1014	6.96	-126.6	1.05	4.11
0920	7.17		225	8.94	995	7.00	-141.7	0.80	4.02
0925	7.17		225	8.99	990	7.02	-152.3	0.51	4.04
0930	7.17		225	9.09	987	7.03	-159.8	0.47	4.00
0935	7.17		225	9.16	983	7.05	-167.6	0.43	4.01
0940	7.17		225	9.10	987	7.05	-167.9	0.44	3.89
0945	7.17		225	9.10	986	7.05	-168.0	0.42	3.87
0950	7.17		225	9.13	977	7.06	-168.5	0.41	3.81
0955	7.17		225	9.12	981	7.06	-168.4	0.39	3.82

COMMENTS: Very Clear Slight Odor? 1.5" well
Good Condition. Good Recharge

Signature: Ken Marks

NOVA	**LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET**	SOP No: SA-003 Date: 8/21/2007	Page: 1 of Rev.: 0
		Prepared by: Ken Marks	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): Ken Marks

Temperature Range: 25 - 30
Precipitation: None
Wind Speed/Direction: 1 to 7 NW

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: BW-135
Sample Date / Time: 12-19-08 1430

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 5.65

Equipment Information

Pump Type: Geo Pump
Pump Name/ID:
Water Level Name/ID:

Multimeter Name/ID:
Turbidity Name/ID:

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
1300	6.5	N/A	125	Set up pump, fill flow-through cell, etc.					
1345 ~~1354~~			125	7.13	683	5.74	97.9	2.05	5.0
1350			125	7.18	671	5.74	110.8	1.88	1.52
1355			125	7.28	664	5.71	132.9	1.87	2.32
1400			125	7.21	654	5.71	121.3	2.24	2.11
1405			125	7.20	651	5.71	129.3	2.50	2.14
1410			125	7.17	648	5.70	135.4	2.66	2.19
1415			125	7.20	645	5.70	132.3	2.80	2.20
1420			125	7.12	642	5.70	134.5	3.17	2.69
1425			125	7.06	639	5.70	136.1	3.89	2.61

COMMENTS: TD = 16.77

Signature: Ken Marks

Nobis	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of Rev.: 0
		Prepared by: Danielle Gray	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): Danielle Gray

Temperature Range:
Precipitation: N/A
Wind Speed/Direction: N/A

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: ASI-02 D2
Sample Date / Time: 12/18/08

QA/QC Sample: Duplicate
QA/QC Sample Time:
Initial Water Level: 6.75

Equipment Information

Pump Type: Peristaltic
Pump Name/ID: GeoPump #469
Water Level Name/ID: KECK 100'

Multimeter Name/ID: YSI 600XLM
Turbidity Name/ID: LaMotte 2020

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
				Set up pump, fill flow-through cell, etc.					
0910	7.08		150	9.33	923	7.11	-109.4	1.91	21
0915	7.04		150	9.78	974	7.04	-117.4	1.11	19
0920	7.04		175	10.04	1031	6.98	-127.7	0.81	17
0925	7.04		175	10.07	1047	6.96	-134.4	0.67	12
0930	7.05		175	10.23	1081	6.94	-137.6	0.61	9.2
0935	7.05		175	10.24	1078	6.93	-139.2	0.65	5.2
0940	7.05		175	10.25	1084	6.93	-140.1	0.66	3.2
0945	7.06		200	10.21	1094	6.92	-140.7	0.64	2.8
0950	7.06		200	10.10	1081	6.92	-141.3	0.60	1.2
0955	7.06		200	10.11	1080	6.93	-141.6	0.54	1.1
1000	7.07		200	10.26	1080	6.92	-142.7	0.49	0.0
1005	7.07		200	10.25	1083	6.92	-143.7	0.49	0.0
1010	7.08		200	10.28	1088	6.92	-143.8	0.44	0.0
1015	Sample Collected								

COMMENTS:

Signature: Danielle Gray

Nobis	**LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET**	SOP No: SA-003 Date: 8/21/2007	Page: 1 of 2 Rev.: 0
		Prepared by: John St. John	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): John St. John

Temperature Range: High 20s Sunny
Precipitation: None
Wind Speed/Direction: None

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: AS1-05D2
Sample Date / Time: 12/18/08

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 6.82

Equipment Information

Pump Type: Peristaltic
Pump Name/ID: GeoPump EL2 #499
Water Level Name/ID: Solinst 101 35452

Multimeter Name/ID: YSI 556 06J08 C37
Turbidity Name/ID: Lam. He 2020 #4303

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
9:15	6.85			Set up pump, fill flow-through cell, etc.					
9:30	7.10		260	6.99	382	6.70	-78.6	19.7	11
9:35	7.45		270	7.83	400	8.11	-187.9	6.2	3.5
9:40	7.40		240	7.74	403	7.94	-193.2	5.0	0.70
9:45	7.40		240	7.61	405	7.86	-195.2	4.8	0.70
9:50	7.40		240	7.56	402	7.80	-195.2	4.5	0.70
9:55	7.40		240	7.64	403	7.81	-196.6	4.0	0.45
10:00	7.40		240	7.86	405	7.80	-196.8	3.6	0.30
10:05	7.41		250	7.96	407	7.82	-198.9	3.8	0.30
10:10	7.42		240	8.12	411	7.87	-201.2	3.1	0.20
10:15	7.42		240	8.22	412	7.87	-201.4	2.7	0.25
10:20	7.42		240	8.35	415	7.88	-201.6	2.6	0.00
10:25	7.44		250	8.21	414	7.88	-202.3	2.6	0.00
10:30	7.44		240	8.12	414	7.90	-202.0	2.7	0.00
10:35	7.42		240	8.03	414	7.85	-199.0	3.3	0.00
10:40	7.42		240	7.83	410	7.84	-196.2	2.7	0.00
10:45	7.42		240	7.91	412	7.87	-197.8	2.7	0.00
10:50	7.42		240	7.71	411	7.85	-196.6	2.9	0.00
10:55	7.42		240	7.81	411	7.82	-195.8	2.7	0.00

COMMENTS:

Signature: John St. John

	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 2 of 2 Rev.: 0
		Prepared by: John St. John	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): John St. John

Temperature Range:
Precipitation:
Wind Speed/Direction:

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: A31-05D2
Sample Date / Time: 12/18/08 11:35

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 6.82

Equipment Information

Pump Type: Peristaltic
Pump Name/ID: Geopump E/LII #499
Water Level Name/ID: Solinst 101 35452

Multimeter Name/ID: YSI 556 06108
Turbidity Name/ID: ~~Lamotte 2020~~ #4303

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
cont.				Set up pump, fill flow-through cell, etc.					
11:00	7.42		240	7.78	412	7.83	-196.0	2.6	0.00
11:05	7.42		240	7.81	412	7.82	-195.3	2.5	0.00
11:10	7.42		240	8.04	414	7.82	-196.4	2.4	0.00
11:15	7.42		240	8.05	413	7.84	-197.0	2.3	0.00
11:20	7.42		240	8.22	417	7.89	-200.1	2.1	0.00
11:25	7.42		240	8.30	417	7.86	-199.7	2.3	0.00
11:30	7.42		240	8.11	415	7.84	-198.1	2.1	0.00
11:35			SAMPLE TAKEN						

COMMENTS:

Signature: John St. John

Nobis	**LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET**	SOP No: SA-003 Date: 8/21/2007	Page: 1 of 2 Rev.: 0
		Prepared by: John St. John	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): John St. John

Temperature Range: 30s
Precipitation: NONE
Wind Speed/Direction: NONE

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: AS1 35D2
Sample Date / Time: 12/18/08

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 6.27

Equipment Information

Pump Type: Peristaltic
Pump Name/ID: Geopump E/LII #499
Water Level Name/ID: Solinst 101 35452

Multimeter Name/ID: YSI 556 06108
Turbidity Name/ID: Lamotte 2020 ~~#4303~~ #4303

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (µS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
13:20	6.27			Set up pump, fill flow-through cell, etc.					
13:25	6.57		220	4.26	481	7.72	-48.6	33.9	9.3
13:30	6.59		220	3.12	485	7.79	-151.4	10.8	6.7
13:35	6.61		220	3.90	492	7.85	-164.9	6.9	3.0
13:40	6.61		210	4.22	503	7.75	-170.6	5.5	2.5
13:45	6.61		210	4.24	504	7.82	-171.4	5.4	1.7
13:50	6.61		210	4.27	506	8.53	-175.2	5.1	2.0
13:55	6.61		210	4.76	511	7.85	-175.5	4.7	2.0
14:00	6.61		220	4.90	514	7.84	-176.3	4.0	0.95
14:05	6.61		220	4.83	513	7.82	-176.9	4.3	0.50
14:10	6.61		220	4.90	514	7.82	-178.1	4.0	0.60
14:15	6.61		220	5.25	517	7.81	-190.5	3.9	0.50
14:20	6.61		220	5.45	522	7.87	-182.7	4.0	0.00
14:25	6.61		220	5.83	527	7.91	-183.8	3.6	0.00
14:30	6.61		220	6.26	534	7.77	-184.2	3.3	0.00
14:35	6.61		220	6.42	538	7.72	-183.9	3.4	0.00
14:40	6.61		220	6.56	540	7.77	-183.0	3.5	0.00
14:45	6.61		220	6.63	542	7.81	-183.4	3.4	0.00
14:50	6.61		220	6.85	545	7.79	-185.5	3.3	0.00

COMMENTS:

Signature: John St. John

	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 2 of 2 Rev.: 0
		Prepared by: John St. John	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): John St. John

Temperature Range: 20s
Precipitation: None
Wind Speed/Direction: None

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: AS1 35D2
Sample Date / Time: 12/18/08

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 6.27

Equipment Information

Pump Type: Peristaltic
Pump Name/ID: Geopump E/L II #499
Water Level Name/ID: Solinst 101 35452

Multimeter Name/ID: YSI-556 06308
Turbidity Name/ID: Lamotte 2020 #4303

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
Continued				Set up pump, fill flow-through cell, etc.					
14:55	6.61		220	7.01	548	7.79	-185.0	3.2	0.00
15:00	6.61		220	6.85	545	7.77	-184.0	3.1	0.00
15:05	6.61		220	6.74	543	7.76	-184.0	3.0	0.20
15:10	6.61		220	6.93	547	7.76	-184.8	3.0	0.25
15:15	6.61		220	6.86	546	7.75	-182.9	2.9	0.20
15:20	6.61		220	6.81	544	7.74	-183.8	2.8	0.15
15:25			SAMPLE TAKEN						

COMMENTS:

Signature:

Nolis	**LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET**	SOP No: SA-003 Date: 8/21/2007	Page: 1 of Rev.: 0
		Prepared by:	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): ELDRID MOSSMAN

Temperature Range:
Precipitation:
Wind Speed/Direction:

SAMPLE INFORMATION

Sampling Round: IV April 2008 Long-Term Monitoring
Sample ID: MI-8
Sample Date / Time: 12-19-08 1020

QA/QC Sample: MS/MSD
QA/QC Sample Time: 1020
Initial Water Level: 4.1

Equipment Information

Pump Type: Peristaltic
Pump Name/ID:
Water Level Name/ID: KECK 100'

Multimeter Name/ID: YSI 600 XLM
Turbidity Name/ID: LaMotte 2020

WELL ID: 0.3ft

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
				Set up pump, fill flow-through cell, etc.					
09:08	4.2		300	BATT EQ/	CHANGED	IN YSI			2.7
09:12	4.2		300	8.55	487	5.77	240.7	1.49	2.9
09:17	4.2		300	8.56	508	5.57	250.6	1.55	2.5
09:22	4.25		300	8.57	518	5.52	251	1.58	2.2
09:27	4.25		300	8.63	522	5.50	245.5	1.65	2.3
09:32	4.25		300	8.67	532	5.49	240.1	1.68	2.1
09:37	4.25		300	8.45	534	5.49	237.2	1.71	1.99
09:42	4.25		300	8.57	531	5.48	237.8	1.76	1.90
09:47	4.25		360	8.52	537	5.48	238.1	1.78	1.84
09:52	4.25		300	8.53	535	5.49	238.4	1.81	1.93
09:57	4.25		300	8.56	545	5.49	237.1	1.79	2.21
10:02	4.25		300	8.66	539	5.47	240.7	1.80	2.71
10:07	4.25		300	8.78	543	5.47	242.8	1.80	2.
10:12	4.25		300	8.73	544	5.47	243.9	1.79	2.1
10:17	4.25		300	8.77	549	5.47	245	1.81	
1020	Sample		Collected						

COMMENTS:

Signature:

NOBIS	**LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET**	SOP No: SA-003 Date: 8/21/2007	Page: 1 of 1 Rev.: 0
		Prepared by: John St. John	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): John St. John

Temperature Range: Teens
Precipitation: None
Wind Speed/Direction: None

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: ASI-11D2
Sample Date / Time: 12/19/08 9:55

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 2.86

Equipment Information

Pump Type: Peri
Pump Name/ID: Geopump E/L II #2219
Water Level Name/ID: Solinst 101 #35452

Multimeter Name/ID: YSI 556 06J08
Turbidity Name/ID: Lamotte 2020 #4197

WELL ID: ASI-11D2

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
8:30	2.86			Set up pump, fill flow-through cell, etc.					
8:40	3.12	240		9.13	404	6.22	-27.6	21.2	12
8:45	3.12	240		9.72	423	7.13	-126.0	8.9	6.8
8:50	3.12	240		9.87	432	7.21	-141.7	7.7	5.3
8:55	3.12	240		10.20	446	7.42	-169.5	4.2	5.0
9:00	3.12	240		10.30	447	7.55	-195.6	2.5	2.3
9:05	3.13	240		10.31	447	7.56	-197.3	2.4	2.2
9:10	3.14	250		10.29	448	7.54	-200.3	2.6	3.2
9:15	3.14	250		10.15	446	7.56	-197.6	2.4	2.3
9:20	3.14	250		10.18	445	7.56	-196.5	2.1	1.6
9:25	3.15	240		10.09	444	7.57	-198.8	2.1	1.9
9:30	3.13	240		10.00	444	7.57	-202.5	2.3	1.5
9:35	3.14	240		10.15	443	7.57	-205.3	2.5	1.3
9:40	3.14	240		10.13	442	7.57	-207.3	2.2	1.4
9:45	3.14	240		10.10	441	7.59	-208.6	2.2	1.4
9:50	3.14	240		10.07	438	7.59	-211.6	2.2	0.80
9:55		SAMPLE		TAKEN					

COMMENTS:

Signature: John St. John

LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET

SOP No: SA-003	Page: 1 of 1
Date: 8/21/2007	Rev.: 0

Prepared by: Ken Marks

Approved by:

Site Name: Commerce Street Plume Superfund Site

Project Number/Task: 80036.03 0330

Sampler(s): Ken Marks

Temperature Range: 25-30°F

Precipitation: None

Wind Speed/Direction: light

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring

Sample ID: AL-15

Sample Date / Time: 12-19-08 1050

QA/QC Sample:

QA/QC Sample Time:

Initial Water Level: 7.59

Equipment Information

Pump Type: Geo-Pump

Pump Name/ID:

Water Level Name/ID:

Multimeter Name/ID:

Turbidity Name/ID:

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
				Set up pump, fill flow-through cell, etc.					
1010	7.59	N/A							
1025	7.59		200	8.58	161	5.92	123.1	5.30	116
1030	7.59		200	8.47	168	5.74	130.0	3.77	21.7
1035	7.59		200	8.45	182	5.48	153.9	3.04	11.5
1040	7.59		200	8.45	183	5.42	181.2	2.48	4.86
1045	7.59		200	8.44	178	5.50	182.2	2.36	4.01

COMMENTS: TD = 14.31

Signature: Ken Marks

	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of 1 Rev.: 0
		Prepared by: Ken Marks	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): Ken Marks

Temperature Range: 25 to 30
Precipitation: None
Wind Speed/Direction: light

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: BM-3 S
Sample Date / Time: 12-19-08 940

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 7.42

Equipment Information

Pump Type: Geo Pump
Pump Name/ID:
Water Level Name/ID:

Multimeter Name/ID:
Turbidity Name/ID:

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
0905	7.51	N/A	200	Set up pump, fill flow-through cell, etc.					
0915	7.51		200	8.86	459	6.70	50.5	4.11	52.2
0920	7.51		200	9.16	476	6.64	51.9	3.21	40.1
0925	7.51		200	9.31	483	6.63	52.8	2.92	27.9
0930	7.51		200	9.24	487	6.57	64.9	2.68	23.2
0935	7.51		200	9.23	488	6.57	69.9	2.59	19.1

COMMENTS: TD = 15.30

Signature: Ken Marks

	LOW-FLOW/ LOW-STRESS GROUNDWATER SAMPLING LOG SHEET	SOP No: SA-003 Date: 8/21/2007	Page: 1 of 1 Rev.: 0
		Prepared by: Ken Marks	
		Approved by:	

Site Name: Commerce Street Plume Superfund Site
Project Number/Task: 80036.03 0330
Sampler(s): Ken Marks

Temperature Range: 18-23
Precipitation: None
Wind Speed/Direction: N 1+3 mph

SAMPLE INFORMATION

Sampling Round: April 2008 Long-Term Monitoring
Sample ID: BF-4
Sample Date / Time: 12-19-08 0840

QA/QC Sample:
QA/QC Sample Time:
Initial Water Level: 8.42

Equipment Information

Pump Type: Geo Pump
Pump Name/ID:
Water Level Name/ID:

Multimeter Name/ID:
Turbidity Name/ID:

WELL ID:

Time	Water Level Reading	Bladder Pressure/ Refill/ Discharge	Purge Rate (mL/min)	Temp (°C)	Specific Conductivity (mS/m)	pH	ORP / Eh3 (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-0.1	+/-10mV	3%	10% or <10
0800	8.42	N/A	200	Set up pump, fill flow-through cell, etc.					
0815	8.55		200	7.15	345	7.51	199.3	3.41	359
0820	8.55		200	7.05	281	7.21	151.0	2.25	210
0825	8.55		200	7.91	219	6.68	29.3	0.84	183
0830	8.55		200	8.71	208	6.55	-33.6	0.68	41
0835	8.55		200	8.78	206	6.55	-42.5	0.64	30

COMMENTS: TD= 12.60
0800=Purge cloudy orange light sheen, Signature: Ken Marks

APPENDIX A

Nobis Engineering, Inc. nobisengineering.com

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 5-17-10 Page 1 of 1 **Well ID :** AS1-04D2 04D2

Field Personnel Ken Marks Purging Start Time : 1550

Well Depth as installed (ft.): 35.5 Measured Well Depth (ft.): ~~34.4~~ 35.95

Screen Length in ft. 5 Screen Depth in ft. 30.5 Parameter Stabilization: (Circle) (Yes) / No

Depth to GW (ft.): 7.56 From: Top of PVC Two Hour Time Limit Reached ? (Circle) Yes (No)

Pump/Tubing Intake set (ft.): 33 From: Top of PVC Total Volume Purged, Including Drawdown (gallons): 1.5

Sample Designation AS1-04D2-051710A Time at Purge Completion: 1635

Sample Time 1640 Signature: Ken Marks

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geo-Pump 2 #

Multimeter model and serial number YSI 556 MPS-07H102056 Turbidity meter model and serial number Micro TPW 200805197

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

Weather: Mostly Sunny 70°F Wind E 1 to 5 mph.

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	
1600	N A	100	7.58	0.02	–	10.67	658	7.49	-106.3	6.24	3.21	Purge water clear. No odor.
1605		100	7.59	0.03	0.03	10.47	617	7.14	-118.1	4.04	3.11	
1610		150 ~~100~~	7.59	0.03	0.03	10.39	609	7.05	-114.4	1.92	3.07	
1615		150 ~~100~~	7.59	0.03	0.03	10.37	611	7.03	-109.8	0.98	2.91	
1620		150 ~~100~~	7.59	0.0	0.03	10.25	617	7.06	-107.9	0.76	1.07	
1625		150 ~~100~~	7.59	0.0	0.03	10.24	627	7.08	-108.5	0.62	0.96	
1630		150	7.59	0.0	0.03	10.26	627	7.07	-110.8	0.61	0.88	
1635		150	7.59	0.0	0.03	10.29	626	7.08	-110.4	0.57	0.81	

Ken Marks

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.

Nobis Engineering, Inc. nobisengineering.com

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 5/17/10 Page 1 of 1 **Well ID :** AS1-11D2

Field Personnel Josh Stewart Purging Start Time : 1558

Well Depth as installed (ft.): 40 Measured Well Depth (ft.): 39.89

Screen Length in ft. 5 Screen Depth in ft. 35 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 2.33 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 37.5 From: PVC Total Volume Purged, Including Drawdown (gallons): 4.25

Sample Designation AS1-11D2-051710A Time at Purge Completion: 1658

Sample Time 1650 Signature: Josh S

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

Multimeter model and serial number YSI geotech #2016 Turbidity meter model and serial number HF Scientific micro TPW #1925

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	
1605												Problem with flex tubing size
1610		350	2.74	0.41	0.41	NR	NR	NR	NR	NR	NR	
1615		350	2.74	0	0.41	11.35	1380	6.91	-108.6	6.70	4.21	
1620		350	2.74	0	0.41	11.23	1395	6.98	-119.0	2.26	3.13	
1625		350	2.74	0	0.41	11.16	1397	7.00	-118.4	0.83	2.49	
1630		350	2.74	0	0.41	11.17	1393	7.04	-122.9	0.61	1.50	
1635		350	2.74	0	0.41	11.19	1387	7.05	-129.3	0.50	1.27	
1640		350	2.74	0	0.41	11.20	1387	7.06	-128.0	0.48	2.39	
1645		350	2.74	0	0.41	11.20	1384	7.06	-128.8	0.50	1.14	
1650		Sample										

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.

Nobis Engineering, Inc. nobisengineering.com

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 5-18-10 Page 1 of 2 **Well ID :** AL-14

Field Personnel Ken Marks Purging Start Time : 1505

Well Depth as installed (ft.): 16 Measured Well Depth (ft.): 15.39

Screen Length in ft. 10 Screen Depth in ft. 6 - 16 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 6.26 From: Top of PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 11 From: ↓ Total Volume Purged, Including Drawdown (gallons): 8

Sample Designation AL-14051810 Time at Purge Completion: 1635

Sample Time 1640 Signature: Ken Marks

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

Multimeter model and serial number YSI 556 MPS #07H102056 ~~07H101~~ Turbidity meter model and serial number Micro TPW #200805197

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	
1510	N A	400	6.51	0.25	0.25	9.71	133	4.88	225.3	13.68	143.4	Cloudy Grayish No odor
1515		400	6.51	0.0	0.25	9.18	154	3.71	270.2	12.01	~~112.85~~ 110.5	110.5 Turb ↓
1520		400	6.51	0.0	0.25	8.93	192	4.53	208.9	9.21	72.36	Slighty cloudy No odor
1525		400	6.51	0.0	0.25	8.86	216	4.56	215.9	9.24	43.54	
1530		400	6.51	0.0	0.25	8.97	238	4.87	201.1	8.33	27.37	
1535		400	6.51	0.0	0.25	8.75	245	5.22	164.2	6.92	18.09	
1540		400	6.51	0.0	0.25	8.81	259	5.60	140.1	6.92	11.52	Purge water clear No odor
1545		400	6.51	0.0	0.25	8.82	271	5.73	136.6	6.70	7.90	
1550		400	6.51	0.0	0.25	8.68	277	5.75	138.0	6.68	6.71	
1555		400	6.51	0.0	0.25	8.72	282	5.99	125.9	6.65	6.03	
1600		400	6.51	0.0	0.25	8.81	289	5.89	~~1268~~ 126.8	6.47	5.57	
1605		400	6.51	0.0	0.25	8.77	291	5.84	128.7	6.51	5.07	

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.

Nobis Engineering, Inc. nobisengineering.com

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 5-18-10 Page 2 of 2 **Well ID :** AL-14

Field Personnel Ken Marks 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): 8

Sample Designation AL-14051810 Time at Purge Completion: _____

Sample Time _____ Signature: Ken Marks

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

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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	Page # 2 of 2
1610	N A	400	6.51	0.0	0.25	8.71	293	5.97	122.5	6.51	4.99	Well info see page #1
1615		400	6.51	0.0	0.25	8.70	295	5.89	126.7	6.49	4.97	Purge water clear. No odor.
1620		400	6.51	0.0	0.25	8.71	298	6.10	118.9	6.41	4.79	↓
1625		400	6.51	0.0	0.25	8.60	310	6.00	119.9	6.39	4.71	↓
1630		400	6.51	0.0	0.25	8.57	312	5.98	118.0	6.42	4.66	↓
1635		400	6.51	0.0	0.25	8.60	313	6.01	118.1	6.38	4.51	↓
						Ken Marks						

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.

Nobis Engineering, Inc. nobisengineering.com

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 5-18-10 Page 1 of 2 **Well ID :** ASI-14S

Field Personnel Ken Marks Purging Start Time : 1005

Well Depth as installed (ft.): 18.5 Measured Well Depth (ft.): 18.53

Screen Length in ft. ~~10~~ 10 Screen Depth in ft. 8.5 to 18.5 Parameter Stabilization: (Circle) (Yes) / No

Depth to GW (ft.): 4.87 From: Top of Steel well Two Hour Time Limit Reached ? (Circle) Yes / (No)

Pump/Tubing Intake set (ft.): 13.5 From: ↓ Total Volume Purged, Including Drawdown (gallons): 2

Sample Designation ASI-14S 051810 Time at Purge Completion: 1140

Sample Time 1145 Signature: Ken Marks

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geo-Pump 2

Multimeter model and serial number YSI 556 MPS #07H102056 Turbidity meter model and serial number Micro TPW #200805197

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

~~Eckw~~ Weather: Mostly Cloudy 62°F wind light.

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	
1015	N A	100	N/A	N/A	N/A	9.44	372	7.27	-116.0	17.84	41.12	slighty cloudy with black specks.
1020		100				8.67	315	6.96	-79.2	1.82	36.37	I could not fit water level
1025		100				8.72	300	6.71	-38.9	0.97	26.18	meter in well with tubbing
1030		100				8.66	290	6.61	-35.2	0.90	26.11	
1035		100				8.75	274	6.52	-27.8	1.18	27.08	
1040		100				8.88	261	6.33	-23.4	1.98	26.31	
1045		100				8.70	249	6.38	-24.1	1.87	27.17	
1050		100				8.59	233	6.36	-19.3	1.52	23.37	
1055		100				8.53	229	6.33	-20.5	1.41	18.92	Purge water clear Strong odor?
1100		100				8.55	230	6.31	-21.0	1.30	17.58	
1105		100				8.56	227	6.28	-19.6	1.15	11.21	
1115		100				8.57	225	6.30	-16.3	1.13	8.01	

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.

Nobis Engineering, Inc. nobisengineering.com

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 5-18-10 Page 2 of 2 **Well ID :** ASI-14 S
Field Personnel Ken Marks 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 1145 Signature: Ken Marks
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.)

Page # 2 of 2

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	
1115	N A	100	N/A	N/A	N/A	8.58	223	6.27	-13.8	1.10	7.22	Page # 2 of 2
1120		100				8.57	223	6.24	-14.0	1.06	5.61	see page #1 for well info
1125		100				8.52	222	6.20	-12.9	1.01	5.05	Purge water clear. strong odor.
1130		100				8.56	221	6.20	-13.5	1.08	4.97	
1135		100				8.57	220	6.21	-14.3	1.06	4.91	
1140		100				8.58	220	6.21	-14.1	1.02	4.98	

Ken Marks

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.

Nobis Engineering, Inc. nobisengineering.com

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 5-18-10 Page 1 of 1 **Well ID :** ASI-03 D2

Field Personnel Ken Marks Purging Start Time : 1250

Well Depth as installed (ft.): 30.00 Measured Well Depth (ft.): 30.72

Screen Length in ft. 5 Screen Depth in ft. 25-30 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 5.49 From: Top of PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From: ↓ Total Volume Purged, Including Drawdown (gallons): 2

Sample Designation ASI-03 D2 051810 Time at Purge Completion: 1350

Sample Time 1355 Signature: Ken Marks

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geo-pump 2

Multimeter model and serial number YSI-556 MPS #07H102056 Turbidity meter model and serial number Micro TPW #R00805197

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	
1300	N / A	100	5.51	0.02	0.02	11.17	1615	6.82	-91.8	7.00	20.69	I pulled old tubbing and
1305		100	5.53	0.02	0.04	10.99	1635	6.73	-89.3	6.77	27.37	replaced with new tubbing
1310		100	5.53	0.0	0.04	11.00	1619	6.87	-91.4	5.55	26.11	Purge water slightly cloudy
1315		100	5.53	0.0	0.04	10.96	1627	6.99	-96.2	3.12	21.73	↓
1320		100	5.53	0.0	0.04	10.94	1594	7.06	-98.7	1.07	12.82	Purge water clear
1325		100	5.53	0.0	0.04	10.87	1597	7.07	-100.2	0.98	9.54	
1330		100	5.53	0.0	0.04	11.01	1589	7.11	-100.8	0.75	7.61	
1335		100	5.53	0.0	0.04	11.23	1535	7.15	-101.2	0.73	5.33	
1340		100	5.53	0.0	0.04	11.00	1514	7.18	-101.8	0.71	3.61	
1345		100	5.53	0.0	0.04	11.04	1503	7.21	-100.1	0.69	3.22	
1350	↓	100	5.53	0.0	0.04	11.11	1503	7.20	-100.1	069	2.29	
							Ken Marks					

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.

Nobis Engineering, Inc. nobisengineering.com

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 5/18/10 Page 1 of 1 **Well ID :** ASI-14D2

Field Personnel K. Marks Purging Start Time : 0820

Well Depth as installed (ft.): 30 Measured Well Depth (ft.): 32.52

Screen Length in ft. 5 Screen Depth in ft. 25 to 30 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 6.11 From: Top of PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 27.5 From: Top of PVC Total Volume Purged, Including Drawdown (gallons): 1.25

Sample Designation ASI-14D2051810 Time at Purge Completion: 0855

Sample Time 0900 Signature: Ken Marks

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geo-Pump 2 #1455

Multimeter model and serial number YSI 556 MPS #07H102056 Turbidity meter model and serial number Micro TPW 200805197

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

Weather: Sun + Clouds 60°F Wind E 1 to 5 mph.

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	
0830	N A	150	6.22	0.11	–	8.18	844	7.02	-67.2	1.34	5.39	Purge water clear
0835		150	6.25	0.13	0.24	8.06	841	6.94	-74.4	0.71	3.07	
0840		150	6.25	0.0	0.24	8.10	841	6.98	-80.2	0.66	2.21	
0845		150	6.25	0.0	0.24	8.11	841	6.99	-79.1	0.53	1.72	
0850		150	6.25	0.0	0.24	8.20	839	6.93	-77.8	0.48	1.22	
0855		150	6.25	0.0	0.24	8.17	841	6.96	-78.3	0.46	1.12	

Ken Marks

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.

Nobis Engineering, Inc. nobisengineering.com

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 5/18/10 Page 1 of 1 **Well ID :** ASI-02D2 Field dup

Field Personnel J. Stewart Purging Start Time 0830

Well Depth as installed (ft.): 31 Measured Well Depth (ft.): 27.05

Screen Length in ft. 5 Screen Depth in ft. 26 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 6.66 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 28.5 From: PVC Total Volume Purged, Including Drawdown (gallons): 4.00

Sample Designation ASI-02D2-051810AD / ASI-02D2-051810AX Time at Purge Completion: 0930

Sample Time 0905 / 0910 Signature: [signature]

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

Multimeter model and serial number YSI #2016 Turbidity meter model and serial number HF Scientific micro TPW #1625

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	
0830	NA NA	350	7.12	0.46	0.46	NR	NR	NR	NR	NR	NR	
0835		350	7.13	0.01	0.47	10.77	1825	6.96	-83.9	4.65	98.36	
0840		350	7.13	0	0.47	10.53	1930	6.95	-95.7	1.25	44.78	
0845		350	7.13	0	0.47	10.54	1992	6.98	-97.7	0.43	21.32	
0850		350	7.13	0	0.47	10.56	2039	6.98	-100.7	0.37	20.98	
0855		350	7.13	0	0.47	10.57	2038	7.00	-102.9	0.29	21.14	
0900		350	7.13	0	0.47	10.57	2044	6.99	-102.1	0.28	20.96	
0905						Sample						
0910						DUP						

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.

Nobis Engineering, Inc. nobisengineering.com

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 5/18/10 Page 1 of 1 **Well ID :** ASI-23D2
Field Personnel Josh Stewart Purging Start Time : 1017
Well Depth as installed (ft.): 30 Measured Well Depth (ft.): 31.38
Screen Length in ft. 5 Screen Depth in ft. 25 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 6.88 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 27.5 From: PVC Total Volume Purged, Including Drawdown (gallons): 4.25
Sample Designation ASI-23D2-051810A Time at Purge Completion: 1110
Sample Time 1055 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) geo PUMP
Multimeter model and serial number YSI #1 2016 Turbidity meter model and serial number HF Scientific MicroTPW #1925
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	
1020	NA / NA	375	7.11	0.33	0.33	NR	NR	NR	NR	NR	NR	
1025		375	7.11	0.00	0.33	9.43	1217	6.86	-16.0	2.50	10.39	
1030		375	7.11	0	0.33	9.22	1203	6.71	-8.0	0.85	4.75	
1035		375	7.11	0	0.33	9.20	1203	6.64	-2.4	0.61	4.74	
1040		375	7.11	0	0.33	9.15	1204	6.57	0.6	0.50	1.94	
1045		375	7.11	0	0.33	9.17	1206	6.56	1.8	0.48	1.50	
1050		375	7.11	0	0.33	9.17	1207	6.55	1.3	0.49	1.48	
1055						Sample						

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

Rev.: 2

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

Date : 5/18/10 Page 1 of 1 **Well ID :** ASI-23S
Field Personnel Josh Stewart Purging Start Time : 1145
Well Depth as installed (ft.): 18 Measured Well Depth (ft.): ~~18.0~~ NA
Screen Length in ft. 10 Screen Depth in ft. 8 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): NA From: Steel Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 16 From: Steel Total Volume Purged, Including Drawdown (gallons): 0.50 (IS)
Sample Designation ASI-23S-051810A Time at Purge Completion: 1205
Sample Time 1310 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) geo pump
Multimeter model and serial number YSI # 2016 Turbidity meter model and serial number HF Scientific micro TPW 1925

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)
Well purged dry came back @ 1305 well had recovered sample collected at 1310; peristaltic pump used

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	
1150	NA NA	200	NA	NA	NA	NR	NR	NR	NR	NR	NR	
1155	↓ ↓	125	↓	↓	↓	10.89	507	7.36	-58.7	8.77	NR	
1200	↓ ↓	115	↓	↓	↓	11.09	497	6.65	-37.8	7.23	5.47	
1205	↓ ↓	100	↓	↓	↓	—	well	dry		—	—	

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

Rev.: 2

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

Date : 5/18/10 Page 1 of 1 **Well ID :** MI-2
Field Personnel Josh Stewart Purging Start Time : 1446
Well Depth as installed (ft.): 15 Measured Well Depth (ft.): 1494
Screen Length in ft. 5 Screen Depth in ft. 10 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 5.98 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 12.5 From: PVC Total Volume Purged, Including Drawdown (gallons): 2.00
Sample Designation MI-2-051810A Time at Purge Completion: 1538
Sample Time 1525 Signature: Josh Sc
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder 12 PSI 10 R 5D
Multimeter model and serial number YSI #2016 Turbidity meter model and serial number HF Scientific Micro TPW # 1925

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

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	
1450	5 / 10	150	6.10	0.12	0.12	NR	NR	NR	NR	NR	NR	15 PSI
1455		175	6.10	0	0.12	10.30	178	6.20	103.5	6.85	29.77	
1500		175	6.10	0	0.12	9.91	180	6.31	113.9	6.29	11.77	
1505		175	6.10	0	0.12	9.78	185	6.12	120.0	5.93	9.76	
1510		175	6.10	0	0.12	9.75	190	6.10	123.0	5.77	9.94	
1515		175	6.10	0	0.12	9.74	193	6.11	126.8	5.66	9.72	
1520		175	6.10	0	0.12	9.72	195	6.11	126.1	5.62	9.28	
1525		Sample										

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

Rev.: 2

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

Date : 5-19-10 Page 1 of 2 **Well ID :** BM-3D

Field Personnel Ken Marks Purging Start Time : 0855

Well Depth as installed (ft.): 29 Measured Well Depth (ft.): 30.39

Screen Length in ft. 5 Screen Depth in ft. 24-29 Parameter Stabilization: (Circle) Yes / (No)

Depth to GW (ft.): 5.88 From: Top of PVC Two Hour Time Limit Reached ? (Circle) (Yes) / No

Pump/Tubing Intake set (ft.): 26.5 From: ↓ Total Volume Purged, Including Drawdown (gallons): ~~3~~ 5

Sample Designation BM-3D 051910 Time at Purge Completion: 1100

Sample Time 1105 Signature: Ken Marks

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder - PSI = 30 Refill = 9.5 Discharge = 5.5

Multimeter model and serial number YSI 556 MPS 70H102056 Turbidity meter model and serial number Micro TPW 200805197

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

Weather: Cloudy 62°F Wind light on and off rain.

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	MS/MSD
0905	N A	200	6.33	0.45	-	10.18	970	6.39	-50.9	0.75	612.5	Purge water cloudy orange.
0910		200	6.33	0.00	0.45	10.02	977	6.21	-48.1	0.58	601.1	
0915		200	6.33	0.00	0.45	9.98	981	6.17	-49.6	0.49	543.0	
0920		200	6.33	0.0	0.45	9.91	978	6.14	-50.2	0.51	276.0	
0925		200	6.33	0.0	0.45	9.94	984	6.16	-53.6	0.60	229.7	
0930		200	6.33	0.0	0.45	9.98	988	6.21	-56.9	0.64	321.1	
0935		200	6.33	0.0	0.45	10.06	989	6.26	-57.6	0.59	311.2	
0940		200	6.33	0.0	0.45	10.04	990	6.29	-58.1	0.57	325.1	
0945		200	6.33	0.0	0.45	10.05	990	6.25	-58.5	0.52	230.7	
0950		200	6.33	0.0	0.45	10.08	991	6.31	-59.1	0.52	221.9	
0955		200	6.33	0.0	0.45	10.11	993	6.36	-59.1	0.51	201.7	
1000		200	6.33	0.0	0.45	10.12	993	6.35	-58.9	0.57	191.2	

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

Rev.: 2

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

Date : 5-19-10 Page 2 of 2 **Well ID :** BM-3D

Field Personnel Ken Marks 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: 1100

Sample Time 1105 Signature: Ken Marks

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.)

Page #2 of 2 Log info on page #1

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	Page 2 of 2
1005	N A	200	6.33	0.0	0.45	10.14	993	6.32	-58.8	0.61	178.9	Field log info on page #1
1010		200	6.33	0.0	0.45	10.11	991	6.38	-58.8	0.51	143.3	All readings stable but
1015		200	6.33	0.0	0.45	10.13	991	6.30	-57.6	0.45	126.7	turbidity
1020		200	6.33	0.0	0.45	10.06	991	6.35	-57.9	0.41	101.3	
1025		200	6.33	0.0	0.45	10.07	992	6.37	-59.1	0.37	90.87	
1030		200	6.33	0.0	0.45	10.05	992	6.37	-59.4	0.37	88.25	
1035		200	6.33	0.0	0.45	10.03	992	6.38	-59.2	0.35	73.55	
1040		200	6.33	0.0	0.45	10.03	992	6.40	-58.8	0.30	66.92	Purge water slightly cloudy. No odor.
1045		200	6.33	0.0	0.45	10.08	992	6.41	-59.0	0.31	59.98	
1050		200	6.33	0.0	0.45	10.07	992	6.41	-58.5	0.33	58.25	
1055		200	6.33	0.0	0.45	10.09	992	6.42	-58.9	0.33	56.96	
1100		200	6.33	0.0	0.45	10.10	992	6.44	-59.4	0.32	54.94	

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

Rev.: 2

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

Date : 5/19/10 Page 1 of 1

Well ID : MI-1

Field Personnel Josh Stewart

Purging Start Time : ~~1010~~ JS 0900

Well Depth as installed (ft.): 15

Measured Well Depth (ft.): 15.11

Screen Length in ft. 5 Screen Depth in ft. 10

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 6.29 From: PVC

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

Pump/Tubing Intake set (ft.): 12.5 From: PVC

Total Volume Purged, Including Drawdown (gallons): 3.00

Sample Designation MI-1-051910A

Time at Purge Completion:

Sample Time 0945

Signature: [signature]

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder 12 PSI 10R 5d

Multimeter model and serial number YSI # 2016 Turbidity meter model and serial number HF Scientific MICRO TPW # 1925

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

Bladder pump used

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	
0905	5 / 10	250	6.31	0.02	0.02	NR	NR	NR	NR	NR	NR	12 PSI
0910	5 / 10	250	6.31	0.00	0.02	8.47	217	6.75	208.2	6.89	2.57	12 PSI
0915	5 / 10	250	6.31	0	0.02	8.00	269	6.33	208.5	5.55	2.47	12 PSI
0920	5 / 10	250	6.31	0	0.02	7.90	357	6.28	202.6	4.96	1.52	12 PSI
0925	5 / 10	250	6.31	0	0.02	7.88	439	6.25	198.4	4.61	2.09	12 PSI
0930	5 / 10	250	6.31	0	0.02	7.87	474	6.23	195.8	4.40	0.98	12 PSI
0935	5 / 10	250	6.31	0	0.02	7.87	483	6.21	194.3	4.33	1.45	12 PSI
0940	5 / 10	250	6.31	0	0.02	7.86	483	6.20	193.4	4.25	1.92	12 PSI
0945						Sample						

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

Rev.: 2

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

Date : 5/19/10 Page 1 of 1 **Well ID :** ARC-3

Field Personnel Josh Stewart Purging Start Time : 1415

Well Depth as installed (ft.): 20 Measured Well Depth (ft.): 17.82

Screen Length in ft. 15 Screen Depth in ft. 5 Parameter Stabilization: (Circle) Yes No

Depth to GW (ft.): 4.03 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 12.5 From: PVC Total Volume Purged, Including Drawdown (gallons): 4.00

Sample Designation ARC-3-051910A Time at Purge Completion: 1550

Sample Time ~~1525~~ 1525 Signature: Jos

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder 15 PSI

Multimeter model and serial number YSI # 1921 Turbidity meter model and serial number HF Scientific MicroTPW 1888

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

Bladder pump used

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	
1420	5 / 10	200	4.05	0.02	0.02	NR	NR	NR	NR	NR	NR	15 PSI
1425	5 / 10	200	4.05	~~0.07~~ 0	0.02	10.41	0081	5.68	71.7	8.93	56.28	15 PSI
1430	5 / 10	200	4.05	0	0.02	10.22	0071	5.41	67.7	8.79	48.47	15 PSI
1435	5 / 10	200	4.05	0	0.02	10.16	0070	5.33	69.7	8.70	41.76	15 PSI
1440	5 / 10	200	4.05	0	0.02	10.20	0069	5.28	67.6	8.58	~~61.09~~ 61.09	15 PSI
1445	5 / 10	200	4.05	0	0.02	10.14	0070	5.21	65.6	8.49	19.08	15 PSI
1450	5 / 10	200	4.05	0	0.02	10.17	0075	5.18	64.2	8.37	15.42	15 PSI
1455	5 / 10	200	4.05	0	0.02	10.11	0077	5.15	63.4	8.34	11.45	15 PSI
1500	5 / 10	200	4.05	0	0.02	10.02	0078	5.14	62.9	8.27	9.98	15 PSI
1505	5 / 10	200	4.05	0	0.02	9.99	0078	5.10	63.3	8.02	7.43	15 PSI
1510	5 / 10	200	4.05	0	0.02	9.97	0077	5.09	63.1	7.95	4.98	15 PSI
1515	5 / 10	200	4.05	0	0.02	9.95	0078	5.07	63.9	8.08	4.92	15 PSI
1520		200	4.05	0	0.02	9.95	0079	5.07	63.7	8.09	4.86	15 PSI

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

Rev.: 2

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

Date : 05/19/10 Page 1 of 1 **Well ID :** ASI-16D2

Field Personnel PC Purging Start Time : 1232

Well Depth as installed (ft.): ~35.3 Measured Well Depth (ft.): 35.3

Screen Length in ft. 5 Screen Depth in ft. 35 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 8.02 From: 30 Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 32.5 From: 35 Total Volume Purged, Including Drawdown (gallons): ~10 liters

Sample Designation ASI-16D2-051910A Time at Purge Completion: 1330

Sample Time 1330 Signature: [illegible]

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geopump (Peristaltic) #3400 or #2

Multimeter model and serial number YSI 556 MPS 2016 Turbidity meter model and serial number 30060 7094 Geotech #1925

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	
1235	NA / NA	200	8.28	0.26	0.26	11.45	771	7.15	63.0	5.02	30.11	Peristaltic
1240		200	8.28	0	0.26	11.23	771	7.24	-0.8	2.45	20.88	
1245		200	8.29	0.01	0.27	11.18	775	7.19	-84.7	0.88	9.45	
1250		200	8.29	0.0	0.27	11.16	780	7.17	-98.6	0.62	3.37	
1255		200	8.29	0.0	0.27	11.18	784	7.21	-113.8	0.43	3.84	
1300		200	8.29	0.0	0.27	11.18	785	7.19	-117.0	0.39	3.15	
1305		200	8.29	0.0	0.27	11.18	784	7.22	-121.6	0.33	1.54	
1310		200	8.29	0.0	0.27	11.18	784	7.23	-122.3	0.31	1.73	
1315		200	8.29	0.0	0.27	11.19	785	7.23	-124.1	0.32	1.33	
1320		200	8.29	0.0	0.27	11.20	785	7.21	-127.8	0.30	1.13	
1325		200	8.29	0.0	0.27	11.21	785	7.21	-125.7	0.31	1.27	
1330		SAMPLE COLLECTED										

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

Rev.: 2

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

Date : 5/19/10 Page 1 of 1 **Well ID :** ~~AS1~~ AIP-01

Field Personnel PC Purging Start Time : 1040

Well Depth as installed (ft.): 42.0 Measured Well Depth (ft.): 42

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

Depth to GW (ft.): ~~[illegible]~~ 1.95 From: — Two Hour Time Limit Reached ? (Circle) Yes / (No)

Pump/Tubing Intake set (ft.): 40.0 From: — Total Volume Purged, Including Drawdown (gallons): 4.0

Sample Designation AIP-01-051910A Time at Purge Completion: 1135

Sample Time 1145 Signature: C. Pe[illegible]

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

Multimeter model and serial number YSI 556 MPS 2016 Turbidity meter model and serial number Scientific Micro TPW Geotech. (1925)

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

Peristaltic pump used

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	
1045	NA NA	225	1.95	0	0	10.70	494	7.02	91.4	4.06	—	turbidimeter being Recalibrated
1050		225	1.96	0.01	0.01	10.66	560	6.64	~~68.0~~	0.83	—	
1055		225	1.99	0.05	0.06	10.68	576	6.72	-87.1	0.5~~8~~	—	
1100		225	2.01	0	0.06	10.73	607	6.78	-107.5	0.42	—	
1105		225	2.03	0.02	0.08	10.80	624	6.92	-120.7	0.38	—	
1110		225	2.06	0.03	0.11	10.78	628	6.96	-123.7	~~1.00~~ 0.38	11.74	→ YSI switched off
1115		225	2.11	0.05	0.16	10.80	628	7.05	-128.7	(12) 0.37	3.54	
1120		225	2.14	0.03	0.19	10.82	629	7.05	-129.3	0.36	3.25	
1125		225	2.17	0.03	0.22	10.79	630	7.06	-130.0	0.35	3.42	
1130		225	2.18	0.01	0.23	10.80	629	7.04	-132.3	0.33	3.48	
1135		← SAMPLE COLLECTED →										

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

Rev.: 2

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

Date : 05/19/10 Page 1 of 1 **Well ID :** AL-15

Field Personnel PC Purging Start Time : 1528 JF

Well Depth as installed (ft.): ~~15~~ 16.5 Measured Well Depth (ft.): ~~≈15'~~ 14.23

Screen Length in ft. 10 Screen Depth in ft. 16.5 Parameter Stabilization: (Circle) Yes No

Depth to GW (ft.): 7.09 From: 6.5 Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): From: 16.5 Total Volume Purged, Including Drawdown (gallons): 2.5

Sample Designation AL-015-051910A Time at Purge Completion: 1620

Sample Time 1620 Signature: [signature]

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geo Pump (Geotech #340)

Multimeter model and serial number YSI 556 MPS (07C1046) Turbidity meter model and serial number MicroTPW S.No: 30060 7094

Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.) 0 ppm

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	
1530	N A	150	7.13	0.04	0.04	10.48	1248	6.06	127.1	4.30	17.29	
1535		150	7.13	0.0	0.04	10.22	1252	5.74	121.7	2.88	7.07	
1540		150	7.14	0.1	0.05	9.90	1235	5.60	109.1	1.43	3.00	
1545		150	7.14	0.0	0.05	9.83	1166	5.57	101.7	1.43	3.02	
1550		150	7.14	0.0	0.05	9.85	1105	5.55	98.3	1.50	2.59	
1555		150	7.14	0.0	0.05	9.83	1076	5.54	95.6	1.48	2.86	
1600		150	7.14	0.0	0.05	9.79	1013	5.56	94.0	1.53	2.77	
1605		150	7.14	0.0	0.05	9.77	1022	5.56	93.4	1.51	2.52	
1610		150	7.14	0.0	0.05	9.78	1009	5.58	93.4	1.54	2.31	
1615		150	7.14	0.0	0.05	9.78	1001	5.58	93.6	1.53	2.36	
1620		←		SAMPLE	COLLECTED						→	

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

Rev.: 2

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

Date : 5-19-10 Page 1 of 1 **Well ID :** AL-2

Field Personnel Ken Marks Purging Start Time : 1545

Well Depth as installed (ft.): Unknown Measured Well Depth (ft.): 25.45

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

Depth to GW (ft.): 7.57 From: Top of PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): _____ From: ↓ Total Volume Purged, Including Drawdown (gallons): 2

Sample Designation AL-2 051910 Time at Purge Completion: 1635

Sample Time 1640 Signature: Ken Marks

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder PSI 25 Dis = 5 Rec = 10

Multimeter model and serial number YSI 556MPS #07H102056 Turbidity meter model and serial number Micro TPW #200805197

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

Clock Time	Discharge / Refill / Pump Setting 25 PSI	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	
1550	5 / 10	200	7.59	0.02	–	11.16	678	6.91	78.1	2.80	13.83	Purge water clear. No odor.
1555		200	7.59	0.0	0.02	10.87	674	6.45	90.2	1.02	8.79	Purge water clear with some
1600		200	7.59	0.0	0.02	10.56	673	6.24	94.2	1.50	8.08	black specks floating. No odor.
1605		200	7.59	0.0	0.02	10.50	675	6.17	94.6	1.38	7.12	↓
1610		200	7.58	0.0	0.01	10.53	676	6.12	95.1	1.01	6.33	↓
1615		200	7.58	0.0	0.01	10.55	678	6.08	95.6	0.85	5.29	Purge water clear. No odor.
1620		200	7.58	0.0	0.01	10.51	680	6.06	96.1	0.81	5.03	↓
1625		200	7.58	0.0	0.01	10.49	681	6.02	96.9	0.77	4.97	↓
1630		200	7.57	0.0	0.0	10.39	682	6.01	97.2	0.65	4.83	↓
1635	↓	200	7.57	0.0	0.0	10.40	682	6.01	97.5	0.64	4.89	↓
						Ken Marks						

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

Rev.: 2

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

Date : 5-19-10 Page 1 of 2 **Well ID :** BM-3S

Field Personnel Ken Marks Purging Start Time : 1215

Well Depth as installed (ft.): 23 Measured Well Depth (ft.): 15.20

Screen Length in ft. 10 Screen Depth in ft. 13 to 23 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 6.93 From: Top of PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 18 From: ↓ Total Volume Purged, Including Drawdown (gallons): 4

Sample Designation BM-3S 051910 Time at Purge Completion: 1340

Sample Time 1350 Signature: Ken Marks

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder PSI = 20 dis = 5 rec = 10

Multimeter model and serial number YSI 556 MPS #07410205 Turbidity meter model and serial number Micro TPW #200805197

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	
1225	N / A	150	7.30	0.37	–	9.76	365	6.64	60.4	5.99	44.71	Purge water slighty cloudy
1230	5 / 10	150	7.27	0.0	0.37	9.64	376	6.63	64.3	5.53	30.52	↓
1235	5 / 10	150	7.27	0.0	0.34	9.60	391	6.63	66.2	5.24	33.40	↓
1240	5 / 10	150	7.27	0.0	0.34	9.56	404	6.63	66.7	5.06	21.10	↓
1245	5 / 10	150	7.27	0.0	0.34	9.53	414	6.62	67.7	4.98	18.37	Purge water clear No odor
1250	5 / 10	150	7.27	0.0	0.34	9.53	427	6.62	68.1	4.96	14.24	↓
1255	5 / 10	150	7.27	0.0	0.34	9.57	436	6.61	69.8	4.92	12.34	↓
1300	5 / 10	150	7.27	0.0	0.34	9.59	425	6.64	68.3	4.81	11.79	↓
1305	5 / 10	150	7.27	0.0	0.34	9.54	456	6.61	68.8	4.66	10.07	↓
~~1307~~ 1310 KN	5 / 10	150	7.27	0.0	0.34	9.49	462	6.59	69.9	4.66	7.59	↓
1315	5 / 10	150	7.27	0.0	0.34	9.59	465	6.59	70.2	4.53	8.31	↓
1320	5 / 10	150	7.27	0.0	0.34	9.61	470	6.59	70.9	5.46	7.48	↓

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

Rev.: 2

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

Date : 5-19-10 Page 2 of 2 **Well ID :** BM 3S

Field Personnel Ken Marks 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 See pg #1 Time at Purge Completion: _____

Sample Time ~~1343~~ 1350 Signature: Ken Marks

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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	Page 2 of 2
1325	5 / 10	150	7.27	0.0	0.34	9.62	477	6.58	71.1	5.01	6.53	Field log info ~~23~~ Page #1
1330	5 / 10	150	7.27	0.0	0.34	9.65	482	6.63	69.5	4.71	7.14	Purge water clear. No odor.
1335	5 / 10	150	7.27	0.0	0.34	9.76	483	6.58	70.7	4.51	6.51	↓
1340	5 / 10	150	7.27	0.0	0.34	9.87	491	6.59	69.9	4.42	6.03	↓

Ken Marks

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

Rev.: 2

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

Date : 5/20/10 Page 1 of 1 **Well ID :** AL-12

Field Personnel J. Stewart Purging Start Time : ~~15.08~~ 0846

Well Depth as installed (ft.): 15 Measured Well Depth (ft.): 15.08

Screen Length in ft. 5 Screen Depth in ft. 15 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 8.34 (55) PVC From: 10 Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 12.5 PVC From: 15 Total Volume Purged, Including Drawdown (gallons): 4.00

Sample Designation AL-12-051010A Time at Purge Completion: 0950

Sample Time 0935 Signature: [signature]

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder 15 PSI

Multimeter model and serial number YSI # 1921 Turbidity meter model and serial number HF Scientific Micro TPW # 1888

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	15 PSI
0850	5 / 10	250	8.45	0.11	0.11	NR	NR	NR	NR	NR	NR	Purge water Very silty brown color
0855	5 / 10	250	8.45	~~0.15~~	0.11	10.53	0670	5.84	149.0	0.90	109.5	15 PSI water brown color
0900	5 / 10	250	8.45	0	0.11	10.39	0644	5.63	83.0	0.71	75.60	15 PSI Water light brown color
0905	5 / 10	250	8.45	0	0.11	10.33	0640	5.54	73.0	0.64	50.62	15 PSI
0910	5 / 10	250	8.45	0	0.11	10.31	0639	5.55	65.1	0.60	36.31	15 PSI
0915	5 / 10	250	8.45	0	0.11	10.28	0636	5.55	63.0	0.54	27.92	15 PSI
0920	5 / 10	250	8.45	0	0.11	10.32	0635	5.57	61.8	0.54	21.08	15 PSI
0925	5 / 10	250	8.45	0	0.11	10.31	0633	5.58	60.5	0.55	20.01	15 PSI
0930	5 / 10	250	8.45	0	0.11	10.34	0630	5.59	60.1	0.59	19.85	15 PSI
0935							Sample					

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

Rev.: 2

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

Date : 5/20/10 Page 1 of 1 **Well ID :** BW-13S

Field Personnel PC Purging Start Time : 0902

Well Depth as installed (ft.): 6 Measured Well Depth (ft.): 7.50

Screen Length in ft. 1 Screen Depth in ft. 6 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): ~~5.13~~ 5.13 From: 5 Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 7.00 From: 6 Total Volume Purged, Including Drawdown (gallons): ≈1.5 gallons

Sample Designation BW-013S-052010A Time at Purge Completion: 1005

Sample Time 0940 Signature: [signature]

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) ~~[illegible]~~ GeoPump

Multimeter model and serial number YSI 556 MPS #2016 Turbidity meter model and serial number ~~YSI [illegible]~~ 300601094 Geotech #1925

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

Intake 0.5' from bottom

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	
0906		150	5.55	0.42	0.42	11.35	791	6.83	214.7	6.24	34.19	
0910		100	5.59	0.04	0.46	10.80	767	6.35	233.7	3.93	12.11	
0915		100	5.59	0.0	0.46	10.79	745	~~2.53~~ 6.09	236.9	2.53	4.97	
0920		100	5.59	0.0	0.46	10.80	739	5.97	232.3	2.31	3.08	
0925		100	5.59	0.0	0.46	10.70	737	5.90	226.6	2.16	1.44	
0930		100	5.59	0.0	0.46	10.69	737	5.89	221.2	2.15	1.31	
0935		100	5.59	0.0	0.46	10.67	737	5.89	218.7	2.15	1.40	
0940		← SAMPLE COLLECTED →										

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

Rev.: 2

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

Date : 5-20-10 Page 1 of 1 **Well ID :** MI-8

Field Personnel K. Marks Purging Start Time : 0855

Well Depth as installed (ft.): 14.5 Measured Well Depth (ft.): 16.38

Screen Length in ft. 5 Screen Depth in ft. 14.5 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 5.81 From: 9.5 Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 12 From: 14.5 Total Volume Purged, Including Drawdown (gallons): 2

Sample Designation MI-8-052010-A Time at Purge Completion: 0945

Sample Time 0950 Signature: [signature]

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

Multimeter model and serial number YSI 556 MPS #07H102056 Turbidity meter model and serial number Micro TPW #200805197

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

Intake 2.5' from bottom

Clock Time	Discharge / Refill / Pump Setting PSI=15	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	
0905	11 / 4	150	5.81	0.0	0.0	9.89	191	6.72	201.8	5.00	6.88	Purge water clear No odor
0910	11 / 4	150	5.81	0.0	0.0	9.57	187	6.29	202.1	2.50	5.11	
0915	11 / 4	150	5.81	0.0	0.0	9.21	183	6.00	186.4	1.60	4.02	
0920	11 / 4	150	5.81	0.0	0.0	8.97	180	5.71	186.6	1.46	2.73	
0925	11 / 4	150	5.81	0.0	0.0	8.79	178	5.62	184.1	1.09	4.31	
0930	11 / 4	150	5.81	0.0	0.0	8.84	177	5.59	180.0	0.93	4.11	
0935	11 / 4	150	5.81	0.0	0.0	8.80	177	5.51	178.7	0.81	3.03	
0940	11 / 4	150	5.81	0.0	0.0	8.79	177	5.55	177.8	0.80	2.97	
0945	11 / 4	150	5.81	0.0	0.0	8.77	175	5.52	177.4	0.82	2.51	

[signature]

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

Rev.: 2

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

Date : 05/20/10 Page 1 of 1 **Well ID :** ASI-15D2

Field Personnel PC Purging Start Time : 1106

Well Depth as installed (ft.): 40.5 Measured Well Depth (ft.): 42.56

Screen Length in ft. 5 Screen Depth in ft. Parameter Stabilization: (Circle) Yes No

Depth to GW (ft.): 6.42 From: 35.5 Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 38 From: 40.5 Total Volume Purged, Including Drawdown (gallons): 2½ gallons

Sample Designation ASI-015D2-052010A Time at Purge Completion: 1200

Sample Time 1200 Signature:

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

Multimeter model and serial number YSI 556MPS (2016) Turbidity meter model and serial number MicroTPW 1925

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	
1110		150	6.86	0.44	0.44	10.28	1366	6.66	-64.7	5.38	9.05	
1115		150	6.89	0.03	0.47	10.12	1409	6.73	-69.2	2.37	5.21	
1120		150	6.90	0.01	0.48	10.12	1412	6.79	-80.3	1.17	5.82	
1125		150	6.90	0.00	0.48	10.05	1416	6.81	-89.0	0.65	4.08	
1130		150	6.90	0.00	0.48	10.04	1419	6.83	-95.4	0.45	3.26	
1135		150	6.90	0.00	0.48	10.07	1421	6.83	-98.1	0.44	3.17	
1140		150	6.90	0.00	0.48	10.10	1417	6.84	-101.7	0.44	3.02	
1145		150	6.90	0.00	0.48	10.09	1416	6.84	-102.2	0.42	3.10	
1150		150	6.90	0.00	0.48	10.06	1415	6.84	-102.2	0.42	3.07	
1155		150	6.90	0.00	0.48	10.06	1417	6.84	-103.4	0.42	3.01	
1200		← SAMPLE COLLECTED →										

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

Rev.: 2

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

Date : 5/20/10 Page 1 of 1 **Well ID :** OE-2B

Field Personnel Josh Stewart Purging Start Time : 1115

Well Depth as installed (ft.): 13 Measured Well Depth (ft.): 15.31

Screen Length in ft. 10 Screen Depth in ft. 3 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 6.95 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 8 From: PVC Total Volume Purged, Including Drawdown (gallons): 4.00

Sample Designation OE-2B-052010A Time at Purge Completion: 1223

Sample Time 1205 Signature: Josh Stewart

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

Multimeter model and serial number YSI # 1921 Turbidity meter model and serial number HF Scientific micro TPW # 1888

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% NR	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	
1120	5 / 10	250	7.03	0.08	0.08	~~19.93~~	NR	NR	NR	NR	NR	15 PSI
1125	5 / 10	250	7.07	0.04	0.12	8.54	0071	4.92	82.0	3.53	60.79	15 PSI
1130	5 / 10	250	7.08	0.01	0.13	8.21	0067	4.74	85.8	3.43	53.66	15 PSI
1135	5 / 10	250	7.08	0.00	0.13	8.29	0064	4.65	87.4	3.38	40.82	15 PSI
1140	5 / 10	250	7.08	0	0.13	8.18	0064	4.60	85.1	3.41	29.06	15 PSI
1145	5 / 10	250	7.08	0	0.13	8.24	0066	4.56	73.8	3.40	13.39	15 PSI
1150	5 / 10	250	7.08	0	0.13	8.22	0067	4.55	69.1	3.39	12.02	15 PSI
1155	5 / 10	250	7.09	0.01	0.14	8.21	0068	4.56	68.1	3.39	11.12	15 PSI
1200	5 / 10	250	7.09	0	0.14	8.20	0068	4.54	67.0	3.38	11.20	15 PSI
1205		Sample										

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

Rev.: 2

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

Date : 05/20/10 Page _____ of _____ **Well ID :** ASI-05D2

Field Personnel PC Purging Start Time : 1425

Well Depth as installed (ft.): 35.5 Measured Well Depth (ft.): 36.85

Screen Length in ft. 5 Screen Depth in ft. 35.5 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 6.55 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): ? From: PVC Total Volume Purged, Including Drawdown (gallons): ≈3 gallons

Sample Designation _____ Time at Purge Completion: _____

Sample Time 1520 FD Time 1530 Signature: [signature]

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

Multimeter model and serial number YSI 556 MPS 2016 Turbidity meter model and serial number Micro TPW 1925

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	
1430		250	6.90	0.35	0.35	11.22	1043	7.41	-76.3	4.19	10.87	
1435		200	6.85	-0.05	0.30	11.26	1044	7.28	-96.3	1.72	4.38	
1440		200	6.85	0	0.30	11.00	1044	7.26	-107.6	0.65	3.14	
1445		200	6.87	0.02	0.32	10.99	1045	7.24	-111.1	0.45	2.96	
1450		200	6.87	0.0	0.32	11.02	1045	7.23	-114.9	0.42	2.54	
1455		200	6.87	0.0	0.32	11.05	1044	7.23	-116.0	0.39	2.80	
1500		200	6.87	0.0	0.32	11.08	1044	7.23	-113.1	0.37	2.59	
1505		200	6.87	0.0	0.32	11.10	1044	7.23	-116.4	0.37	2.65	
1510		200	6.87	0.0	0.32	11.11	1044	7.23	-117.5	0.36	2.72	
1515		200	6.87	0.0	0.32	11.11	1044	7.23	-118.3	0.36	2.68	
1520		←			SAMPLE	COLLECTED					→	

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

Rev.: 2

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

Date : 5/20/10 Page 1 of 1 **Well ID :** BF-4

Field Personnel Josh Stewart Purging Start Time : 1453

Well Depth as installed (ft.): 12 Measured Well Depth (ft.): 12.57

Screen Length in ft. 10 Screen Depth in ft. 1.5 bgs Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 8.04 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): ~~6.5~~ 10 From: PVC Total Volume Purged, Including Drawdown (gallons): 4.25

Sample Designation BF-4-052010A Time at Purge Completion: 1558

Sample Time 1540 Signature: Josh S

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

Multimeter model and serial number YSI # 1921 Turbidity meter model and serial number HF Scientific micro TPW # 1888

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	
1455	5 / 10	300	8.16	0.12	0.12	NR	NR	NR	NR	NR	NR	15 PSI purge water orange
1500	5 / 10	300	8.16	0	0.12	9.19	0191	5.95	25.9	1.56	188.5	15 PSI water orange
1505	5 / 10	300	8.16	0	0.12	8.57	0192	6.10	10.0	1.12	105.5	15 PSI
1510	5 / 10	300	8.16	0	0.12	8.33	0193	6.14	6.9	0.89	77.38	15 PSI
1515	5 / 10	300	8.16	0	0.12	8.27	0194	6.19	4.6	0.93	78.91	15 PSI
1520	5 / 10	300	8.16	0	0.12	8.31	0195	6.22	4.0	0.76	67.67	15 PSI
1525	5 / 10	300	8.16	0	0.12	8.27	0195	6.24	4.1	0.79	54.76	15 PSI
1530	5 / 10	300	8.16	0	0.12	8.24	0195	6.25	4.6	0.75	59.67	15 PSI
1535	5 / 10	300	8.16	0	0.12	8.22	0196	6.24	4.8	0.73	53.86	15 PSI
1540						Sample						

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

Rev.: 2

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

Date : 5-20-10 Page 1 of 2 **Well ID :** BR-1

Field Personnel Ken Marks

Purging Start Time : ~~FH~~ 1455

Well Depth as installed (ft.): 123

Measured Well Depth (ft.): 114.68

Screen Length in ft. 10 Screen Depth in ft. 123

Parameter Stabilization: (Circle) Yes / (No)

Depth to GW (ft.): 17.25 From: PVC

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

Pump/Tubing Intake set (ft.): 118 From: PVC

Total Volume Purged, Including Drawdown (gallons): 2

Sample Designation ~~BR-1 052010~~ JF BR-001-052010A

Time at Purge Completion:

Sample Time 0815

Signature: Ken Marks

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) ~~Micro TPW #200805197~~ KM Geo-Pump

Multimeter model and serial number YSI 556 MPS #07H102056 Turbidity meter model and serial number Micro TPW #200805197

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

Max drawdown was reached w/ peristatic (~32 ft); recharge is slow so decide to let recover overnight and sample in AM (05/20/10)

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
	Geo-Pump											
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1505	N A	100	17.93	0.68	–	13.77	5520	11.76	-2.4	4.07	296.7	Purge water cloudy. No odor.
1510	Low setting	100	18.55	0.62	1.3	13.96	5518	11.86	-1.5	3.93	202.7	↓
1515		100	19.47	0.92	2.22	14.09	5541	11.83	6.4	3.54	121.3	↓
1520		100	~~20~~ 19.33	0.86	3.08	14.15	5535	11.89	12.7	3.40	99.23	DTW = 20.33
1525		100	21.21	0.88	3.96	14.21	5541	11.94	20.3	3.09	115.5	Purge water cloudy. No odor.
1530		100	22.11	0.90	4.86	14.05	5527	11.98	22.1	2.88	101.7	↓
1535		100	23.07	0.96	5.82	13.88	5519	12.03	22.8	2.62	90.16	↓
1540		100	23.96	0.89	6.71	14.01	5401	12.17	11.9	2.60	89.11	↓
1545		100	24.75	0.79	7.50	14.29	5262	12.30	-8.6	2.61	88.96	↓
1550		100	25.29	0.54	8.04	14.34	5248	12.39	-6.2	2.58	86.66	↓
1555		100	26.11	0.82	8.86	14.40	5238	12.31	10.6	2.55	85.61	↓
1600		100	27.02	0.91	9.77	14.43	5210	12.34	11.8	2.48	85.01	↓

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

Rev.: 2

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

Date : 5-20-10 Page 2 of 2 **Well ID :** RR-1

Field Personnel Ken Marks 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: Ken Marks

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.)

Page # 2 of 2 Field log info ~~RR~~ page #1

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
	Geo-Pump											Page 2 of 2
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1605	Low setting	100	27.90	0.88	10.65	14.37	5157	12.47	2.1	2.44	71.11	Well info see page #1
1610		100	28.82	0.92	11.57	14.53	5116	12.41	5.6	2.52	63.23	
1615		100	29.51	0.69	12.26	14.53	5091	12.41	10.3	2.63	58.24	
1620		100	30.32	0.81	13.07	14.57	5068	12.49	-13.9	2.50	51.50	
1625		100	31.13	0.81	13.88 ~~13.88~~	14.61	5008	12.53	-47.4	2.49	50.01	Cum draw down = 13.88
1630		100	31.86	0.73	14.61	14.93	4879	13.55	-128.3	2.45	31.71	No odor
1635		100	31.89	0.03	14.64	15.12	4838	13.30	-124.1	2.52	19.40	Purge water very slighty cloudy
1640		100	32.01	0.12	14.76	15.21	4833	13.30	-124.5	2.55	19.57	
1645		100	32.12	0.11	14.87	15.20	4831	13.28	-124.7	2.57	19.50	
												Purge stoped DTW To deep

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

Rev.: 2

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

Date : 12-2-10 Page 1 of 2 **Well ID :** AIP-01

Field Personnel Ken Marks Purging Start Time : 13.50

Well Depth as installed (ft.): Unknown Measured Well Depth (ft.): 8.42

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

Depth to GW (ft.): 5.40 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 40 From: gs Total Volume Purged, Including Drawdown (gallons): 2.5

Sample Designation AIP-001-1110A Time at Purge Completion: 1525

Sample Time 1515 Signature: Ken Marks

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

Multimeter model and serial number YSI 650 MDS #01G0853 Turbidity meter model and serial number LaMotte 2020 e# 12350 AA

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

Page #1 of 2

Clock Time	Discharge / Refill / Pump Setting	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3% mS/cm	pH +/- 0.1	ORP +/-10	DO +/- 10% if >0.5 mg/L	Turbidity +/- 10% if > 5 NTU	Comments / Gas Pressure / Observations
HHMM	Geo-Pump sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1400	Low Low	100	5.45	0.05	—	10.48	0.440	8.08	-69.2	9.28	11.9	Purge water slighty cloudy
1405		100	5.45	0.0	0.05	10.94	0.441	7.59	-51.3	7.63	8.14	
1410		100	5.45	0.0	0.05	11.02	0.441	7.49	-47.0	7.48	4.36	Purge water clear
1415		100	5.45	0.0	0.05	11.15	0.452	7.17	-31.7	5.80	4.10	p
1420		100	5.45	0.0	0.05	11.05	0.462	7.24	-28.4	5.15	4.15	
1425		100	5.45	0.0	0.05	11.08	0.516	7.21	-28.2	3.92	4.11	
1430		100	5.45	0.0	0.05	11.12	0.566	7.20	-43.9	3.40	3.12	
1435		100	5.45	0.0	0.05	11.13	0.582	7.22	-66.8	2.61	3.03	
1440		100	5.45	0.0	0.05	10.99	0.602	7.27	-90.0	1.91	2.51	
1445		100	5.45	0.0	0.05	10.99	0.615	7.34	-115.7	1.37	2.12	
1450		100	5.45	0.0	0.05	11.08	0.622	7.37	-127.2	1.23	2.13	
1455		100	5.45	0.0	0.05	11.02	0.638	7.39	-131.5	1.01	1.97	

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

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

Date : 12-2-10 Page 2 of 2 **Well ID :** AIP-01

Field Personnel Ken Marks Purging Start Time : ~~15~~ KM

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 1515 Signature: Ken Marks

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.)

INFO on Page#1

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	
1500		100	5.45	0.0	0.05	10.97	0.643	7.41	-134.0	0.91	1.09	Page# 2 of 2
1505		100	5.45	0.0	0.05	10.93	0.645	7.43	-135.1	0.90	1.01	INFO on Page#1
1510		100	5.45	0.0	0.05	10.94	0.646	7.45	-135.8	0.88	1.00	S. Cond = 0.646

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

Rev.: 2

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

Date : 12-1-10 Page 1 of 1 **Well ID :** AL-2

Field Personnel Ken Marks Purging Start Time : 1150

Well Depth as installed (ft.): 25.4 bgs Measured Well Depth (ft.): 25.50 TOC

Screen Length in ft. 5 Screen Depth in ft. 20.4-25.4 bgs Parameter Stabilization: (Circle) (Yes) / No

Depth to GW (ft.): 8.10 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / (No)

Pump/Tubing Intake set (ft.): 22.9 From: bgs Total Volume Purged, Including Drawdown (gallons): 5.0

Sample Designation AL-002-1110A Time at Purge Completion: 1250

Sample Time 1255 Signature: Ken Marks

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder PSI=20

Multimeter model and serial number YSI 650 MDS #6160853 Turbidity meter model and serial number LaMotte 2020e # 12350 AA

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
	PSI=20						mS/cm					
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	~~µS/cm~~		mV	mg/L	NTU	
1155	5.5 9.5	300	7.51	-	-	11.96	0.925	6.21	80.6	1.22	54.4	Purge water clear with lots
1200		300	7.60	-	-	11.99	0.827	6.16	82.1	0.61	30.1	of black specks floating.
1205		300	7.60	-	-	12.07	0.733	6.15	80.4	0.89	12.6	Good recharge.
1210		300	7.62	-	-	12.15	0.702	6.14	81.1	1.41	10.9	
1215		300	7.62	-	-	12.14	0.655	6.14	82.9	1.28	8.51	
1220		300	7.62	-	-	12.15	0.711	6.15	84.3	1.05	6.85	
1225		300	7.62	-	-	12.16	0.742	6.15	85.3	0.87	6.14	
1230		300	7.62	-	-	12.17	0.789	6.15	86.2	0.74	5.13	
1235		300	7.62	-	-	12.17	0.784	6.15	87.1	0.63	4.04	
1240		300	7.62	-	-	12.17	0.795	6.15	88.7	0.56	3.43	
1245		300	7.62	-	-	12.17	0.803	6.15	88.6	0.50	3.68	
1250		300	7.62	-	-	12.17	0.805	6.15	88.8	0.51	3.22	

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

Rev.: 2

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

Date : 12/1/10 Page 1 of 2 **Well ID :** ~~AL-1~~ AL-12
Field Personnel Sam Wan Purging Start Time : 9:15
Well Depth as installed (ft.): 13 Measured Well Depth (ft.): 15.05
Screen Length in ft. 10 Screen Depth in ft. 3-13' Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 8.36 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): ~~8'~~ 11.5' From: PVC Total Volume Purged, Including Drawdown (gallons): 4.0
Sample Designation AL-012-1110A Time at Purge Completion: 10:50
Sample Time 10:35 Signature:
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder 18PSE
Multimeter model and serial number 600XL 02A08744E Turbidity meter model and serial number ME-10539 Backup
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Screen from 3 to 13 indicated on provided table, Notified Sample Manager
Says to Relocate Pump Intake to Midpoint of Water Column ~11.5' Bgs

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	225-Read w/Kelley's Meter
9:20	5 / 10	200	8.45	—	—	12.29	1272	5.79	80.3	1.30	NR	Error Low Bat. Call for Replacement.
9:25	5 / 10	200	8.45	—	—	12.43	1271	5.63	106.0	1.05	123.0	Replaced Battery
9:30	5 / 10	200	8.45	—	—	12.46	1265	5.58	121.5	1.02	108.4	
9:35	5 / 10	200	8.45	—	—	12.49	1261	5.57	127.7	1.01	58.1	
9:40	5 / 10	200	8.45	—	—	12.51	1258	5.56	129.4	1.00	42.5	
9:45	5 / 10	200	8.45	—	—	12.53	1256	5.56	132.7	0.94	33.9	
9:50	5 / 10	200	8.45	—	—	12.56	1255	5.56	135.5	0.93	24.4	
9:55	5 / 10	200	8.45	—	—	12.58	1257	5.55	138.1	0.90	16.3	
10:00	5 / 10	200	8.45	—	—	12.58	1254	5.55	139.1	0.87	11.7	
10:05	↓	↓	↓	—	—	12.61	1255	5.54	141.0	0.85	9.13	
10:10	↓	↓	↓	—	—	12.61	1255	5.54	140.8	0.85	8.53	
10:15	↓	↓	↓	—	—	12.63	1254	5.54	140.5	0.86	7.15	

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

Rev.: 2

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

Date : 12/1/10 Page 2 of 2 **Well ID :** AL-12

Field Personnel SJJ Purging Start Time : 9:15

Well Depth as installed (ft.): 13 Measured Well Depth (ft.): 15.05

Screen Length in ft. 10 Screen Depth in ft. 3-13' Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 8.36 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 11.5' From: PVC Total Volume Purged, Including Drawdown (gallons): 4.0

Sample Designation AL-12 Time at Purge Completion: 10:50

Sample Time 10:35 Signature: SJJ

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.) See P-1.

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	
10:20	5 / 10	200	8.45	—	—	12.63	1253	5.54	140.5	0.86	~~7.25~~	Recheck = 6.71
10:25	5 / 10	200	8.45	—	—	12.64	1251	5.54	140.1	0.85	6.54	
												Sample Time 10:35

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

Rev.: 2

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

Date : 11/30/10 Page 1 of 1 **Well ID :** AL-14

Field Personnel E. JOHNSON Purging Start Time : 900

Well Depth as installed (ft.): 16 bgs Measured Well Depth (ft.): 15.48

Screen Length in ft. 10 Screen Depth in ft. 6-16 bgs Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 7.25 From: TOP OF PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 11' From: GROUND SFC Total Volume Purged, Including Drawdown (gallons): 3

Sample Designation AL-014-1110A Time at Purge Completion: 950

Sample Time 955 Signature: [illegible]

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

Multimeter model and serial number YSI 600 XLM 12777 Turbidity meter model and serial number LAMOTTE 2020E 14820

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	
905	NA / NA	240	7.28	–	–	10.08	270	6.07	213.9	4.31	NR	Purge water clear, no odor
910		240	7.28	0.0	0.0	10.41	270	6.13	206.4	2.91	4.45	detected.
915		240	7.28	0.0	0.0	10.63	277	6.15	200.7	1.92	3.39	
920		240	7.29	0.01	0.01	10.78	288	6.21	193.1	1.52	2.92	
925		240	7.29	0.0	0.01	10.82	297	6.24	188.2	1.04	1.78	
930		240	7.29	0.0	0.01	10.84	304	6.26	184.1	0.76	1.57	
935		240	7.29	0.0	0.01	10.83	312	6.28	179.9	0.66	1.58	
940		240	7.29	0.0	0.01	10.86	318	6.28	176.3	0.48	1.36	
945		240	7.30	0.01	0.02	10.89	323	6.29	173.9	0.40	1.04	
950		240	7.30	0.0	0.02	10.87	327	6.30	171.3	0.36	1.12	
												→ Readings stablized, GW
												sampled @ 955

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

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

Date : 12/1/10 Page 1 of 2 **Well ID :** AL-15

Field Personnel K. Armitage Purging Start Time : 1233

Well Depth as installed (ft.): 16.5 bgs Measured Well Depth (ft.): 16.5 JF 14.32 TOC

Screen Length in ft. 10 Screen Depth in ft. 6.5-16.5 JF 10 bgs Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 7.30 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 9.0 From: PVC Total Volume Purged, Including Drawdown (gallons): 5.3

Sample Designation AL-015-1110A Time at Purge Completion: 1418

Sample Time 1405 Signature: K. Armitage

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

Multimeter model and serial number YSI 650 MDS: PINE1782 Turbidity meter model and serial number LaMotte 2020e: ME14123

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

1235 stopped pumping - clean tubing/flow thru cell. 1243 restarted pumping

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	
1250	NA NA	~280	7.34	—	—	11.41	607	5.75	2.1	2.47	44.2	Iron flock settling in flow
1255		~330	7.35	0.01	0.01	11.39	532	5.64	-4.3	3.21	10.17	thru cell.
1300		~315	7.35	Ø	0.01	11.43	518	5.61	-2.6	4.30	4.86	
1305		~300	7.35	Ø	0.01	11.50	519	5.59	-4.8	4.49	3.66	
1310		~300	7.35	Ø	0.01	11.55	498	5.58	-1.6	4.51	1.56	
1315		~300	7.35	Ø	0.01	11.52	491	5.57	-3.3	4.48	1.69	
1320		~300	7.35	Ø	0.01	11.57	480	5.56	-6.0	4.40	1.28	
1325		~300	7.35	Ø	0.01	11.54	467	5.56	-5.6	4.43	0.84	DO ch is bouncing 17-33
1330		~300	7.35	Ø	0.01	11.54	463	5.56	-6.0	4.44	0.78	
1335		~300	7.35	Ø	0.01	11.56	454	5.56	-14.6	4.32	0.81	
1340		~300	7.35	Ø	0.01	11.52	449	5.56	-8.0	4.33	0.77	
1345	✓	~300	7.35	Ø	0.01	11.50	441	5.56	-6.1	4.31	0.69	

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

Rev.: 2

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

Date : 12/1/10 Page 1 of 1 **Well ID :** ARC-3

Field Personnel E. JOHNSON Purging Start Time : 1227

Well Depth as installed (ft.): 20 bgs Measured Well Depth (ft.): 17.73 bgs

Screen Length in ft. 15' Screen Depth in ft. 5'-20' Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 4.85 From: TOP OF ROADBOX/S GRADE Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): DEDICATED TUBING 17.5 From: PVC Total Volume Purged, Including Drawdown (gallons): 1.5

Sample Designation ARC-003-1110A Time at Purge Completion: 1305

Sample Time 1310 Signature: Eric Johnson

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) BLADDER PUMP 13521

Multimeter model and serial number YSI 600XL 4309 Turbidity meter model and serial number LAMOTTE 2020E ME14820

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	
1230	4.5 / 10.5	~200	4.88	.03	.03	12.24	133	6.77	119.8	10.55	18.5	Pressure @ ~15-18 psi, clear
1235	4.5 / 10.5	160	4.88	.03		12.06	74	6.24	129.3	10.27	17.3	purge water
1240	5.0 / 10.0	180	4.88			12.02	60	6.06	135.3	10.21	12.3	
1245	5.0 / 10.0	180	4.88			11.98	58	5.96	141.1	10.15	9.60	
1250	5.0 / 10.0	180	4.88			11.93	56	5.91	144.4	10.14	7.91	
1255	5.0 / 10.0	180	4.88			11.91	55	5.89	147.0	10.12	6.93	
1300	5.0 / 10.0	180	4.88			11.89	55	5.88	149.0	10.13	4.26	
1305	5.0 / 10.0	180	4.88			11.90	55	5.87	150.4	10.13	3.71	
												Parameters stabilized, GW sampled @ 1310.
												Eric Johnson

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

Rev.: 2

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

Date : 12/1/10 Page 2 of 2 **Well ID :** AL-15

Field Personnel K Armitage 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): 5.3

Sample Designation _____ Time at Purge Completion: _____

Sample Time 1405 Signature: K Armitage

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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1350	NA NA	~300	7.35	∅	0.01	4 ~~10~~	436	5.56	1.8	4.45	0.63	Temp = 11.48°C
1355		~300	7.35	∅	0.01	11.45	434	5.56	1.4	4.47	0.70	
1400		~300	7.35	∅	0.01	11.46	432	5.57	2.2	4.43	0.74	

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

Rev.: 2

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

Date : 11/29/2010 Page 1 of 1

Well ID : ~~SD2~~ ~~302~~ ~~MW-2D2~~ ASI-02D2 / Dup.

Field Personnel Heidi Borchers

Purging Start Time : 1415

Well Depth as installed (ft.): 31 bgs

Measured Well Depth (ft.): 26

Screen Length in ft. 5 Screen Depth in ft. 26 - 31 bgs

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 4.86 From: PVC

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

Pump/Tubing Intake set (ft.): 28.5 From: SS

Total Volume Purged, Including Drawdown (gallons): 3 1/2

Sample Designation ASI-02D2-1110A

Time at Purge Completion: 1600

Sample Time 1505

Signature:

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

Multimeter model and serial number YSI 600 XL SN# 10[illegible] Turbidity meter model and serial number LaMotte 2020e SN# ME11995

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	
1420	NA	200	7.20	2.34	0.00	11.11	2.308	6.93	-94.3	2.11	46.0	
1425		200	7.05	2.19	0.15	11.12	2.389	6.97	-115.2	1.38	36.2	
1430			7.10	2.24	0.05	11.18	2.463	6.99	-121.0	1.14	31.8	
1435			7.10	2.24	0.00	11.19	2.500	7.00	-122.2	1.14	4.33	
1445			7.10	2.24	0.00	11.13	2.587	7.00	-127.5	0.54	3.17	
1450		350	7.19	2.33	0.09	11.13	2.610	7.00	-124.0	0.62	1.52	
1455		~~200~~ 350	7.10	2.24	0.09	11.11	2.608	7.01	-127.7	0.57	1.52	
1500		225	7.10	2.24	0.00	11.08	2.608	7.00	-127.4	0.61	1.60	
1505												Sampled @ 1505

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

Rev.: 2

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

Date : 11 - 29 - 10 Page 1 of 2 **Well ID :** ASI 03D2 03D2

Field Personnel Ken Marks Purging Start Time : 1355

Well Depth as installed (ft.): 31 bgs Measured Well Depth (ft.): 30.69

Screen Length in ft. 5 Screen Depth in ft. 26-31 bgs Parameter Stabilization: (Circle) (Yes) / No

Depth to GW (ft.): 5.34 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / (No)

Pump/Tubing Intake set (ft.): 28.5 From: gs Total Volume Purged, Including Drawdown (gallons): 2.5

Sample Designation ASI-03D2-1110A Time at Purge Completion: 1515

Sample Time 1520 Signature: Ken Marks

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

Multimeter model and serial number YSI 650 MDS 1276 Turbidity meter model and serial number LaMotte 2020C # 12350

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

~~This well has a Field Dup KM~~

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
	Low											
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1405	Geo Pump	150	5.40	0.06	-	11.22	1.511	6.91	162.0	7.07	11.2	Purge water clear. No odor.
1410	Geo Pump	150	5.41	0.01	0.07	11.21	1.686	6.80	92.0	6.10	8.60	
1415		150	5.41	0.0	0.07	11.13	1.682	6.85	-19.6	2.30	5.35	
1420		150	5.41	0.0	0.07	11.18	1.643	6.92	-67.8	1.35	5.80	
1425		150	5.41	0.0	0.07	11.19	1.631	6.94	-86.4	1.07	5.31	
1430		150	5.41	0.0	0.07	11.28	1.623	6.96	-99.0	1.10	4.35	
1435		150	5.41	0.0	0.07	11.28	1.618	6.95	-101.1	1.03	4.22	
1440		150	5.41	0.0	0.07	11.26	1.612	6.99	-107.6	1.04	4.21	
1445		150	5.41	0.0	0.07	11.19	1.602	7.02	-114.1	0.96	4.64	
1450		150	5.41	0.0	0.07	11.15	1.598	7.03	-117.5	0.82	4.10	
1455		150	5.41	0.0	0.07	11.13	1.596	7.06	-120.9	0.81	4.03	
1500		150	5.41	0.0	0.07	11.14	1.595	7.07	-122.3	0.78	3.91	

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

Rev.: 2

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

Date : 11-29-10 Page 2 of 2 **Well ID :** ASI 03D2 03D2

Field Personnel Ken Marks Purging Start Time : 1355

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): 2.5

Sample Designation _____ Time at Purge Completion: _____

Sample Time 1520 Signature: Ken Marks

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.)

INFO on Page#1

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	
1505	600 Pump	150	5.41	0.0	0.07	11.11	1.592	7.06	-124.0	0.72	3.83	Page#2 of 2
1510	↓	150	5.41	0.0	0.07	11.11	1.592	7.07	-123.8	0.61	3.81	INFO on Page#1
1515	↓	150	5.41	0.0	0.07	11.09	1.590	7.08	-123.0	0.60	3.77	Purge water Clear. No odor.

Ken Marks

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

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

Date : 11/30/10 Page 1 of 1

Well ID : ASI-04DZ

Field Personnel E. JOHNSON

Purging Start Time : 1052

Well Depth as installed (ft.): 35.5 bgs

Measured Well Depth (ft.): NR

Screen Length in ft. ~~10~~ 5 Screen Depth in ft. 30.5 - 35.5 bgs

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 7.14 From: TOP OF PVC

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

Pump/Tubing Intake set (ft.): DEDICATED IN PLACE From:

Total Volume Purged, Including Drawdown (gallons): 2

Sample Designation ASI-004DZ-1110A

Time at Purge Completion: 1135

Sample Time 1145

Signature: Eric Johnson

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

Multimeter model and serial number YSI 600 XLM 12777 Turbidity meter model and serial number LAMOTTE 2020E ME 14820

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	
1105		140	7.49	–	–	9.64	621	10.13	-85.7	0.91	1.19	- EJ contacts JStewart/JFapiano
1110		140	~~7.51~~ NM (EJ)		NR	9.57	626	10.23	-95.1	0.68	1.07	RE: high pH value.
1115		140	7.51	0.02	0.02	9.60	630	10.35	-111.0	0.69	1.11	- Several high pH values
1120		140	7.55	0.04	0.06	9.59	632	10.36	-114.1	0.68	1.19	detected on Commerce St.
1125		130	7.58	0.03	0.09	9.59	633	10.30	-114.6	0.66	1.26	in past, not ASI-04DZ.
1130		120	7.48	(0.10)	(0.01)	9.54	639	10.28	-117.3	0.62	1.01	- EJ to cont. pH readings,
1135		120	7.46	(0.02)	(0.03)	9.55	641	10.24	-118.3	0.45	1.07	cal check sonde upon
												return to support bldg.
												per JS + JF.
					Eric Johnson							
												→ Parameters stabilized, GW sampled
												@ 1145.

EJ DROPS FLOW RATE, OBTAINS ADDITIONAL READINGS BEFORE 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

Rev.: 2

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

Date : 12/2/10 Page 1 of 1 **Well ID :** ASI-05D2
Field Personnel S. Bonis Purging Start Time : 9:50
Well Depth as installed (ft.): 35.5' Measured Well Depth (ft.): 36.79
Screen Length in ft. 5' Screen Depth in ft. 30.5 → 35.5 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 5.77 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 33' From: PVC Total Volume Purged, Including Drawdown (gallons): 20 gal
Sample Designation ASI-05D2-1110A Time at Purge Completion: 11:10
Sample Time 10:40 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geotech. Per. # 2959
Multimeter model and serial number YSI 600XL 02A374413 Turbidity meter model and serial number Lamotte 2020e ME-10539
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	
9:55		200	5.96	—	—	8.47	954	7.21	-15.4	1.96	10.80	
10:00		200	5.98	.02	.02	9.96	949	7.29	-24.3	1.54	2.74	
10:05		200	6.00	.02	.04	10.35	943	7.31	-28.2	1.03	0.73	
10:10		200	6.00	—	.04	10.43	941	7.32	-29.1	0.74	1.37	
10:15		200	6.00	—	.04	10.52	938	7.33	-30.0	0.67	0.81	
10:20		200	6.00	—	.04	10.49	939	7.33	-31.3	0.65	0.80	
10:25		200	6.00	—	.04	10.49	939	7.33	-33.8	0.50	0.64	
10:30		200	6.00	—	.04	10.48	939	7.33	-35.8	0.47	0.57	Sample Time 10:40

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

Rev.: 2

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

Date : 11/30/10 Page 1 of 1 **Well ID :** AS1-11D2
Field Personnel E. JOHNSON Purging Start Time : 1318
Well Depth as installed (ft.): 40 bgs Measured Well Depth (ft.): NR
Screen Length in ft. 5 Screen Depth in ft. 35-40 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 2.88 From: TOP OF PVC (FLUSH MT) Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): DEDICATED IN PLACE 37.5 From: bgs Total Volume Purged, Including Drawdown (gallons): 1.8
Sample Designation AS1-011D2-1110A Time at Purge Completion: 1410
Sample Time 1415 Signature: J. Spiano for E. Johnson
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) PERISTALTIC PUMP
Multimeter model and serial number YSI 600 XLM 12777 Turbidity meter model and serial number LAMOTTE 2020E ME 14820
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	
1325		180	3.06	–	–	11.39	2,193	9.87	-103.5	1.68	5.13	Clear purge water, no odor
1330		180	3.06	0.0	0.0	11.35	2,198	10.16	-130.0	0.82	2.48	detected.
1335		180	3.04	+0.02	+0.02	11.35	2,206	9.84	-113.6	0.60	1.56	
1340		180	3.04	0.0	+0.02	11.31	2,234	9.71	-111.0	0.77	1.36	
1345		180	3.04	0.0	+0.02	11.26	2,246	9.60	-108.9	0.76	1.47	
1350		180	3.04	0.0	+0.02	11.25	2,251	9.54	-110.5	0.66	1.40	
1355		180	3.04	0.0	+0.02	11.25	2,257	9.53	-113.0	0.59	1.07	
1400		180	3.04	0.0	+0.02	11.22	2,261	9.46	-112.3	0.49	0.91	
1405		180	3.04	0.0	+0.02	11.15	2,269	9.39	-111.5	0.45	1.11	
1410		180	3.04	0.0	+0.02	11.13	2,270	9.38	~~-115~~ -115.5	0.45	1.37	
												PARAMETERS STABILIZED, GW
												SAMPLED @ 1415

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

Rev.: 2

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

Date : 11/30/10 Page 1 of 1 **Well ID :** ASI-145

Field Personnel J. Ward Kelley Armitage

Purging Start Time : 1435

Well Depth as installed (ft.): 18.5 bgs

Measured Well Depth (ft.): 20.09 - Soft Bottom

Screen Length in ft. 10 Screen Depth in ft. 8.5-18.5 bgs

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): ~~6.4~~ 5.5 From: standpipe

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

Pump/Tubing Intake set (ft.): 18 From: standpipe

Total Volume Purged, Including Drawdown (gallons): 2.5

Sample Designation ASI-0145-1110A

Time at Purge Completion: 1540

Sample Time 1530

Signature:

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

Multimeter model and serial number YSI 650 MDS: 9INE 1782 Turbidity meter model and serial number Lamotte 2020e: ME14/23

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	
1445	NA NA	150	NA	NA	NA	9.53	433	6.38	-58.1	1.98	15.4	
1450		150				9.47	427	6.26	-42.9	2.21	9.26	
1455		150				9.49	409	6.11	-29.4	2.02	8.22	
1500		150				9.53	403	6.05	-29.0	2.04	5.86	
1505		150				9.61	400	6.00	-31.5	2.03	3.59	
1510		150				9.65	397	5.94	-30.7	2.15	1.33	
1515		150				9.63	395	5.92	-29.9	2.17	1.14	
1520		150				9.64	394	5.88	-25.2	2.17	1.41	
1525		150				9.66	393	5.87	-24.8	2.15	1.29	

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

Rev.: 2

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

Date : 11/30/10 Page 1 of 1 **Well ID :** ASI-14D2
Field Personnel J Ward Purging Start Time : 1455
Well Depth as installed (ft.): 30 bgs Measured Well Depth (ft.): NM
Screen Length in ft. 5 Screen Depth in ft. 25-30 bgs Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 6.53 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 27.5 From: ~~PVC~~ gs Total Volume Purged, Including Drawdown (gallons): 2.0
Sample Designation ASI-14D2 Time at Purge Completion: 3:45
Sample Time 15:40 Signature: [illegible]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) peristaltic.
Multimeter model and serial number Jay/YSI 650XL/02A08- Turbidity meter model and serial number Jay/LaMotte 2020 ME/0539
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.) 74AB

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	
1456	NA NA	~~265~~ 200	6.65									purge rate = 200 mL/min.
1458		200	6.67									
1500		200	6.67	.02	.02	8.71	814	6.55	-105.8	1.52	9.65	
1505						8.63	812	6.88	-105.0	0.98	2.04	
1510						8.62	813	6.88	-104.5	0.82	0.43	
1515						8.58	814	6.86	-104.3	0.65	0.76	
1520						8.58	816	6.86	-101.8	0.58	0.13	
1525						8.57	816	6.87	-101.8	0.53	0.21	
1530			6.67			8.59	816	6.88	-99	0.49	0.19	Sample Time 15:40

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

Rev.: 2

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

Date : 12/7/2010 Page 1 of 1 **Well ID :** ~~MW-8~~ ASI-15D2 (SS)
Field Personnel Heidi Borchers Purging Start Time : 1428
Well Depth as installed (ft.): 14.5 Measured Well Depth (ft.): 42.67
Screen Length in ft. 5 Screen Depth in ft. 9.5-14.5 bgs Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 6.20 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 12 From: BGS Total Volume Purged, Including Drawdown (gallons): 3
Sample Designation ASI-015D2-1110A Time at Purge Completion: 1550
Sample Time 1510 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geo-Pump
Multimeter model and serial number YSI 600 XL SN# 99A1D 1069 Turbidity meter model and serial number LaMotte 2020e SN# MG 11995
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	
1435	NA	200	6.60	0.40	0.00	10.23	1.304	7.09	-138.4	2.56	18.6	
1440			6.60	0.40	0.00	10.12	1.299	7.10	-139.6	1.31	8.4	
1445			6.60	0.40	0.00	10.17	1.295	7.11	-140.1	1.25	3.16	
1450			6.60	0.40	0.00	10.14	1.294	7.12	-137.9	0.94	3.13	
1455			6.60	0.40	0.00	10.07	1.290	7.13	-150.0	0.54	2.2	
1500			6.60	0.40	0.00	10.09	1.291	7.13	-148.5	0.56	1.5	
1505			6.60	0.40	0.00	10.09	1.284	7.13	-146.3	0.53	0.78	
1510												Sampled @ 1510

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

Rev.: 2

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

Date : 12/1/2010 Page 1 of 1 **Well ID :** 16D2 ASI-16D2

Field Personnel Heidi Borchers Purging Start Time : 1143

Well Depth as installed (ft.): 35 (BGS) Measured Well Depth (ft.): 36.23 TOC 41.2 - bladder

Screen Length in ft. 5 (HB) Screen Depth in ft. Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): ~~8.45~~ 8.05 From: ~~TOC~~ PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 32.5 From: BGS Total Volume Purged, Including Drawdown (gallons): 3

Sample Designation ASI-016D2-1110A Time at Purge Completion: 1301

Sample Time 1235 Signature:

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

Multimeter model and serial number YSI 600XL (Pine SN# 10019) Turbidity meter model and serial number La Motte 2020e SN# MG-11995

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	mS/cm		mV	mg/L	NTU	
1145	NA	250	8.20	0.15	0.00	12.47	0.875	7.28	-114.9	4.27	4.82	
1150			8.20	0.15	0.00	12.22	0.869	7.35	-150.5	1.39	3.43	
1155			8.19	0.14	0.01	12.10	0.865	7.38	-137.7	0.44	2.26	
1200			8.15	0.10	0.04	12.13	0.859	7.40	-135.0	0.42	1.48	
1205			8.19	0.14	0.04	12.13	0.850	7.42	-144.0	0.23	2.00	
1210		225	8.18	0.13	0.01	12.07	0.851	7.43	-146.5	0.21	2.03	
1215		225	8.15	0.10	0.03	12.04	0.851	7.43	-138.1	0.26	2.06	
1220			8.15	0.10	0.00	12.05	0.850	7.43	-167.7	0.40	0.75	
1225			8.15	0.10	0.00	12.05	0.850	7.43	-165.5	0.21	0.52	
1230		225	8.15	0.10	0.00	12.02	0.850	7.43	-166.0	0.25	0.27	
1235												Sampled @ 1235

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

Rev.: 2

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

Date : 12-1-10 Page 1 of 1 **Well ID :** ASI 23 S
Field Personnel Ken Marks Purging Start Time : 0845
Well Depth as installed (ft.): 18 bgs Measured Well Depth (ft.): 20.63 TOC
Screen Length in ft. 10 Screen Depth in ft. 8-18 bgs Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 8.10 From: TOC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 13 From: GS Total Volume Purged, Including Drawdown (gallons): 0.5
Sample Designation ASI-023S-1110A Time at Purge Completion: 0955
Sample Time 0945 Signature: Ken Marks
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geo-Pump Low
Multimeter model and serial number YSI 650 MDS #01608533 Turbidity meter model and serial number LaMotte 2020e #12350 AA
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
	Geo-Pump											
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
0850	Low Low	100	12.6	4.5	–	9.99	0.413	6.58	12.3	4.72	32.7	Purge water slighty cloudy
0855	↓	100	14.8	2.2	6.7	10.09	0.400	6.47	-52.8	1.85	29.0	with black specks flotting
0900	↓	100	17.1	2.3	9.0	10.12	0.406	6.36	-49.2	2.25	23.6	↓
0905	↓	100	19.3	2.2	11.2	10.11	0.541	6.33	-37.0	3.00	21.1	clearer with some black
												specks flotting.
												↓
												I let well recharge
												to 8.22 DTW and
												sampled at a slow purge
												rate, 1045 end of
												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

Rev.: 2

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

Date : 12/1/2010 Page 1 of 1 **Well ID:** AS1-23D2
Field Personnel Heidi Borchers Purging Start Time : 0855
Well Depth as installed (ft.): 30 bgs Measured Well Depth (ft.): 31.28 TOC
Screen Length in ft. 5 Screen Depth in ft. 25-30 bgs Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 6.67 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 27.5 From: gs Total Volume Purged, Including Drawdown (gallons): 3.5
Sample Designation AS1-023D2-1110A Time at Purge Completion: 1045
Sample Time 1005 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geo Pump
Multimeter model and serial number YSI 600 XL SN# 1009 (pH/ORP) Turbidity meter model and serial number La Motte 2020e SN# MC-11995

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	
0900	NA	200	6.80	0.13	0.00	9.67	1.343	9.65	32.6	1.22	1.57	
0905			6.80	0.13	0.00	9.63	1.340	6.52	-0.5	1.51	3.19	
(HB) 0915 ~~0910~~			6.80	0.13	~~0.00~~							Needed to change tubing - diameter was too large - spraying
0920			6.80	0.13	0.00	9.71	1.328	6.50	-30.3	0.90	1.00	res. 0920
0925			6.80	0.13	0.00	9.77	1.326	6.50	-28.9	1.05	0.81	
0930			6.80	0.13	0.00	9.77	1.325	6.49	-28.4	0.93	0.58	
0935		200	6.80	0.13	0.00	9.80	1.323	6.50	-29.4	0.75	0.49	
0940			6.80	0.13	0.00	9.82	1.317	6.49	-31.7	0.69	0.46	
0945			6.80	0.13	0.00	9.77	1.315	6.48	-33.4	0.47	0.55	
0950			6.80	0.13	0.00	9.76	1.315	6.48	-33.7	0.36	0.48	
0955			6.80	0.13	0.00	9.81	1.312	6.48	-35.7	0.43	0.03	re-calibrated turbidity
1000			6.80	0.13	0.00	9.83	1.313	6.49	-34.1	0.26	0.03	

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.

1005 sampled @ 1005

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Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 12/1/10 Page 1 of 2 **Well ID :** BF-4

Field Personnel J. Ward Purging Start Time : 12:00

Well Depth as installed (ft.): 11.5' Measured Well Depth (ft.): 12.45

Screen Length in ft. 10' Screen Depth in ft. 1.5 → 11.5 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 8.15 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): ~10.5 From: PVC Total Volume Purged, Including Drawdown (gallons): 4.0

Sample Designation BF-4-1110A Time at Purge Completion: 13:50

Sample Time 13:25 Signature: [signature]

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

Multimeter model and serial number 600XL 02A0874AE Turbidity meter model and serial number ME - 10539

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	
12:05	5 / 10	150	8.23	—	—	12.06	420	6.41	-79.1	3.67	6.71	15 PSI
12:10	5 / 10	200	8.23	—	—	12.03	403	6.37	-77.6	1.06	45.8	
12:15	5 / 10	200	8.23	—	—	12.04	398	6.40	-77.5	0.46	47.6	
12:20	5 / 10	200	8.23	—	—	12.04	397	6.41	-77.6	0.45	45.0	
12:25	5 / 10	200	8.23	—	—	12.06	398	6.41	-77.8	0.44	43.9	
12:30	5 / 10	200	8.23	—	—	12.06	396	6.42	-77.5	0.43	34.1	
12:35	5 / 10	200	8.23	—	—	12.07	396	6.42	-77.2	0.43	34.1	
12:40	5 / 10	200	8.23	—	—	12.07	395	6.42	-76.5	0.46	21.0	
12:45	5 / 10	200	8.23	—	—	12.08	395	6.42	-76.0	0.41	15.0	
12:50	5 / 10	200	8.23	—	—	12.08	395	6.42	-75.6	0.41	12.4	
12:55	5 / 10	200	8.23	—	—	12.08	394	6.42	-75.3	0.41	10.03	
13:00	5 / 10	200	8.23	—	—	12.07	394	6.42	-74.5	0.40	9.22	

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

Rev.: 2

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

Date : 12/1/10 Page 2 of 2 **Well ID :** BF-4

Field Personnel Ward, Jason G. Purging Start Time : 12:00

Well Depth as installed (ft.): Measured Well Depth (ft.): 12.45

Screen Length in ft. 10 Screen Depth in ft. Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 8.15 From: Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft): ~~11.5~~ 10.5 From: Total Volume Purged, Including Drawdown (gallons): 4.0

Sample Designation BF-4 Time at Purge Completion: 13:50

Sample Time 13:25 Signature:

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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
13:05	5 / 10	200	8.23	—	—	12.09	393	6.42	-74.0	0.41	8.04	15 PSI
13:10	5 / 10	200	8.23	—	—	12.09	394	6.42	-73.8	0.40	7.87	
13:15	5 / 10	200	8.23	—	—	12.09	394	6.42	-74.0	0.41	7.84	Sampled @ 13:25

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 : 11/29/10 Page 1 of 2 **Well ID :** BM-35

Field Personnel K. Armitage Purging Start Time : 1325

Well Depth as installed (ft.): Measured Well Depth (ft.): 15.19 top of pvc

Screen Length in ft. ~~5~~ 10 Screen Depth in ft. 15 – 5 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 7.41 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 12.00 From: PVC Total Volume Purged, Including Drawdown (gallons): ~6

Sample Designation MS/MSD BM-035-1110A Time at Purge Completion: 1600

Sample Time 1510 Signature: K. Armitage

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder : p≈15psi ; R/D=11.5/3.5

Multimeter model and serial number YSI 650MDS : PINE178 Turbidity meter model and serial number LaMotte 2020e : ME14123

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

PINE# used for YSI ID because serial # was unreadable.

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	
1334			7.84									Adjust flowrates.
1340	11.5 / 3.5	300	7.84	Ø	Ø	11.28	1,016	6.62	121.9	3.40	8.34	p~18psi
1345	11.5 / 3.5	300	7.84	Ø	Ø	11.34	1,005	6.63	125.1	3.25	7.95	
1350	11.5 / 3.5	300	7.84	Ø	Ø	11.40	1,010	6.64	126.8	3.12	6.20	
1355	11.5 / 3.5	300	7.84	Ø	Ø	11.50	995	6.64	126.2	2.98	5.87	
1400	11.5 / 3.5	300	7.84	Ø	Ø	11.50	958	6.65	128.8	2.76	5.41	
1405	11.5 / 3.5	300	7.84	Ø	Ø	11.52	929	6.65	126.9	2.62	4.89	
1410	11.5 / 3.5	300	7.84	Ø	Ø	11.51	901	6.65	123.2	2.51	3.19	
1415	11.5 / 3.5	300	7.84	Ø	Ø	11.42	867	6.65	118.0	2.42	2.00	
1420	11.5 / 3.5	300	7.84	Ø	Ø	11.36	837	6.65	111.8	2.37	1.84	
1425	11.5 / 3.5	300	7.84	Ø	Ø	11.37	819	6.65	110.1	2.34	1.68	
1430	11.5 / 3.5	300	7.84	Ø	Ø	11.36	781	6.65	103.7	2.25	0.79	

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

Rev.: 2

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

Date : 11/29/10 Page 2 of 2 **Well ID :** BM-35

Field Personnel K Armitage 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 MS/MSD Time at Purge Completion: _____

Sample Time 1510 Signature: K Armitage

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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1435	11.5 / 3.5	300	7.84	Ø	Ø	11.40	764	6.65	100.4	2.23	0.68	
1445	11.5 / 3.5	300	7.84	Ø	Ø	11.37	741	6.64	96.4	2.21	0.14	
1450	11.5 / 3.5	300	7.84	Ø	Ø	11.36	728	6.64	95.0	2.23	0.17	
1455	11.5 / 3.5	300	7.84	Ø	Ø	11.39	717	6.64	93.9	2.20	0.10	
1500	11.5 / 3.5	300	7.84	Ø	Ø	11.38	708	6.64	92.5	2.19	0.00	
1505	11.5 / 3.5	300	7.84	Ø	Ø	11.37	699	6.64	90.9	2.19	0.00	
							✓					←

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

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

Date : 11/29/10 Page 1 of 2 **Well ID :** BM-3D

Field Personnel JF Purging Start Time : 13:25

Well Depth as installed (ft.): ~~30.38~~ 29 bgs Measured Well Depth (ft.): 30.38

Screen Length in ft. 5 Screen Depth in ft. 24-29 bgs Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 6.46 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 26.5 From: PVC Total Volume Purged, Including Drawdown (gallons): 6.5

Sample Designation BM-3D-1110A Time at Purge Completion: 1530

Sample Time 1525 Signature:

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

Multimeter model and serial number YSI 600XL 02A0874AB Turbidity meter model and serial number ME10055 / Lamotte 2020

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	uS/cm		mV	mg/L	NTU	
13:35	5 / 10	200	6.72	—	—	10.94	937	6.83	-68.5	3.91	125	
13:40	5 / 10	200	6.72	—	—	10.89	958	6.71	-85.6	3.96	96.9	
13:45	5 / 10	200	6.72	—	—	10.88	966	6.81	-88.0	4.01	78.7	
13:50	5 / 10	200	6.75	.03	.03	10.88	970	6.68	-92.0	3.89	66.3	
13:55	5 / 10	200	6.75	—	.03	10.91	972	6.67	-92.5	3.98	60.6	
14:00	5 / 10	200	6.75	—	.03	10.97	973	6.68	-93.5	3.77	55.3	
14:05	5 / 10	200	6.75	—	.03	10.97	974	6.66	-93.8	3.70	46.6	
14:10	5 / 10	200	6.75	—	.03	10.97	975	6.66	-93.4	3.71	44.8	
14:15	5 / 10	200	6.75	-	.03	10.93	975	6.65	-93.2	3.27	39.5	
14:20	5 / 10	200	6.75	-	.03	10.87	976	6.65	-93.2	2.91	32.3	
14:25	5 / 10	200	6.77	.02	.05	10.88	975	6.65	-93.3	2.64	27.7	
14:30	5 / 10	200	6.77	-	.05	10.83	976	6.65	-92.0	2.51	24.1	

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

Rev.: 2

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

Date : _____ Page 2 of 2 **Well ID :** BM-3D

Field Personnel _____ 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: _____

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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
14:35	5 / 10	200	6.77	—	.05	10.80	976	6.64	-91.4	2.13	24.6	
14:40	5 / 10	200	6.77	—	.05	10.78	975	6.64	-91.5	1.97	20.8	
14:45	5 / 10	200	6.77	—	.05	10.86	974	6.64	-92.2	1.81	24.3	
14:50	5 / 10	200	6.77	—	.05	10.86	976	6.66	-92.8	1.48	23.8	
14:55	5 / 10	200	6.77	—	.05	10.85	976	6.64	-92.5	1.26	18.3	
15:00	5 / 10	200	6.77	—	.05	10.84	976	6.63	-92.2	1.07	~~22.2~~ 18.4	
15:05	5 / 10	200	6.77	—	.05	10.86	977	6.63	-92.7	0.93	17.2	
15:10	5 / 10	200	6.77	—	.05	10.86	977	6.64	-92.8	.87	16.9	
15:15	5 / 10	200	6.77	—	.05	10.86	976	6.63	-92.7	.85	16.5	Sample Time 15:25

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

Rev.: 2

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

Date : 12/2/2010 Page 1 of 1 **Well ID :** BR-1
Field Personnel Heidi Borchers Purging Start Time : 0842
Well Depth as installed (ft.): 123 ft (bgs) Measured Well Depth (ft.): 7100
Screen Length in ft. 10 Screen Depth in ft. 113-123 bgs Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 17.55 From: ~~PT~~ TOC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 118 From: Total Volume Purged, Including Drawdown (gallons): 0.5
Sample Designation BR-001-1110A Time at Purge Completion: 1030
Sample Time 0945 Signature:
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) 600 pump
Multimeter model and serial number YSI 600 XL SN (Pine ID# 600a) Turbidity meter model and serial number La Motte 2020e SN# 11995 ME-
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	mS/cm		mV	mg/L	NTU	
0850	NA	75	~~17.55~~ 19.50	1.65	0.00	9.71	5.177	12.20	95.2	3.09	9.52	well drains down very fast - no reach
0855		↓	21.30	3.45	1.80	9.61	5.381	12.20	111.5	2.68	9.10	
0900			22.20	4.35	0.90	9.72	5.445	12.19	101.7	2.52	7.77	
0905			22.80	4.95	0.60	9.78	5.486	12.20	109.1	2.41	8.86	
0910		↓	23.50	5.65	0.70	9.68	5.512	12.22	98.9	2.34	4.36	
0915		75	24.15	6.30	0.65	9.70	5.545	12.21	91.9	2.19	3.83	
0920		↓	24.80	6.95	0.65	9.54	5.561	12.23	83.2	2.16	4.49	
0925		↓	25.45	7.60	0.65	9.58	5.565	12.26	74.8	2.14	4.59	
0930		↓	26.30	8.45	0.85	9.55	5.561	12.25	66.7	2.05	4.30	
0935		75	26.40	8.55	0.10	9.54	5.551	12.25	61.4	2.03	3.70	
0940		↓	26.50	8.65	0.40	9.47	5.555	12.27	57.2	2.02	3.33	
0945	↓	↓										Sampled @ 0945

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.

Attempted resample @ 1515 - DTW was 24.75

Could not collect 2 amber 100 mL bottles - well went dry ~1030 - will need to come back & collect later after recharge

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Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

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

Page 1 of 1

Date : 12/3/2010
Field Personnel: Heidi Barkers
Well Depth as installed (ft.):
Screen Length in ft.: Screen Depth in ft.:
Depth to GW (ft.): 18.57 From:
Pump/Tubing Intake set (ft.): From:
Sample Designation
Sample Time 0810
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geopump
Multimeter model and serial number Turbidity meter model and serial number
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.) 2 sVOCs Amber 1 L bottles.

Well ID : BR-1 - attempted recollection - successful -
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: 0820
Signature:

2 Ambers - now complete

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	
			18.57									collected.

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

Rev.: 2

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

Date : 12/2/10 Page 1 of 1 **Well ID :** BW-13S

Field Personnel Jay Ward Purging Start Time : 12:05

Well Depth as installed (ft.): 6 bgs Measured Well Depth (ft.): 7.25

Screen Length in ft. 1' Screen Depth in ft. 5-6' Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 4.62 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 5.5' From: PVC Total Volume Purged, Including Drawdown (gallons): 1.7

Sample Designation ~~BW-13SOF~~ BW-0135-1110A Time at Purge Completion: 1310

Sample Time 13:00 Signature: [illegible]

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) PERI P.# 2959

Multimeter model and serial number YSI 650XL 02A0874 A3 Turbidity meter model and serial number Lamotte 2020e ME 10539

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	
12:10		100	4.96	—	—	7.69	672	7.19	35.0	6.53	13.1	
12:15		100	4.99	.03	.03	7.86	651	6.82	39.4	6.79	5.89	
12:20		100	5.00	—	.03	7.88	642	6.69	40.7	4.26	2.71	
12:25		100	5.00	—	.03	8.06	625	6.60	41.3	3.61	1.58	
12:30		100	5.00	—	.03	8.06	619	6.55	42.2	3.44	0.92	
12:35		100	5.02	.02	.05	8.04	611	6.50	43.4	2.85	0.76	
12:40		100	5.03	.01	.06	8.01	604	6.47	44.0	3.07	0.41	
12:45		100	5.05	.02	.08	8.39	594	6.44	44.2	2.95	0.36	
12:50		100	5.05	—	.08	8.43	593	6.44	44.2	2.92	0.29	
12:55		100	5.06	.01	.09	8.42	593	6.43	44.5	2.95	0.25	
												Sample Time 13:00

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

Rev.: 2

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

Date : 11/29/10 Page 1 of 1 **Well ID :** MI-1
Field Personnel E. JOHNSON Purging Start Time : 1020
Well Depth as installed (ft.): 15.0 Measured Well Depth (ft.): 15.12
Screen Length in ft. 5' Screen Depth in ft. 10'-15' Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 6.91 From: TOP OF PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 12.5' From: 9S Total Volume Purged, Including Drawdown (gallons): 2.75
Sample Designation MI-01-1110A Time at Purge Completion: 1115
Sample Time 1120 Signature: Eric Johnson
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) BLADDER PUMP
Multimeter model and serial number YSI 600 XLM 12777 Turbidity meter model and serial number LAMOTTE 2020E ME 14820
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

No odor detected on purge water, MW opening @ sfc.

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	
1030	5 / 10	150	6.92	0.01	0.01	10.10	1,599	7.07	197.8	5.19	14.2	Pressure @ ~15 psi
1035	6.5 / 8.5	190	6.92	0.0	0.01	10.47	1,535	7.19	187.4	4.96	13.6	
1040	6.5 / 8.5	190	6.92	0.0	0.01	10.72	1,430	7.39	167.9	4.78	7.06	
1045	6.5 / 8.5	190	6.93	0.01	0.02	10.75	1,355	7.57	146.5	4.71	6.69	
1050	6.5 / 8.5	190	6.93	0.0	0.02	10.80	1,306	7.64	138.9	4.68	3.96	
1055	6.5 / 8.5	190	6.93	↓	↓	10.83	1,264	7.70	130.0	4.73	3.33	
1100	6.5 / 8.5	190	6.93			10.80	1,249	7.73	124.4	4.73	2.59	
1105	6.5 / 8.5	190	6.93			10.82	1,238	7.74	119.3	4.65	2.65	
1110	6.5 / 8.5	190	6.93			10.80	1,230	7.75	116.2	4.60	2.40	
1115	6.5 / 85	190	6.93	↓	↓	10.84	1,217	7.75	112.1	4.52	2.22	
												→ PARAMETERS STABILIZED, GW
												SAMPLED @ 11:20

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

Rev.: 2

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

Date : 11/29/10 Page 1 of 2 **Well ID :** ~~MI-2~~ MI-2
Field Personnel K Armitage Purging Start Time : 1025
Well Depth as installed (ft.): 15 bgs Measured Well Depth (ft.): NM
Screen Length in ft. 10 Screen Depth in ft. ~~top of pvc~~ 5-15 bgs Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 6.62 From: top of pvc Two Hour Time Limit Reached ? (Circle) Yes (No)
Pump/Tubing Intake set (ft.): 12.5 From: ~~top of pvc~~ bgs Total Volume Purged, Including Drawdown (gallons): 4
Sample Designation MI-02-1110A Time at Purge Completion: 1200
Sample Time 1155 Signature: K Armitage
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder : p≈15psi R/D = 10/5
Multimeter model and serial number YSI 650MDS : PINE1782 Turbidity meter model and serial number LaMotte 2020e : ME14123
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	
1035		240	6.71								~~NR~~	flow adjustments.
1040	10 / 5	240	6.71	0.0	0.09	11.68	220	6.18	197.3	7.18	22.2	p~15psi
1045	10 / 5	220	6.71	Ø	0.09	11.78	227	6.15	196.8	6.61	16.4	
1050	10 / 5	220	6.71	Ø	0.09	11.81	233	6.19	196.8	6.14	12.8	
1055	10 / 5	220	6.71	Ø	0.09	11.78	239	6.13	198.2	5.84	7.51	
1100	10 / 5	220	6.71	Ø	0.09	12.12	259	6.13	191.7	5.24	5.50	
1110	10 / 5	220	6.71	Ø	0.09	12.12	272	6.13	190.4	4.99	1.51	
1115	10 / 5	220	6.71	Ø	0.09	12.16	284	6.12	190.3	4.76	1.66	
1120	10 / 5	220	6.71	Ø	0.09	12.13	295	6.12	189.3	4.56	1.44	
1125	10 / 5	220	6.71	Ø	0.09	12.18	304	6.12	189.0	4.38	1.07	
1130	10 / 5	220	6.71	Ø	0.09	12.12	311	6.11	188.2	4.22	0.70	
1135	10 / 5	220	6.71	Ø	0.09	12.19	317	6.11	188.0	4.12		

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

See Page #1

Date : 11/29/10 Page 2 of 2 **Well ID :** MI-2
Field Personnel K Armitage. Purging Start Time : 1025
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: K Armitage
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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1140	10 / 5	220	6.71	Ø	0.09	12.08	320	6.11	188.2	4.04	0.63	p ~ 15psi
1145	10 / 5	220	6.71	Ø	0.09	12.10	326	6.11	187.9	3.96	0.60	
1150	10 / 5	220	6.71	Ø	0.09	12.10	328	6.11	187.7	3.94	0.56	
1155												Samples collected.

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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Prepared by: S. Bonis
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Date : 12/2/2010 Page 1 of 1 **Well ID :** MI-8
Field Personnel Heidi Bachars Purging Start Time : 1333
Well Depth as installed (ft.): 14.5 bgs Measured Well Depth (ft.): 13.53
Screen Length in ft. 5 Screen Depth in ft. 9.5-14.5 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 5.61 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 12 From: gs Total Volume Purged, Including Drawdown (gallons): 4
Sample Designation MI-008-1110A Time at Purge Completion: 1433
Sample Time 1415 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geo Pump
Multimeter model and serial number YSI 600 XL SN (pine ID # 1009) Turbidity meter model and serial number La Motte 2020e SN# 11995
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	mS/cm		mV	mg/L	NTU	
1340	NA	3.25	5.76	0.15	0.00	10.11	0.293	7.26	55.0	1.57	2.30	
1345			5.76	0.15	0.00	9.98	0.274	6.30	126.9	1.60	0.53	
1350			5.76	0.15	0.00	9.98	0.260	6.09	142.7	1.46	0.75	
1355			5.76	0.15	0.00	9.95	0.248	5.98	146.9	1.46	0.68	
1400			5.76	0.15	0.00	9.92	0.250	5.93	147.7	1.40	0.46	
1405		3.25	5.76	0.15	0.00	9.84	0.254	5.91	149.7	1.30	0.46	
1410			5.76	0.15	0.00	9.84	0.249	5.91	148.6	1.30	0.31	
1415												Sampled @ 1415

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.

C

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Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

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

Date : 12/1/10 Page 1 of 2 **Well ID :** MW-1D

Field Personnel K. Armitage Purging Start Time : 0902

Well Depth as installed (ft.): 40 bgs Measured Well Depth (ft.): 39.49 TOC

Screen Length in ft. 5 Screen Depth in ft. 38-33 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 2.62 From: PVC Two Hour Time Limit Reached ? (Circle) Yes No

Pump/Tubing Intake set (ft.): ~36 From: PVC Total Volume Purged, Including Drawdown (gallons): 5

Sample Designation MW-01D-1110A Time at Purge Completion: 1050

Sample Time 1040 Signature: K. Armitage

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder : P = ±30 psi, R/D = 10/5

Multimeter model and serial number YSI 650 MDS : Pine 1787 Turbidity meter model and serial number LaMotte 2020e : ME 14123

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	
0910	10 / 5	240	2.80	/	/	11.02	819	7.02	-211.9	2.84	165	
0915	10 / 5	220	2.80	Ø	Ø	11.07	805	7.00	-227.8	2.38	165	
0920	10 / 5	220	2.82	-0.02	0.02	11.10	787	7.04	-235.1	1.90	108.5	
0925	10 / 5	220	2.82	-0	0.02	11.11	781	7.09	-232.7	1.56	101.6	
0930	10 / 5	220	2.82	Ø	0.02	11.12	776	7.10	-234.2	1.37	99.4	
0935	10 / 5	220	2.82	Ø	0.02	11.14	772	7.13	-232.1	1.34	94.4	
0940	10 / 5	220	2.81	+0.01	0.01	11.14	770	7.15	-230.5	1.33	91.0	
0945	10 / 5	220	2.81	Ø	0.01	11.16	767	7.17	-232.2	1.32	94.5	
0950	10 / 5	220	2.81	Ø	0.01	11.17	765	7.17	-233.6	1.37	86.9	
0955	10 / 5	220	2.81	Ø	0.01	11.17	764	7.20	-232.4	1.34	77.1	
1000	10 / 5	220	2.81	Ø	0.01	11.16	763	7.22	-233.1	1.34	84.1	
1005	10 / 5	220	2.81	Ø	0.01	11.16	761	7.22	-232.2	1.33	78.2	
1010		220	2.81	Ø	0.01	11.18	759	7.22	-233.8	1.32	75.6	

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

Date : 12/1/10 Page 2 of 2 **Well ID :** MW-1D

See page 1

Field Personnel K Armitage
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 1040
Signature: K Armitage
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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1015	10 / 5	220	2.81	Ø	0.01	11.20	757	7.23	-234.5	1.33	70.8	
1020	10 / 5	220	2.81	Ø	0.01	11.25	756	7.24	-235.1	1.32	80.9	
1025	10 / 5	220	2.81	Ø	0.01	11.26	755	7.25	-239.6	1.34	70.0	
1030	10 / 5	220	2.81	Ø	0.01	11.28	753	7.25	-240.8	1.32	74.8	
1035	10 / 5	220	2.81	Ø	0.01	11.29	754	7.26	-238.7	1.35	75.4	
					✓	✓	✓	✓	✓	✓	✓	

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

Rev.: 2

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

Date : 11/29/10 Page 1 of 2 **Well ID :** MW-2M

Field Personnel E. JOHNSON Purging Start Time : 1357

Well Depth as installed (ft.): 29.3 bgs Measured Well Depth (ft.): 29.31

Screen Length in ft. 5 Screen Depth in ft. 24.3-29.3 bgs Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 3.22 From: TOP of PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 27 From: TOP of PVC Total Volume Purged, Including Drawdown (gallons): 6

Sample Designation MW-02M-1110A Time at Purge Completion: 1530

Sample Time 1525 Signature: J Fapiano for E. Johnson

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) BLADDER PUMP 18518

Multimeter model and serial number YSI 600 XLM 12777 Turbidity meter model and serial number LAMOTTE 2020E 14820

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

Misread measuring cup, purging @ ~250 ml/min w/ no drawdown. EJ

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
		250 EJ										
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1410	6.0 / 9.0	~~225~~	3.31			10.17	813	9.01	-27.0	1.11	92.2	Pressure @ ~20 psi, fairly
1415	6.0 / 9.0	~~228~~	3.31			10.15	813	8.93	-29.4	0.81	116	silty upon start up, no
1420	6.0 / 9.0	~~225~~	3.31			10.15	810	8.85	-29.5	0.62	65.1	odor detected on purge
1425	6.0 / 9.0	~~225~~	3.31			10.17	809	8.78	-28.8	0.54	74.0	water.
1430	6.0 / 9.0	250	3.31			10.10	810	8.73	-28.1	0.45	60.1	-Silt slowly clearing
1435	6.0 / 9.0	250	3.31			10.12	809	8.68	-27.2	0.43	63.0	
1440	6.0 / 9.0	250	3.31			10.10	811	8.64	-26.4	0.40	51.8	
1445	6.0 / 9.0	250	3.31			10.08	811	8.61	-25.8	0.36	49.5	
1450	6.0 / 9.0	250	3.31			10.11	809	8.57	-24.6	0.31	43.6	
1455	6.0 / 9.0	250	3.31			10.11	809	8.54	-23.7	0.31	39.9	
EJ ~~1455~~ 1500	6.0 / 9.0	250	3.31			10.08	809	8.53	-23.2	0.30	34.0	
1505	6.0 / 9.0	250	3.31			10.11	809	8.50	-22.2	0.23	36.5	

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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Low-Flow Field Log

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Rev.: 2

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

Date : 11/29/10 Page 2 of 2 **Well ID :** MW-2M
Field Personnel E. JOHNSON Purging Start Time : 1357
Well Depth as installed (ft.): Measured Well Depth (ft.): 29.31
Screen Length in ft. Screen Depth in ft. Parameter Stabilization: (Circle) Yes No
Depth to GW (ft.): 3.22 From: TOP OF PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 27 From: TOP OF PVC Total Volume Purged, Including Drawdown (gallons): 5
Sample Designation Time at Purge Completion: 1520
Sample Time 1525 Signature: Eric Johnson
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) BLADDER PUMP 18518
Multimeter model and serial number YSI 600 XLM 12777 Turbidity meter model and serial number LAMOTTE 2020E 14820
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	
1510	6.0 9.0	250	3.31			10.10	808	8.48	-21.4	0.20	29.9	
1515	6.0 9.0	250	3.31			10.06	808	8.46	-21.0	0.20	29.0	
1520	6.0 9.0	250	3.31			10.09	809	8.45	-20.7	0.21	27.9	
												PARAMETERS STABILIZED,
								@	1523	=	28.5	GW SAMPLED @ 1525,
												PURGE STILL SOMEWHAT
												SILTY, TURBIDITY REMAINING
												CONSTANT.

Eric Johnson

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

Date : 11/29/10 Page 1 of 1 **Well ID :** MW-3D
Field Personnel Jay Ward Purging Start Time : 10:25
Well Depth as installed (ft.): 90.2 bgs Measured Well Depth (ft.): 42'
Screen Length in ft. 5' Screen Depth in ft. 35.2-40.2 bgs Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 7.33 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 2' From Bottom From: Total Volume Purged, Including Drawdown (gallons): 3.5
Sample Designation MW-03D-1110A Time at Purge Completion: 12:20
Sample Time 11:49 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder
Multimeter model and serial number 600XL 02A0574A13 Turbidity meter model and serial number SN ME 10551 Lamotte 2020
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)
VOA 3 Pres Bumpers

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	
10:30	5 / 10	200	7.45	—		11.38	764	6.93	-172.9	4.46	201	22 psi
10:35	5 / 10	—	—	—	—	—	—	—	—	—	—	Faulty Flow-through Cell
10:50	5 / 10	200	7.49	.04	.04	11.16	693	7.26	-233.9	3.81	196	
10:55	5 / 10	200	7.49	—	.04	11.32	682	7.31	-252.6	5.30	193	
11:00	5 / 10	200	7.49	—	.04	11.43	672	7.33	-255.2	4.84	191	
11:05	5 / 10	200	7.49	—	.04	11.13	661	7.38	-269.9	3.93	178	
11:10	5 / 10	200	7.49	—	.04	11.24	651	7.41	-274.5	3.66	166	
11:15	5 / 10	200	7.49	—	.04	11.28	642	7.41	-277.8	3.13	172	
11:20	5 / 10	200	7.49	—	.04	11.38	634	7.43	-285.6	3.18	161	
11:25	5 / 10	200	7.49	—	.04	11.39	630	7.46	-294.2	4.04	174	
11:30	5 / 10	200	7.49	—	.04	11.34	629	7.50	-299.8	4.00	178	
11:35	5 / 10	200	7.49	—	.04	11.42	622	7.45	-303.2	4.02	179	Sampled @ 11:45

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

Date : ~~12/3/10~~ 12/2/10 (SS) Page 1 of 2

Well ID : MW-4D

Field Personnel E. JOHNSON J. Stewart

Purging Start Time : 918

Well Depth as installed (ft.): 38.5 bgs

Measured Well Depth (ft.): 38.53

Screen Length in ft. 5 Screen Depth in ft. 33.5-38.5

Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 3.26 From: TOP OF PVC

Two Hour Time Limit Reached ? (Circle) Yes No

Pump/Tubing Intake set (ft.): ~~36~~ 36.5' (EJ) From: TOP OF PVC

Total Volume Purged, Including Drawdown (gallons): 3

Sample Designation MW-04D-1110A

Time at Purge Completion: 1105

Sample Time 1115

Signature: [signature]

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) BLADDER PUMP 13521

Multimeter model and serial number YSI 600 XL 4309 Turbidity meter model and serial number LAMOTTE 2020E ME 14820

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

ADDED DEDICATED TUBING

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	
930	2.5 / 12.5	150	3.39	0.13	0.13	10.51	1,113	6.98	-236.5	1.86	NR	Pressure @ ~25psi, fairly
935	2.5 / 12.5	150	3.40	0.01	0.14	10.69	1,142	7.11	-272.3	0.94	41.3	silty purge H_2O.
940	2.5 / 12.5	150	3.40	0.00	0.14	10.59	1,149	7.23	-279.7	0.75	34.2	
945	2.5 / 12.5	150	3.41	0.01	0.15	10.66	1,152	7.33	-282.3	0.66	32.5	
950	2.5 / 12.5	150	3.41	0.00	0.15	10.67	1,155	7.41	-282.2	0.61	24.7	
955	2.5 / 12.5	150	3.41	0.00	0.15	NA	NA	NA	NA	NA	NA	
1000	Pulled	PUMP	(SS)	water	in air	line	air in	water	line	No	bladder	Installed installed bladder
1010	2.5 / 12.5	~~150~~ 50	3.29	-0.12	0.03	10.82	1124	7.41	-214.4	2.14	126	
1015	10 / 20	75	3.32	0.03	0.06	10.72	1078	7.36	-204.1	2.07	180	Switch to 2CPM
1020	14 / 16	150	3.31	-0.01	0.05	10.62	1102	7.37	-212.3	1.44	146	
1025	14 / 16	150	3.35	0.04	0.09	10.85	1112	7.40	-221.3	1.13	141	
1030	14 / 16	150	3.30	-0.05	0.04	10.86	1133	7.44	-232.6	0.84	123	

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

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

Date : 12/2/10 Page 2 of 2 **Well ID :** MW-4D

Field Personnel E. JOHNSON / J. STEWART Purging Start Time : 918

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.): 3.26 From: TOP OF PVC Two Hour Time Limit Reached ? (Circle) Yes (No)

Pump/Tubing Intake set (ft.): 36 From: TOP OF PVC Total Volume Purged, Including Drawdown (gallons): 3

Sample Designation MW-04D-1110A Time at Purge Completion: 1105

Sample Time 1115 Signature: Eric Johnson

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) BLADDER PUMP 13521

Multimeter model and serial number YSI 600 XL 4309 Turbidity meter model and serial number LAMOTTE 2020E ME14820

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	
1035	14 / 16	150	3.30	0.00	0.04	10.75	1132	7.47	-240.2	0.71	100	25 PSI
1040	14 / 16	150	3.33	0.03	0.07	10.86	1124	7.48	-245.3	0.64	102.1	
1045	14 / 16	150	3.33	0.00	0.07	10.90	1122	7.49	-246.2	0.58	82.4	
1050	14 / 16	150	3.33	0.00		10.86	1116	7.49	-247.7	0.54	92.9	
1055	14 / 16	150	3.33	0.00		10.91	1111	7.47	-246.9	0.54	71.2	
1100	14 / 16	150	3.33	0.00		11.03	1115	7.47	-245.8	0.52	69.1	
1105	14 / 16	150	3.33	0.00		11.08	1111	7.47	-246.0	0.50	71.6	
												Parameters stabilized, GW Sampled @ 1115.

Eric Johnson

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

Rev.: 2

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

Date : 11/30/2010 Page 1 of 1 **Well ID :** MW-5D ~~2~~ JF

Field Personnel Heidi Borchers Purging Start Time : 0900

Well Depth as installed (ft.): 33.5 bgs Measured Well Depth (ft.): 33.6

Screen Length in ft. 5 Screen Depth in ft. 28.5-33.5 bgs Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 6.5 From: PVC Two Hour Time Limit Reached ? (Circle) Yes (No)

Pump/Tubing Intake set (ft.): ~~[illegible]~~ 31 From: PVC Total Volume Purged, Including Drawdown (gallons): 6

Sample Designation ~~[illegible]~~ MW-05D-1110A Time at Purge Completion: 1030

Sample Time 1015 Signature: [illegible]

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) ~~[illegible]~~ Bladder pump dis. ~~15~~ rech. 10 (WB)

Multimeter model and serial number YSI 600 XL S.N# 10091 (Pine ID) Turbidity meter model and serial number LaMotte 2020e S.N# MG 11995

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	
0915	5 10	500	6.80	0.30	0.00	11.50	0.436	7.78	-161.5	5.11	212	
0920	↓	400	7.30	0.80	0.50	11.54	0.435	7.78	-160.3	5.07	202	
0925	5 10	400	6.80	0.30	0.50	11.48	0.425	7.77	-152.6	5.42	231	
0930		↓	6.80	0.30	0.00	11.47	0.421	7.77	-149.3	5.45	186	
0935		↓	6.80	0.30	0.00	11.45	0.418	7.76	-144.4	5.46	208	
0940		400	6.80	0.30	0.00	11.43	0.421	7.77	-135.5	5.56	198 (WB)	
~~0945~~		↓	6.80	0.30	0.00	11.42	0.418	7.78	-133.5	5.59	~~162~~	179
0950		↓	6.81	0.31	0.01	11.41	0.416	7.78	-124.5	5.67	178	
0955		↓	6.80	0.30	0.00	11.37	0.413	7.77	-120.2	5.68	157	
1000		400	6.80	0.30	0.00	11.36	0.413	7.76	-122.2	5.76	154	
1005		↓	6.80	0.30	0.00	11.35	0.422	7.75	-117.4	5.76	144	
1010	↓	↓										Sampled @ 1010

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

Rev.: 2

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

Date : 11-30-10 Page 1 of 2 **Well ID :** MW - 5D2 MW-5D2

Field Personnel Ken Marks

Purging Start Time : 0850

Well Depth as installed (ft.): 44.4 bgs

Measured Well Depth (ft.): 44.41

Screen Length in ft. 5 Screen Depth in ft. 39.4-44.4 bgs

Parameter Stabilization: (Circle) Yes / (No)

Depth to GW (ft.): 8.20 From: PVC

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

Pump/Tubing Intake set (ft.): 41.9 From: PVC

Total Volume Purged, Including Drawdown (gallons): 5

Sample Designation MW-05 D2-111104 Normal

Time at Purge Completion: 1055

Sample Time 1100

Signature: Ken Marks

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) ~~Lowatte 2020~~ QED 20 PSI

Multimeter model and serial number YSI 650MDS Turbidity meter model and serial number Lowatte 2020e

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

Page #1 of 2

Clock Time	Discharge / Refill / Pump Setting 20 PSI	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	
0900	5 / 10	150	8.48	0.28	—	11.19	1.031	6.76	-98.6	0.13	1452	Purge water silty gray. No odor
0905		120	8.40	0.20	0.2	11.40	1.034	6.92	-163.8	0.10	1411	
0910		120	8.40	0.0	0.2	11.49	1.088	7.00	-196.2	0.11	1007	
0915		120	8.40	0.0	0.2	11.60	1.086	7.06	-213.3	0.11	589	
0920		120	8.40	0.0	0.2	11.49	1.084	7.10	-228.6	0.11	530	
0925		120	8.40	0.0	0.2	11.52	1.086	7.13	-236.2	0.11	501	
0930		120	8.40	0.0	0.2	11.54	1.087	7.15	-241.1	0.11	426	
0935		120	8.40	0.0	0.2	11.56	1.089	7.16	-243.2	0.11	221	
0940		120	8.40	0.0	0.2	11.60	1.093	7.16	-247.3	0.11	200	
0945		120	8.40	0.0	0.2	11.63	1.095	7.17	-251.1	0.10	237	
0950		120	8.40	0.0	0.2	11.63	1.097	7.18	-255.7	0.10	259	
0955		120	8.40	0.0	0.2	11.60	1.099	7.18	-258.4	0.09	281	

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

Rev.: 2

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

Date : 11-30-10 Page 2 of 2 **Well ID :** MW-5D2

Field Personnel Ken Marks

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: Ken Marks

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.)

INFO on Page#1

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
	20 PSI											
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1000	5 10	120	8.40	0.0	0.2	11.58	1.090	7.19	-260.3	0.09	270	Page#2 of 2 S.Cond=1.090
1005		120	8.40	0.0	0.2	11.62	1.093	7.18	-265.1	0.09	251	INFO on Page#1
1010		120	8.40	0.0	0.2	11.61	1.095	7.18	-266.2	0.09	228	Purge water cloudy gray
1015		120	8.40	0.0	0.2	11.58	1.096	7.17	-271.1	0.09	213	
1020		120	8.40	0.0	0.2	11.62	1.092	7.17	-278.8	0.09	201	
1025		120	8.40	0.0	0.2	11.63	1.092	7.16	-288.1	0.09	190	
1030		120	8.40	0.0	0.2	11.65	1.091	7.16	-299.1	0.10	181	
1035		120	8.40	0.0	0.2	11.64	1.090	7.14	-308.1	0.10	211	
1040		120	8.40	0.0	0.2	11.64	1.090	7.13	-317.9	0.10	227	
1045		120	8.40	0.0	0.2	11.63	1.086	7.13	-323.4	0.10	199	
1050		120	8.40	0.0	0.2	11.65	1.078	7.12	-331.7	0.10	212	
1055		120	8.40	0.0	0.2	11.66	1.081	7.12	-338.9	0.10	202	

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.

Nobis Engineering, Inc. nobisengineering.com

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 11/30/10 Page 1 of 1 **Well ID :** MW-6M
Field Personnel KArmitage Purging Start Time : 0915
Well Depth as installed (ft.): 28.9 bgs Measured Well Depth (ft.): 28.85
Screen Length in ft. 5 Screen Depth in ft. 28.85-23.85 Parameter Stabilization: (Circle) (Yes) / No
Depth to GW (ft.): 5.55 From: PVC Two Hour Time Limit Reached ? (Circle) ~~Yes~~ / (No)
Pump/Tubing Intake set (ft.): 26.85 From: PVC Total Volume Purged, Including Drawdown (gallons): 3.5
Sample Designation MW-06M-1110A Time at Purge Completion: 1035
Sample Time 1015 Signature: KArmitage
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder : p=20 psi ; D/R=5/10
Multimeter model and serial number YSI 650 MDS : PINE1782 Turbidity meter model and serial number LaMotte 2020e : ME14123
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	
0920	10 / 5	200	5.84	~~0~~	~~0~~	11.63	1161	6.84	-132.9	8.18	280	
0925	10 / 5	200	5.85	0.01	0.01	11.65	1162	6.82	-135.3	7.11	201	
0930	10 / 5	200	5.85	Ø	0.01	11.77	1171	6.83	-142.5	3.59	147	
0935	10 / 5	200	5.85	Ø	0.01	11.75	1170	6.85	-147.9	2.20	126	
0940	10 / 5	200	5.85	Ø	0.01	11.77	1168	6.88	-153.6	2.02	111	
0945	10 / 5	220	5.86	0.01	0.02	11.74	1166	6.93	-153.7	1.30	94.5	
0950	10 / 5	220	5.86	Ø	0.02	11.74	1167	6.96	-156.9	1.05	77.4	
0955	10 / 5	220	5.86	Ø	0.02	11.75	1167	6.97	-157.3	0.95	82.7	
1000	10 / 5	220	5.86	Ø	0.02	11.76	1168	6.99	-158.2	0.93	85.7	
1005	10 / 5	220	5.86	Ø	0.02	11.75	1167	7.01	-158.6	0.90	84.9	
1010	10 / 5	220	5.86	Ø	0.02	11.74	1167	7.02	-158.9	0.94	87.8	

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

Rev.: 2

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

Date : 11/30/10 Page 1 of 1 **Well ID :** MW-6D
Field Personnel Jay Ward Purging Start Time : 9:15
Well Depth as installed (ft.): 37.9 bgs Measured Well Depth (ft.): 37.90
Screen Length in ft. 5' Screen Depth in ft. 32.9-37.9 bgs Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 5.35 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 2' From Bottom From: PVC Total Volume Purged, Including Drawdown (gallons): 2.0
Sample Designation MW6D-1110A Time at Purge Completion: 10:32
Sample Time 10:20 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder
Multimeter model and serial number YSI 650XL/02A0874AB Turbidity meter model and serial number LaMotte 2020 ME/0539
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)
Flush Mount New Well

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	
9:25	5 / 10	125	5.75	—	—	10.66	673	7.24	-176.3	1.55	198	21 PSI
9:30	5 / 10	125	5.75	—	—	11.12	642	7.39	-248.2	0.80	212	
9:35	5 / 10	125	5.75	—	—	11.13	646	7.47	-255.2	0.65	226	
9:40	5 / 10	125	5.75	—	—	11.19	648	7.54	-260.3	0.55	236	
9:45	5 / 10	150 ~~125~~	5.80	.05	.05	11.32	653	7.60	-263.7	0.59	191	
9:50	5 / 10	150	5.80	~~.05~~	.05	11.31	655	7.62	-261.3	0.55	154	
9:55	5 / 10	150	5.80	—	.05	11.24	657	7.64	-257.3	0.55	150	
10:00	5 / 10	150	5.80	—	.05	11.28	657	7.65	-253.0	0.60	111	
10:05	5 / 10	150	5.80	—	.05	11.28	661	7.66	-251.2	0.54	126	
10:10	5 / 10	150	5.80	—	.05	11.25	661	7.66	-247.4	0.52	119	
10:15	5 / 10	150	5.80	—	.05	11.27	661	7.66	-247.4	0.49	117	
												Sample Time 10:20

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.

[signature]

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Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 12/2/10 Page 1 of 1 **Well ID :** MW-7M

Field Personnel KArmitage Purging Start Time : 0857

Well Depth as installed (ft.): 34 bgs Measured Well Depth (ft.): 34.23

Screen Length in ft. ~~5.41~~ 5 Screen Depth in ft. 34.23-29.23 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 5.41 From: pvc mark Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 31.40 From: pvc mark Total Volume Purged, Including Drawdown (gallons): 3

Sample Designation MW-07M-1110A Time at Purge Completion: 1025

Sample Time 1010 Signature: KArmitage

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder : p~22psi : R/D = 10/5

Multimeter model and serial number YSI 650 MDS : PINE1782 Turbidity meter model and serial number LaMotte 2020e : ME14123

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

DO value low @ end of day cal check. (ES)

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	
0910	10 / 5	250	5.73	/	/	10.81	1,071	7.14	-126.4	1.97	195	p~22psi ✓
0915	10 / 5	250	5.73	Ø	Ø	10.81	1073	7.18	-130.3	1.85	228	
0920	10 / 5	250	5.73	Ø	Ø	10.77	1087	7.21	~~-126~~	1.99	241	ORP = -129.7
0925 ~~0920~~	10 / 5	250	5.73	Ø	Ø	10.78	1100	7.23	-127.5	2.11	238	
0930	10 / 5	250	5.73	Ø	Ø	10.75	1119	7.26	-123.4	2.32	237	
0935	10 / 5	250	5.73	Ø	Ø	10.82	1121	7.30	-122.9	2.61	140	
0940	10 / 5	250	5.73	Ø	Ø	10.81	1127	7.33	-122.8	2.79	168	
0945	10 / 5	250	5.73	Ø	Ø	10.83	1130	7.35	-124.4	3.02	175	
0950	10 / 5	250	5.73	Ø	Ø	10.80	1138	7.36	-123.7	3.09	165	
0955	10 / 5	250	5.73	Ø	Ø	10.83	1142	7.38	-126.4	3.13	160	
1000	10 / 5	250	5.73	Ø	Ø	10.83	1147	7.39	-125.0	3.18	177	
1005	10 / 5	250	5.73	Ø	Ø	10.82	1148	7.40	-125.2	3.20	178	

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

Rev.: 2

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

Date : 11/30/10 Page 1 of 1 **Well ID :** MW-8M
Field Personnel Jay Gilbert Purging Start Time : 12:16
Well Depth as installed (ft.): 24 Measured Well Depth (ft.): 23.97
Screen Length in ft. 5 Screen Depth in ft. 19-24 bgs Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 1.53 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 2' From Bottom From: PVC Total Volume Purged, Including Drawdown (gallons): 2.0
Sample Designation MW-08M-1110A Time at Purge Completion: 13:25
Sample Time 13:15 Signature:
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder
Multimeter model and serial number YSI 650XL 02A0874AB Turbidity meter model and serial number LaMotte 2020 ME/0539
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	
12:20	5 / 10	200	1.91	—	—	10.15	556	6.75	-5.4	3.36	62.5	18/19 PSI
12:25	5 / 10	200	1.91	—	—	10.66	559	6.51	-41.0	1.24	67.8	
12:30	5 / 10	200	1.91	—	—	10.75	564	6.53	-61.9	0.80	75.8	
12:35	5 / 10	200	1.93	.02	.02	10.74	563	6.59	-75.6	0.57	76.9	
12:40	5 / 10	200	1.93	—	.02	10.72	566	6.63	-78.5	0.48	54.1	
12:45	5 / 10	200	1.93	—	.02	10.73	568	6.67	-81.2	0.47	56.4	
12:50	5 / 10	200	1.93	—	.02	10.73	567	6.69	-82.0	0.41	46.1	
12:55	5 / 10	200	1.93	—	.02	10.73	565	6.72	-82.8	0.37	35.7	
13:00	5 / 10	200	1.93	—	.02	10.75	564	6.73	-82.6	0.37	35.2	
13:05	5 / 10	200	1.93	—	.02	10.77	561	6.74	-82.9	0.35	34.0	Sample Time 13:15

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

Rev.: 2

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

Date : 11/30/10 Page 1 of 1 **Well ID :** MW-8S
Field Personnel KArmitage Purging Start Time : 1210
Well Depth as installed (ft.): 19 bgs Measured Well Depth (ft.): 18.76
Screen Length in ft. 5 Screen Depth in ft. 18.76-13.76 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 1.85 From: PVC-mark Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 16.76 From: PVC-mark Total Volume Purged, Including Drawdown (gallons): 4
Sample Designation MW-08S-1110A Time at Purge Completion: 1325
Sample Time 1315 Signature: KArmitage
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder : p=20psi
Multimeter model and serial number YSI 650MDS : PINE 1782 Turbidity meter model and serial number LaMotte 2020e ME14123
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	
1215	10 / 5	300	1.93	—	—	11.23	918	6.20	39.2	6.01	78.4	p=20psi
1220	10 / 5	300	1.93	Ø	Ø	11.38	918	5.94	36.9	3.63	61.6	
1225	10 / 5	300	1.93	Ø	Ø	11.44	908	5.77	42.4	2.40	32.7	
1230	10 / 5	300	1.93	Ø	Ø	11.42	903	5.73	41.4	2.38	21.4	
1235	10 / 5	300	1.93	Ø	Ø	11.47	893	5.67	35.7	2.23	16.7	
1240	10 / 5	300	1.93	Ø	Ø	11.48	889	5.63	32.5	2.36	15.2	
1245	10 / 5	300	1.93	Ø	Ø	11.48	891	5.59	33.0	2.29	10.33	
1250	10 / 5	300	1.93	Ø	Ø	11.48	880	5.57	24.9	2.23	9.60	
1255	10 / 5	300	1.93	Ø	Ø	11.46	875	5.56	18.0	2.09	10.15	
1300	10 / 5	300	1.93	Ø	Ø	11.45	878	5.55	9.0	2.01	7.96	
1305	10 / 5	300	1.93	Ø	Ø	11.45	881	5.55	7.4	1.98	7.41	
1310	10 / 5	300	1.93	Ø	Ø	11.48	881	5.54	10.3	1.97	7.88	✓

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

Rev.: 2

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

Date : 12-1-10 Page 1 of 2 **Well ID :** MW-9M
Field Personnel Ken Marks Purging Start Time : 1435
Well Depth as installed (ft.): 30 bgs Measured Well Depth (ft.): 31.78 TOC
Screen Length in ft. 5 Screen Depth in ft. 25-30 bgs Parameter Stabilization: (Circle) Yes / No JF
Depth to GW (ft.): 9.08 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No JF
Pump/Tubing Intake set (ft.): 29 From: PVC Total Volume Purged, Including Drawdown (gallons): 6
Sample Designation MW-09M-1110A Time at Purge Completion: 1605
Sample Time 1555 Signature: Ken Marks
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder PSI = 22
Multimeter model and serial number YSI 650MDS # Turbidity meter model and serial number LaMotte 2020e # 12350
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Page #1 of 2

Clock Time	Discharge / Refill / Pump Setting PSI = 22	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3% mS/cm	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	
1440	5 / 10	250	9.01	–	–	12.17	1.790	6.79	-0.9	1.97	621	Purge water cloudy light brown
1445		250	9.07	–	–	11.96	1.833	6.79	-29.9	1.21	228	
1450		250	9.07	–	–	11.94	1.855	6.81	-62.2	3.37	202	
1455		250	9.07	–	–	11.93	1.875	6.84	-90.1	5.21	143	
1500		250	9.07	–	–	11.92	1.879	6.85	-112.9	4.66	102	
1505		250	9.07	–	–	11.89	1.876	6.84	-124.4	1.33	71.2	
1510		250	9.07	–	–	11.82	1.887	6.84	-126.5	1.71	56.0	
1515		250	9.07	–	–	11.84	1.893	6.84	-128.0	1.63	47.8	
1520		250	9.07	–	–	11.85	1.893	6.84	-128.6	1.39	44.3	
1525		250	9.07	–	–	11.82	1.903	6.84	-130.1	1.25	22.5	
1530		250	9.07	–	–	11.80	1.905	6.84	-131.0	1.16	18.2	
1535		250	9.07	–	–	11.71	1.908	6.85	-131.7	1.28	16.2	

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

Rev.: 2

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

Date : 12-1-10 Page 2 of 2 **Well ID :** MW-9M

Field Personnel Ken Marks 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 1555 Signature: Ken Marks

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.)

INFO on Page #1

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	
1540		250	9.07	–	–	11.63	1.911	6.85	-133.2	1.23	14.1	INFO on Page #1
1545		250	9.07	–	–	11.64	1.912	6.85	-133.1	1.31	14.4	↓
1550		250	9.07	–	–	11.65	1.912	6.85	-133.3	1.30	13.8	

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

Rev.: 2

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

Date : 12-2-10 Page 1 of 2 **Well ID :** MW-9D

Field Personnel Ken Marks Purging Start Time : 0910

Well Depth as installed (ft.): 40 bgs Measured Well Depth (ft.): 42.33 TOC

Screen Length in ft. 5 Screen Depth in ft. 35-40 bgs Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 8.78 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 39.5 From: PVC Total Volume Purged, Including Drawdown (gallons): 7

Sample Designation MW-09D-1110A Time at Purge Completion: 1050

Sample Time 1055 Signature: Ken Marks

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder Pump PSI = 25

Multimeter model and serial number YSI 650 MDS #0160853 Turbidity meter model and serial number LaMotte 2020e # 12350 AA

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

Clock Time	Discharge / Refill / Pump Setting PSI = 25	Purge Rate	Depth to Water	Draw down	Cum. Draw down	Temp. +/- 3%	Spec. Cond. +/- 3% mS/cm	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	
0920	5 / 10	250	9.01	0.23	-	10.17	0.372	7.50	-200.2	1.13	777	Purge water silty light brown
0925		250	8.97	0.19	0.19	10.11	0.357	7.74	-260.1	0.63	568	
0930		250	8.93	0.15	0.15	10.15	0.346	8.01	-292.7	0.50	505	
0935		250	8.81	0.03	0.03	10.15	0.340	8.18	-303.9	0.41	441	
0940		250	8.80	0.02	0.02	10.12	0.337	8.22	-312.6	0.33	411	
0945		250	8.80	0.0	0.02	10.21	0.332	8.30	-320.1	0.25	389	
0950		250	8.80	0.0	0.02	10.17	0.333	8.37	-328.1	0.24	340	
0955		250	8.80	0.0	0.02	10.22	0.328	8.39	-331.0	0.24	321	
1000		250	8.80	0.0	0.02	10.32	0.327	8.41	-333.7	0.26	301	
1005		250	8.80	0.0	0.02	10.37	0.326	8.42	-334.8	0.29	287	
1010		250	8.80	0.0	0.02	10.42	0.326	8.43	-330.4	0.77	262	
1015		250	8.80	0.0	0.02	10.51	0.324	8.44	-334.7	0.51	229	

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

Rev.: 2

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

Date : 12-7-10 Page 2 of 2 **Well ID :** MW-9D

Field Personnel Ken Marks 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: Ken Marks

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.)

INFO on page# 1

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	
1020		250	8.80	0.0	0.02	10.49	0.323	8.46	-334.6	0.30	262	Page#2 INFO on Page#1
1025		250	8.80	0.0	0.02	10.42	0.321	8.46	-334.9	0.28	301	
1030		250	8.80	0.0	0.02	10.50	0.321	8.45	-335.1	0.27	332	
1035		250	8.80	0.0	0.02	10.63	0.320	8.47	-338.0	0.27	288	
1040		250	8.80	0.0	0.02	10.68	0.321	8.46	-337.0	0.27	221	
1045		250	8.80	0.0	0.02	10.59	0.321	8.46	-337.6	0.27	219	Turbidity stable @ about
1050		250	8.80	0.0	0.02	10.61	0.321	8.45	-337.1	0.27	218	200 NTU

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

Rev.: 2

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

Date : 12/2/10 Page 1 of 1 **Well ID :** MW-10D
Field Personnel KArmitage Purging Start Time : 1217
Well Depth as installed (ft.): 35 bgs Measured Well Depth (ft.): 35.07
Screen Length in ft. 5 Screen Depth in ft. 30-35 bgs Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 2.59 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / (No)
Pump/Tubing Intake set (ft.): 32.95 From: PVC Total Volume Purged, Including Drawdown (gallons): 1.75
Sample Designation MW-10D-1110A Time at Purge Completion: 1514
Sample Time 1325 Signature: KArmitage
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder: P~20psi, R/D = 10.5/4.5
Multimeter model and serial number YSI 650MDS : PINE1782 Turbidity meter model and serial number LaMotte 2020e : ME14123
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)
very silty! DO check low @ end of day cal check (EJ)

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	
1225	10.5 / 4.5	110	2.74	—	—	11.00	446	7.83	-207.6	1.17	332	P~20psi
1230	10.5 / 4.5	100	2.70	-0.04	-0.04	11.12	449	7.83	-223.0	0.74	312	
1235	10.5 / 4.5	100	2.72	+0.02	-0.02	10.99	448	7.83	-234.3	0.53	327	
1240	10.5 / 4.5	100	2.72	Ø	-0.02	11.33	452	7.84	-239.6	0.46	305	
1245	10.5 / 4.5	100	2.72	Ø	-0.02	11.47	454	7.85	-247.2	0.38	524	
1250	10.5 / 4.5	100	2.70	-0.02	-0.04	11.35	453	7.85	-249.2	0.35	509	
1255	10.5 / 4.5	100	2.70	Ø	-0.04	10.98	449	7.85	-249.6	0.33	487	
1300	10.5 / 4.5	100	2.70	Ø	-0.04	10.99	450	7.86	-252.9	0.31	480	
1305	10.5 / 4.5	100	2.70	Ø	-0.04	11.20	454	7.86	-255.9	0.27	487	
1310	10.5 / 4.5	100	2.70	Ø	-0.04	11.24	456	7.86	-257.9	0.24	~~232~~ EJ	resampled turbidity = 499
1315	10.5 / 4.5	100	2.70	Ø	-0.04	11.03	454	7.87	-256.7	0.23	471	
1320	10.5 / 4.5	100	2.70	Ø	-0.04	11.03	454	7.87	-258.2	0.23	482	

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

Rev.: 2

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

Date : 12/1/10 Page 1 of 1 **Well ID :** MW-11S

Field Personnel E. JOHNSON Purging Start Time : 924

Well Depth as installed (ft.): 19 Measured Well Depth (ft.): 19.28 (12/1)

Screen Length in ft. 5 Screen Depth in ft. 14-19 Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 6.95 From: TOP OF PVC (FLUSH MT) Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 17' From: BSG Total Volume Purged, Including Drawdown (gallons): 5

Sample Designation MS/MSD Time at Purge Completion: 1015

Sample Time 1020 Signature: Eric Johnson

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) BLADDER PUMP 13521

Multimeter model and serial number YSI 600XL 4309 Turbidity meter model and serial number LAMOTTE 2020E ME14820

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

Added dedicated tubing.

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	
935	8.5 / 6.5	340	6.97	.02	.02	12.87	1,151	6.46	118.7	5.79	NM	Silty upon start-up, ~~psi~~ pressure @ 15 psi (EJ)
940	8.5 / 6.5	340	6.97			12.97	1,151	6.44	101.9	5.69	51.3	
945	8.5 / 6.5	340	6.97			13.02	1,153	6.44	96.0	5.70	25.9	
950	8.5 / 6.5	340	6.97			13.05	1,151	6.44	93.2	5.67	20.1	
955	8.5 / 6.5	340	6.97			13.06	1,146	6.44	91.6	5.63	12.5	
1000	8.5 / 6.5	340	6.97			13.07	1,139	6.44	90.4	5.53	10.59	
1005	8.5 / 6.5	340	6.97			13.09	1,142	6.43	89.8	5.55	9.00	
1010	8.5 / 6.5	340	6.97			13.09	1,137	6.43	89.3	5.50	8.41	
1015	8.5 / 6.5	340	6.97			13.13	1,132	6.43	89.4	5.44	8.75	
												Readings stabilize, GW sampled @ 1020.

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.

11-30-10 OE-2A

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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 : 11-30-10 Page 1 of 1 **Well ID :** OE-~~2B~~ 2A

Field Personnel Ken Marks Purging Start Time : 1240

Well Depth as installed (ft.): 35 bgs Measured Well Depth (ft.): 36.90

Screen Length in ft. 10 Screen Depth in ft. 25-35 bgs Parameter Stabilization: (Circle) Yes / No

Depth to GW (ft.): 7.09 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No

Pump/Tubing Intake set (ft.): 27.5 From: ~~PVC~~ SF GS Total Volume Purged, Including Drawdown (gallons): 2

Sample Designation OE-02A-1110A Time at Purge Completion: 1350

Sample Time 1355 Signature: Ken Marks

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder PSI = 20

Multimeter model and serial number YSI 650MDS #01608534A Turbidity meter model and serial number LaMotte 2020e #1235

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
	PSI-20											
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1255	10 / 5	100	7.20	0.11	–	9.01	2.118	7.34	-42.2	0.57	167	Purge water cloudy gray
1300		100	7.23	0.02	0.13	8.96	2.043	7.38	-82.9	0.38	119	
1305		100	7.24	0.01	0.14	8.94	1.977	7.42	-93.6	0.38	130	
1310		100	7.24	0.0	0.14	8.93	1.938	7.47	-112.0	0.38	111	
1315		100	7.24	0.0	0.14	8.94	1.920	7.49	-121.6	0.33	90.1	
1320		100	7.24	0.0	0.14	8.94	1.910	7.51	-137.2	0.21	73.8	
1325		100	7.24	0.0	0.14	8.93	1.902	7.54	-148.6	0.18	62.7	
1330		100	7.24	0.0	0.14	8.94	1.888	7.54	-152.7	0.17	51.3	
1335		100	7.24	0.0	0.14	8.92	1.898	7.55	-154.8	0.17	50.1	
1340		100	7.24	0.0	0.14	8.98	1.899	7.56	-156.9	0.17	46.3	
1345		100	7.24	0.0	0.14	8.97	1.894	7.57	-158.2	0.17	46.1	
1350		100	7.24	0.0	0.14	8.97	1.895	7.57	-158.8	0.17	45.7	

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

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

Date : 11/30/2010 Page 1 of 1 **Well ID :** OE-2B (HM) Dup.
Field Personnel Mark Barbers Purging Start Time : 1250
Well Depth as installed (ft.): 13 bgs Measured Well Depth (ft.): 15.4
Screen Length in ft. 10 Screen Depth in ft. 3-13 bgs Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 7.09 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 8 From: bgs Total Volume Purged, Including Drawdown (gallons): 4.5
Sample Designation OE-02B-1110A Time at Purge Completion: 1500
Sample Time 1405 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder pump - dis. 5 - recharg - 10
Multimeter model and serial number YSI 600XL SN# 1009 (Pine ID) Turbidity meter model and serial number La Motte 2020 SN# ME-11995
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	
1305	5 / 10	250	7.20	~~7.20~~ 0.11	0.00	9.58	0.062	5.36	127.7	3.05	56.5	
1310		250	7.20	0.11	0.00	9.58	0.066	5.33	147.3	4.07	63.4	
1315		↓	7.20	0.11	0.00	9.58	0.070	5.33	151.5	3.97	34.5	
1320		↓	7.20	0.11	0.00	9.60	0.072	5.32	149.5	3.69	25.7	
1325		↓	7.20	0.11	0.00	9.58	0.073	5.31	139.0	3.78	19.5	
1330		250	7.20	0.11	0.00	9.59	0.075	5.31	135.3	3.45	12.3	
1335		↓	7.20	0.11	0.00	9.57	0.081	5.30	134.3	3.39	10.16	
1340		↓	7.20	0.11	0.00	9.56	0.084	5.30	132.7	3.39	7.08	
1345		↓	7.20	0.11	0.00	9.55	0.085	5.31	129.8	3.24	5.65	
1350		250	7.20	0.11	0.00	9.52	0.088	5.32	127.4	3.15	4.42	
1355		↓	7.20	0.11	0.00	9.52	0.089	5.32	125.0	3.16	2.79	
1400		↓	7.20	0.11	0.00	9.49	0.090	5.32	123.3	3.23	3.13	

Notes: All depths in feet below top of PVC unless specified.
1405 NR = No Reading
Use the back of the log to record additional observations and descriptions.

Sampled @ 1405

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Vert. Profiling
Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 8/23/10 Page 1 of 1 **Well ID :** VP-01

Field Personnel J. Fapiano Purging Start Time : 1130

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

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

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

Pump/Tubing Intake set (ft.): – From: – Total Volume Purged, Including Drawdown (gallons): 12

Sample Designation – Time at Purge Completion: 1325

Sample Time – Signature: J. Fapiano

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

Multimeter model and serial number YSI 600XL / 05734 Turbidity meter model and serial number LaMotte 2020e / 11760

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

Depth (ft)	Sample/ 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	
15	1320	– / –	—	—	—	—	15.29	1314	6.39	-173.3	0.55	111	
20	1300	– / –	—	—	—	—	13.47	1133	6.45	-156.1	6.70	115	
25	1245	– / –	—	—	—	—	13.64	1583	6.13	-172.5	4.60	146	
30	1230	– / –	—	—	—	—	13.19	1420	6.14	-119.5	5.10	602	
35	1210	– / –	—	—	—	—	13.12	723	6.98	-189.3	5.30	1029	
40	1155	– / –	—	—	—	—	13.76	413	7.67	-220.7	4.30	1331	
43	1140	– / –	—	—	—	—	13.67	483	7.46	-200.1	0.38	813	

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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SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/13/10 Page 1 of 1 **Well ID :** VP-02

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 NA

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

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

Sample Designation — Time at Purge Completion: —

Sample Time — Signature: JOSL [signature]

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth (Ft)	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	NO Metals
10	0805	—	—	—	—	—	—	—	—	—	—	—	NO water
15	0820	—	—	—	—	—	15.20	1070	6.64	49.1	6.46	18.4	grey
20	900	—	—	—	—	—	13.59	1273	6.10	62.3	1.54	168	↓
25	1015	—	—	—	—	—	12.85	1248	6.27	60.0	1.36	184	↓
30	1055	—	—	—	—	—	13.36	1138	6.27	27.9	2.58	1000+	grey / Brown
35	1125	—	—	—	—	—	—	—	—	—	—	—	One vial collected
40	NA	—	—	—	—	—	NA						Stopped at 35 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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SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/15/10 Page 1 of 1 **Well ID :** VP-03

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 NA

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

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

Sample Designation – Time at Purge Completion: –

Sample Time – Signature: Josh S

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth Ft	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	
10	825	X	–	–	–	–	Not	enough	Water	for	readings		EPA Sample ONLY
15	835	X	–	–	–	–	16.12	777	6.76	11.7	4.40	6.69	Metal Clear
20	0850	X	–	–	–	–	14.57	580	6.22	38.4	0.54	198	grey/brown
25	0905	X	–	–	–	–	14.41	707	5.89	68.6	0.64	147	Metal lt brown
30	0925	X	–	–	–	–	14.75	432	6.13	4.2	0.70	268	grey/brown
35	0940	X	–	–	–	–	14.73	541	6.45	-74.0	0.57	1288	grey cloudy
38	1000	X	–	–	–	–	14.95	740	6.73	-114.9	1.16	206	Metal

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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Vert. Profiling Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/13/10 Page 1 of 1 **Well ID :** VP-04

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 NA

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

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

Sample Designation – Time at Purge Completion: –

Sample Time – Signature: Josh

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth Ft	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	
½	1415		–	–	–	–	No	Readings		Ran	out	of	water grey / brown
15	1430		–	–	–	–	15.00	440	6.42	45.9	1.52	2.92	↓
20	1440		–	–	–	–	13.49	634	6.12	76.2	1.01	244	↓
25	1455		–	–	–	–	13.03	588	5.64	87.7	0.74	787	↓
30	1510		–	–	–	–	13.07	720	5.86	50.2	0.72	801	grey
35	1525		–	–	–	–	12.66	1026	6.55	-103.9	0.77	172	↓
40	1545		–	–	–	–	13.53	0737	7.16	-159.6	0.40	1000+	↓

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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SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/14/10 Page 1 of 1 **Well ID :** VP-05

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 NA

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

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

Sample Designation – Time at Purge Completion: –

Sample Time – Signature: Josh

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number La Motte 2020

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

Depth Ft	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	
10	1050	X	–	–	–	–	Not Enough water for readings EPA Sample only						
15	1105	X	–	–	–	–	13.33	559	6.55	38.7	2.31	23.1	Dark Brown
20	1115	X	–	–	–	–	13.11	631	6.44	13.6	1.33	~~1532~~ 678	Brown
25	1135	X	–	–	–	–	12.53	709	6.47	-49.9	1.15	990	grey
30	1150	X	–	–	–	–	13.34	866	6.34	-18.7	1.60	1379	grey
35	1210	X	–	–	–	–	13.13	811	7.00	-145.9	1.58	1410	grey
~~40~~ 38	1315	X	–	–	–	–	14.49	502	7.65	-172.9	1.52	971	grey

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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SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/13/10 & 7/14/10 Page 1 of 1 **Well ID :** VP-06

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 NA

Depth to GW (ft.): – From: –

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

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

Total Volume Purged, Including Drawdown (gallons): –

Sample Designation –

Time at Purge Completion: –

Sample Time –

Signature: Josh

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth Ft	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	
12	1630			–	–	–	–	No Readings			No	Water	
15	1640		–	–	–	–	15.67	748	6.35	60.8	2.34	16.2	Grey/Brown
20	1650		–	–	–	–	13.91	742	6.33	36.7	0.64	143	Brown
25	1705		–	–	–	–	13.04	740	6.24	51.0	0.83	697	Grey
7/14/10 30	0820		–	–	–	–	13.42	523	6.18	-16.9	0.88	1729	Grey
35	0935		–	–	–	–	13.65	587	6.41	-44.1	2.26	150	Grey
40	1005		–	–	–	–	13.74	622	6.60	-84.4	1.02	831	Grey

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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SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/14/10 Page 1 of 1 **Well ID :** VP-07

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 NA

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

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

Sample Designation – Time at Purge Completion: –

Sample Time – Signature: Josh

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth Ft	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	
10	1440	X	–	–	–	–	17.90	1755	6.74	-36.0	5.67	7.37	Clear Odor
15	1500	X	–	–	–	–	15.53	931	6.71	-14.3	2.55	24.4	Clear
20	1515	X	–	–	–	–	14.63	864	6.37	22.2	1.29	1210	Cloudy / grey
25	1530	X	–	–	–	–	13.76	657	6.41	-43.8	0.61	2000+	Dark grey
30	1555	X	–	–	–	–	13.16	642	6.71	-108.9	0.71	2000+	Dark grey
35	1615	X	–	–	–	–	13.09	814	6.78	-131.9	1.35	1215	Cloudy / grey
40	1640	X	–	–	–	–	14.36	503	7.34	-179.9	1.55	633	Cloudy / grey

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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SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/12/10 Page 1 of 1 **Well ID :** VP-08

Field Personnel Jack 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 NA

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

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

Sample Designation – Time at Purge Completion: –

Sample Time – Signature: Jack

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth	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	
5 Ft	1210		–	–	–	–	NA	NA	NA	NA	NA	NA	No Water
10 Ft	1240 (SS)		–	–	–	–	Sample	Collected					No Water for Metals readings (SS)
15 Ft	1320		–	–	–	–	Sample	Collected					Metals Collected No readings
20 Ft	1400 (SS)		–	–	–	–	15.81	768	6.81	38.7	3.66	34.9	
25 Ft	1425		–	–	–	–	15.30	1455	6.28	65.3	3.88	56.2	Metals
30	1440		–	–	–	–	15.20	3409	6.18	3.9	3.37	817	
35	1500		–	–	–	–	14.89	6028	6.53	-93.2	2.23	183	
40	1520		–	–	–	–	15.20	986	6.45	52.1	2.77	103.2	Metals

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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SOP No: SA-003
Date: Mar. 2010

Rev.: 2

Prepared by: S. Bonis
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Date : 7/15/10 Page 1 of 1 **Well ID :** VP-09

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 NA

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

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

Sample Designation — Time at Purge Completion: —

Sample Time — Signature: Josh S

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth ft	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	
10	1040	X	—	—	—	—	17.31	1843	6.62	51.8	6.88	11.1	Clear
15	1055	X	—	—	—	—	15.02	1739	6.54	28.9	1.70	164	Cloudy
20	1110	X	—	—	—	—	13.55	703	6.47	31.9	0.54	150	Cloudy
25	1125	X	—	—	—	—	14.11	1049	6.34	43.1	0.49	1183	~~MS/MSD~~ Grey
30	1200	X	—	—	—	—	13.57	714	6.09	69.5	0.36	844	Grey
35	1215	X	—	—	—	—	13.20	671	6.39	-58.6	0.42	236	Cloudy
40	1320	X	—	—	—	—	14.63	695	7.09	-138.0	0.76	112	Cloudy FDUP 01

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
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Date : 7/15/10 Page 1 of 1 **Well ID :** VP-10
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 NA
Depth to GW (ft.): — From: — Two Hour Time Limit Reached ? (Circle) Yes / No NA
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) Peristaltic
Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.)

Depth Ft	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	
10	1440		—	—	—	—	Not enough water for readings						Sample Collected
15	1455		—	—	—	—	Not enough water for reading						Metals Brown Slow recharge
20	1515		—	—	—	—	13.72	3295	6.35	53.6	2.68	162	Brown
25	1535		—	—	—	—	13.42	2840	6.40	45.5	2.40	1158	Metals DUP 01
30	1600		—	—	—	—	12.97	1439	6.43	-30.7	0.54	850	grey
35	1625		—	—	—	—	12.99	981	6.46	-89.6	0.59	752	grey
40	1645		—	—	—	—	13.36	800	6.67	-136.4	0.47	683	Metals grey

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

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

Preserved with 1:1 Hydrochloric Acid

Date : 7/19/10 Page 1 of 1 **Well ID :** VP-11

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 NA

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

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

Sample Designation – Time at Purge Completion: –

Sample Time – Signature: Josh S

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth Ft	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	
15	1345	X	–	–	–	–	14.31	353	7.12	95.8	3.80	4.66	Clear
20	1400	X	–	–	–	–	13.25	590	6.67	28.8	1.91	127	Cloudy
25	1420	X	–	–	–	–	12.71	796	6.46	35.5	1.90	209	Cloudy
30	1435	X	–	–	–	–	12.41	892	6.56	-48.9	2.16	824	lt grey Cloudy
35	1515	X	–	–	–	–	14.22	848	6.89	-128.9	1.85	188	Cloudy
40	1540	X	–	–	–	–	14.69	677	7.10	-139.9	1.83	866	Cloudy lt grey

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/20/10 Page 1 of 1 **Well ID :** VP-12

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 NA

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

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

Sample Designation – Time at Purge Completion: –

Sample Time – Signature: Josh S

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Used the SP-15 Sampler FROM 25 Ft down Silt was flowing into the Other Sampler

Depth Ft	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	
15	0810	X	–	–	–	–	17.29	349	6.56	-11.7	5.72	114	Clear
20	0825	X	–	–	–	–	15.61	900	6.15	1.3	0.92	191	Cloudy
25	0905	X	–	–	–	–	16.20	1084	6.63	-108.5	1.00	234	Cloudy
30	0930	X	–	–	–	–	15.73	722	6.81	-99.9	1.53	102.5	Clear
35	0955	X	–	–	–	–	16.00	736	6.81	-119.9	1.23	139	Cloudy
40	1020	X	–	–	–	–	16.80	564	7.15	-136.9	1.31	224	Cloudy

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/16/10 Page 1 of 1 **Well ID :** VP-13

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 NA

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

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

Sample Designation — Time at Purge Completion: —

Sample Time — Signature: Josh

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth Ft	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	
10	805		—	—	—	—	Not enough water for readings						It Brown
15	0820		—	—	—	—	16.10	1222	6.32	20.4	3.61	13.2	Clear
20	0835		—	—	—	—	14.20	2162	6.17	24.6	1.06	138	Cloudy It Brown
25	0855		—	—	—	—	13.98	1890	6.29	-38.9	0.95	208	Cloudy It Brown
30	0920		—	—	—	—	13.68	1215	6.67	-110.9	0.81	1374	grey
35	0940		—	—	—	—	13.71	1050	6.70	-117.5	0.91	216	Cloudy
40	1005		—	—	—	—	13.99	545	7.26	-163.9	0.64	2000+	Dark grey

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/19/10 Page 1 of 1 **Well ID :** VP-14

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 NA

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

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) Peristaltic

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth Ft	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	
15	1625	X	–	–	–	–	17.31	1723	6.55	-0.4	1.97	43.1	VOC MS/MSD Metals
20	1645	X	–	–	–	–	15.45	820	6.46	31.3	1.48	214	Cloudy
25	1700	X	–	–	–	–	14.67	1982	6.28	27.7	1.88	235	Metals DUP OZ
30	1720	X	–	–	–	–	14.22	1756	6.78	-96.7	1.20	925	lt grey Cloudy
35	1745	X	–	–	–	–	14.20	2175	6.96	-131.9	1.41	1029	lt grey Cloudy
40	1805	X	–	–	–	–	14.02	760	7.28	-151.9	1.10	112	Metals Cloudy

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/16/10 Page 1 of 1 **Well ID :** VP-15

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 NA

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

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

Sample Designation – Time at Purge Completion: –

Sample Time – Signature: Josh [signature]

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth ft	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	
10	1040		–	–	–	–	17.58	831	6.93	20.0	7.24	37.8	lt Brown
15	1055		–	–	–	–	15.20	2229	6.62	25.9	4.00	192	lt Brown
20	1120		–	–	–	–	14.26	2929	6.53	31.0	1.53	1836	lt grey / brown
25	1140		–	–	–	–	13.82	1897	6.46	-6.3	0.64	923	grey / brown
30	1205		–	–	–	–	14.51	1322	6.80	-91.8	1.35	2106	grey / brown
35	1310		–	–	–	–	14.32	880	7.22	-130.8	0.88	1373	Dark grey
40	1345		–	–	–	–	15.46	849	7.43	-162.1	1.12	202	Cloudy grey

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/16/10 Page 1 of 1 **Well ID :** VP-16

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 NA

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

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

Sample Designation — Time at Purge Completion: —

Sample Time — Signature: Josh S

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth Ft	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	
10	1520	X	—	—	—	—	18.58	2889	6.94	63.1	6.25	11.9	Clear
15	1535	X	—	—	—	—	16.50	1764	6.62	44.4	2.30	1147	Brown
20	1550	X	—	—	—	—	14.61	1661	6.46	52.9	1.76	265	Cloudy
25	1605	X	—	—	—	—	14.79	1246	6.33	55.0	1.10	685	lt Grey
30	1625	X	—	—	—	—	14.14	943	6.74	82.8	0.99	1951	grey
35	1720	X	—	—	—	—	16.09	785	7.24	156.7	0.77	1084	grey
40	1805	X	—	—	—	—	15.24	1309	7.52	163.0	0.88	1173	grey Cloudy

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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Vert. Profiling
Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/17/10 Page 1 of 1 **Well ID :** VP-17

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 NA

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

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

Sample Designation — Time at Purge Completion: —

Sample Time — Signature: Josh S

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth Ft	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	
10	0835		Not enough			water	for	readings			Sample	Collected	/ Brown
15	0845		—	—	—	—	16.75	709	6.81	40.3	3.59	67.9	Clear
20	0910		—	—	—	—	14.66	258	6.59	12.9	1.20	2000+	Dark grey / Brown
25	0935		—	—	—	—	14.18	423	6.68	50.8	1.21	168	↓
30	1015		—	—	—	—	15.32	924	6.75	-102.9	2.34	125	Cloudy
35	1040		—	—	—	—	15.18	653	7.15	-124.9	2.02	182	Cloudy
40	1110		—	—	—	—	15.08	477	7.62	-182.3	0.87	807	Cloudy grey
45	1155		in Clay	Unable to draw water						VP 45 - 41		FT	Pulled up to 41 No water

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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Vert Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 8/24/10 Page 1 of 1 **Well ID :** VP-18

Field Personnel J. Fopiano Purging Start Time : 0900

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

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

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

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

Sample Designation — Time at Purge Completion: 1145

Sample Time — Signature: J Fopiano

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

Multimeter model and serial number YSI 600XL/05734 Turbidity meter model and serial number LaMotte 2020e/11760

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

Depth (ft)	Sample/ 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	
15	0905	— —	—	—	—	—	15.79	1826	6.53	-124.2	1.16	72	
20	0920	— —	—	—	—	—	15.30	1967	5.76	-136.6	1.73	185	
25	—	— —	—										Too silty; no sample/parameters
30	1015	— —	—	—	—	—	15.37	997	6.82	-166.4	1.07	328	SP-16 used
35	1055	— —					17.85	789	7.27	-181.7	0.73	ABR	Dupe collected
40	1140	— —											Too silty; no parameters; Mobile
													lab sample only

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/20/10 Page 1 of 1 **Well ID :** VP-19

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 NA

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

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) Peristaltic

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth Ft	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	
15	1105	\	–	–	–	–	18.03	2417	6.22	113.2	1.87	40.1	Clear
20	1120	\	–	–	–	–	16.25	1977	6.26	-1.6	1.85	126	Cloudy
25	1150	\	–	–	–	–	14.56	1474	6.25	-72.3	1.29	1101	Cloudy grey
30	1215	\	–	–	–	–	14.74	1616	6.55	-116.9	1.12	814	Cloudy grey
35	1250	\	–	–	–	–	15.72	913	6.95	-130.9	1.90	148	Cloudy
40	1320	\	–	–	–	–	15.65	498	7.80	-158.0	1.57	1098	Dark grey
45	1420	\	–	–	–	–	14.37	409	7.90	-173.9	1.57	2129	Dark grey

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/28/10 Page 1 of 1

Well ID : VP-20

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 NA

Depth to GW (ft.): — From: —

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

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) Peristaltic

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth ft	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	
15	1610		—	—	—	—	16.08	797	6.95	-63.5	2.01	64.4	Metals / Brown
20	1630		—	—	—	—	13.66	2458	6.87	-105.9	1.89	216	Brown Cloudy
25	1705		—	—	—	—	13.71	1290	7.28	-109.9	1.70	1067	Metals Brown
30	1740		—	—	—	—	15.60	990	7.46	-132.9	1.38	222	Cloudy grey
35	1805		—	—	—	—	15.05	822	7.32	-142.8	1.00	2000+	Dark grey
40	1855		—	—	—	—	No	reading	water	too	silty		Metals and EPA sample only

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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Vertical Profiling

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 8/24/10 + 8/25/10 Page 1 of 1

Field Personnel J. Fapiano

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-21

Purging Start Time : 1630 (8/24/10)

Measured Well Depth (ft.): —

Parameter Stabilization: (Circle) Yes / No NA

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

Total Volume Purged, Including Drawdown (gallons): _____

Time at Purge Completion: 0825 (8/25/10)

Signature: J. Fapiano

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

Multimeter model and serial number YSI 600XL/05734 Turbidity meter model and serial number Lamotte 2020e/11760

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

Depth (ft)	Sample/ 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	
8/25/10 15	0755	— —	—	—	—	—	13.86	261	6.09	-159.2	1.86	7.36	MS/MSD
↓ 20	0820	— —	—	—	—	—	12.92	187	5.55	-163.2	2.31	29.1	
8/24/10 25	1825	— —	—	—	—	—	12.88	650	5.89	-198.6	2.60	1181	Very silty; only EPA sample collected; SP-16
30	1750	— —	—	—	—	—	12.90	708	7.20	-200.0	0.29	1327	Very silty; only EPA sample collected; SP-16
35	1720	— —	—	—	—	—	—	—	—	—	—	—	Too silty; unable to obtain params; EPA sample only SP-16
↓ 40	1645	— —	—	—	—	—	15.18	162	7.34	-188.2	0.32	1281	SP-16

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/21/10 Page 1 of 1 **Well ID :** VP-22

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 NA

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

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

Sample Designation – Time at Purge Completion: –

Sample Time – Signature: Josh S

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

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

SP-15 used at 35 and 40

Depth ft	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	
15	0840	X	–	–	–	–	13.42	2614	6.94	-146.1	1.84	61.8	Metals MS/MSD
20	0910	X	–	–	–	–	14.98	2423	7.04	-134.1	1.43	155	lt brown
25	0955	X	–	–	–	–	12.85	1797	7.22	-116.5	2.27	1317	Metals Dark grey
30	1045	X	–	–	–	–	13.41	11.50	7.27	-129.7	1.84	2000+	lots of silt reacted with HCl
35	1105	X	–	–	–	–	15.55	882	7.35	-141.9	2.12	60.3	Clear - SP-15 used
40	1150	X	EPA Sample only				Could not get enough water						~~Metals~~ - SP-15 used

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.

Nobis Engineering, Inc. nobisengineering.com

Vert. Profiling Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/21/10 Page 1 of 1 **Well ID :** VP-23

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 NA

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

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) Peristaltic

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth Ft	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	
15	1325	X	—	—	—	—	16.19	1608	6.47	128.9	2.91	5.75	Clear
20	1355	X	—	—	—	—	13.57	1939	5.94	182.2	2.02	97.2	lt brown
25	1430	X	—	—	—	—	13.46	2431	5.67	307.9	2.77	1341	lt brown
30	1455	X	—	—	—	—	14.16	2418	6.95	-92.9	1.58	200	Cloudy lt grey
35	1630	X	—	—	—	—	No reading to silt				—	2000+	Metals VP-22 replacement Dark grey
(SS) 38 ~~40~~	1715	X	No readings to silt				EPA Sample only					2000+	Dark grey
41 ~~40~~	1805	X	No water			EPA Sample only				600 silt			Dark grey
50													

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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Vertical Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 8/24/10 Page 1 of 1 **Well ID :** VP-24

Field Personnel J. Fopiano Purging Start Time : 1330

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

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

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

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

Sample Designation — Time at Purge Completion: 1530

Sample Time — Signature: J Fopiano

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

Multimeter model and serial number YSI 600XL / 05734 Turbidity meter model and serial number LaMotte 2020e / 11760

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

Depth (ft)	Sample/ 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	
15	1455	— —	—	—	—	—	14.82	373	6.52	-56.7	0.36	11.8	Poor yield
20	1520	— —	—	—	—	—	14.58	389	6.06	-72.0	0.38	15.3	
25	1435	— —	—	—	—	—	13.17	488	7.45	-191.3	0.28	26.1	
30	1420	— —	—	—	—	—	14.14	339	7.90	-216.0	0.39	34.6	
35	1355	— —	—	—	—	—	13.58	212	7.85	-204.7	0.33	28.7	
40	1340	— —	—	—	—	—	13.59	198	7.61	-202.0	0.63	34.6	

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/23/10 Page 1 of 1 **Well ID :** VP-25

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 NA

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

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) peristaltic

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

SP-15 Uses 35 ft down

Depth Ft	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	
15	1030	X	—	—	—	—	16.55	428	7.18	-79.9	5.58	13.3	Metals Clear
20	1045	X	—	—	—	—	14.76	390	6.37	30.0	3.96	31.5	Clear
25	1120	X	—	—	—	—	13.39	1018	6.04	-84.0	4.47	67.9	Metals DUP-03 Clear
30	1200	X	—	—	—	—	15.10	1171	6.50	-150.9	0.72	189	Cloudy grey
35	1235	X	—	—	—	—	16.00	740	6.90	-170.9	0.99	192	Cloudy grey SP-15
40	1300	X	—	—	—	—	15.63	528	7.02	-149.6	1.02	190	Cloudy dark grey
45	1325	X	—	—	—	—	15.89	526	7.30	-194.8	1.03	151	Cloudy

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/23/10 Page 1 of 1 **Well ID :** VP-26

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 NA

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

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) Peristaltic

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

SP-15 Used at 30 ft and down

Depth Ft	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	
15	1510	X	—	—	—	—	16.00	600	6.44	-63.7	3.35	22.0	Clear
20	1525	X	—	—	—	—	14.40	537	6.13	-129.7	0.84	221	Cloudy
25	1545	X	—	—	—	—	14.17	755	6.25	-198.9	0.92	1229	grey
30	1620	X	—	—	—	—	14.80	854	7.21	-231.9	0.74	228	Cloudy grey
35	1645	X	—	—	—	—	14.44	829	7.23	-215.8	0.72	238	Cloudy grey
40	1720	X	—	—	—	—	15.08	460	7.54	-251.7	0.54	1062	grey
45	1745	X	—	—	—	—	15.54	276	7.73	-235.9	0.66	1192	grey

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/24/10 Page 1 of 1 **Well ID :** VP-27

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 NA

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

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) Peristaltic

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number La Motte 2020

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

VP-15 uses at 30 ft on.

Depth ft	Clock Time HHMM	Discharge / Refill / Pump Setting sec. / sec. or setting	Purge Rate ml/min	Depth to Water ft.	Draw down ft.	Cum. Draw down ft.	Temp. +/- 3% °C	Spec. Cond. +/- 3% µS/cm	pH +/- 0.1	ORP +/-10 mV	DO +/- 10% if >0.5 mg/L mg/L	Turbidity +/- 10% if > 5 NTU NTU	Comments / Gas Pressure / Observations lots of bubbles reaction with HCl Possible
15	1055	\	–	–	–	–	15.97	1233	6.58	-20.7	8.87	33.9	Metals Clear lots of air
20	1115	\	–	–	–	–	14.47	749	5.62	45.2	0.99	54.5	Clear
25	1145	\	–	–	–	–	13.57	1162	5.38	15.2	0.81	670	Cloudy grey Metals
30	1215	\	–	–	–	–	15.10	1067	6.16	-139.9	0.65	200	Cloudy lt grey
35	1235	\	–	–	–	–	14.95	1145	6.44	-168.3	1.13	1124	Cloudy grey
40	1305	\	–	–	–	–	14.79	487	6.77	-195.8	4.05	1714	Metals grey
45	1335	\	–	–	–	–	16.07	233	7.11	-198.9	0.57	2009	grey

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/24/10 Page 1 of 1 **Well ID :** VP-28

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 NA

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

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) Peristaltic

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number La Motte 2020

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

SP-15 Uses 0.7 35 and 40 FT

Depth Ft	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	
15	815		–	–	–	–	12.21	301	5.21	76.0	0.61	6.33	Clear
20	830		–	–	–	–	11.91	1140	5.11	25.0	0.64	18.0	Clear
25	850		–	–	–	–	10.90	909	5.76	-73.9	0.44	213	Cloudy
30	0910		–	–	–	–	10.64	1105	6.43	-116.5	0.54	141	Cloudy
35	0950		–	–	–	–	11.80	294	7.25	-168.9	0.57	1515	Cloudy grey
40	1015		–	–	–	–	12.61	217	7.36	-175.1	0.63	1274	Cloudy grey

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/22/10 Page 1 of 1 **Well ID :** VP-29

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 NA

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

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

Sample Designation – Time at Purge Completion: –

Sample Time – Signature: Josh S

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

Multimeter model and serial number ~~YA~~ YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth Ft	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	
15	1340		–	–	–	–	17.04	326	6.00	9.3	7.36	173	Dark Brown
20	1405		–	–	–	–	13.72	219	5.67	32.6	6.63	127	lt Brown
25	1435		–	–	–	–	13.78	337	5.73	329.0	5.90	69.4	lt grey
30	1510		–	–	–	–	15.80	647	6.62	41.0	0.82	183	lt grey
35	1545		–	–	–	–	15.28	363	5.54	-155.9	0.46	138	Dark grey
40	1625		–	–	–	–	15.63	187	6.44	-16.9	0.55	84.4	Dark grey

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/22/10 Page 1 of 1 **Well ID :** VP-30

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 NA

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

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) Peristaltic

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Switch to SP-15 at 30 ft

Depth Ft	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	
15	0850		—	—	—	—	15.66	393	6.29	50.2	8.17	5.89	Air Bubbles → high DO Clear
20	0910		—	—	—	—	13.46	377	6.05	-128.9	4.03	222	MS/MSD VOC Cloudy lt brown
25	0925		—	—	—	—	12.48	732	6.60	-67.2	2.82	666	Cloudy lt grey
30	1010		—	—	—	—	12.70	305	7.75	-182.9	1.12	231	Cloudy lt grey
35	1040		—	—	—	—	12.58	204	7.65	-198.1	0.36	640	Cloudy grey
40	1130		—	—	No readings to silty sample collected							2000+	Silt reacted with the HCl Dark grey
43			No water in clay layer										

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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Vert. Profiling ~~Low-Flow~~ Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 7/22/10 - 7/23/10 Page 1 of 1 **Well ID :** VP-31

Field Personnel JSL 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 NA

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

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) Peristaltic

Multimeter model and serial number YSI 600XL Turbidity meter model and serial number LaMotte 2020

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

Depth ft	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	
15	1745	\	–	–	–	–	15.80	548	4.86	-74.7	1.87	32.6	Clear
20	1800	\	–	–	–	–	14.12	776	4.47	-492.5	1.23	643	Cloudy
25	1820	\	–	–	–	–	13.42	801	4.61	-459.0	0.99	835	Cloudy
30	800	\	–	–	–	–	13.51	757	5.73	-378.2	0.72	213	Cloudy
35	0825	\	–	–	–	–	13.34	1059	6.17	-199.7	0.95	90.3	Cloudy
40	0900	\	–	–	–	–	13.52	803	6.93	-241.9	0.43	2000+	DUP - 02

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

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 +/-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	
1500						19.62	1022	6.12	-49.6	3.80	461	15 ft
1525						17.86	953	5.65	25.5	2.11	373	20 ft
1555						17.56	467	6.11	-38.9	0.69	1000+	25 ft
1615						16.84	910	6.47	-90.6	1.11	250	30 ft
1645						16.92	763	7.03	-168.4	0.77	263	35 ft
1715						17.76	612	7.19	-138.4	2.99	425	40 ft
1820			No	Recovery		in	Clay					45 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.

Nobis Engineering, Inc. nobisengineering.com

Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

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 [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 +/-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	
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	7.87	-172.0	1.14	1000+	50 Ft
1325			No recovery in clay									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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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 : 9/25/11 Page _____ of _____ **Well ID :** VP-34
Field Personnel Josh Stewart
Well Depth as installed (ft.): _____ Purging Start Time : _____
Screen Length in ft. _____ Screen Depth in ft. _____ Measured Well Depth (ft.): _____
Depth to GW (ft.): _____ From: _____ Parameter Stabilization: (Circle) Yes / No
Pump/Tubing Intake set (ft.): _____ From: _____ Two Hour Time Limit Reached ? (Circle) Yes / No
Sample Designation _____ Total Volume Purged, Including Drawdown (gallons): _____
Sample Time _____ Time at Purge Completion: _____
Signature: Josh
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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1215						19.05	288	6.95	-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 FM Set
1400						17.97	3846	6.20	7.6	1.08	46.9	30 ft
1435						18.11	2631	6.93	-145.1	1.23	432	35 ft
1515						17.92	540	7.55	-131.7	1.72	62.3	40 ft
1543						No Recovery		in	Clay			45 ft Pull up 2.5 ft
1555						No Recovery		in	Clay			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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Low-Flow Field Log

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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
Well Depth as installed (ft.): _____ Purging Start Time : _____
Screen Length in ft. _____ Screen Depth in ft. _____ Measured Well Depth (ft.): _____
Depth to GW (ft.): _____ From: _____ Parameter Stabilization: (Circle) Yes / No
Pump/Tubing Intake set (ft.): _____ From: _____ Two Hour Time Limit Reached ? (Circle) Yes / No
Sample Designation _____ Total Volume Purged, Including Drawdown (gallons): _____
Sample Time _____ Time at Purge Completion: _____
Signature: Josh
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
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	
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~~
1030						15.56	507	7.85	-156.7	0.98	1000+	35FT Clay observed on end of Screen 6"
1100					NO	Recovery	in	Clay				40FT

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

Rev.: 2

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

Date : 9/22/11 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 S

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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
0800						16.32	1081	6.47	-72.5	2.24	379	15 Ft
0830					15.57	~~1084~~	890	6.91	-142.6	0.89	1000+	20 Ft
0855						15.25	912	6.89	-120.8	1.19	1000+	25 Ft full Set
0930						14.83	738	7.05	-143.8	0.55	1000+	30 Ft
1010						14.76	608	7.24	-141.2	1.09	1000+	35 Ft
1035				No Recovery in clay								40 Ft Pull up to 38 Ft
1045						15.00	442	7.82	-81.2	1.68	1000+	38 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	Rev.: 2
Prepared by:	S. Bonis
Approved by:	M. Summerlin

Date : 8/23/11 Page _____ of _____ **Well ID :** VP-32
Field Personnel Josh Stevens 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 Stevens
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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1250						15.51	632	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 Pull Set metal/Diox MS/MSD
1445						14.32	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 set (ft.): _____ From: _____ Total Volume Purged, Including Drawdown (gallons): _____

Sample Designation _____ Time at Purge Completion: _____

Sample Time _____ Signature: Josh S

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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
0800						14.93	562	6.98	-34.6	2.12	232	15Ft
0830						13.55	336	7.18	-118.2	1.07	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 Sey 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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Date: Mar. 2010

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

Date : 8/19/11 Page _____ of _____ **Well ID :** VP-39

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
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 Pump Set
1020						16.14	538	7.85	-207.2	0.28	1000+	35 FT
1110						15.82	282	8.20	-116.9	0.34	1000+	~~40 FT~~ 38 FT
				Clay at		38 FT		6.95				

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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Rev.: 2

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

Date : 8/24/11 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 [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 +/-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	
0815						13.55	1473	5.78	-24.2	~~5.05~~ 3.72	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	7.011	-116.7	0.55	1000+	30 ft
1020					NO	recovery	in	clay				35 ft Pull up 25 ft
1030					NO	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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Date: Mar. 2010

Rev.: 2

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

Date : 8/15/11 Page 1 of 1 **Well ID :** VP-41

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

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
HHMM	sec. / sec. or setting	ml/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 lab
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	-197.9	0.83	1000+	~~45 Ft~~ 40 Ft
1525				No	Recovery			in Clay				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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Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 8/16/11 Page _____ of _____ **Well ID :** VP-42

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

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
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	4.34	231	20 Ft
1440						13.79	984	7.69	-164.5	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					~	50%	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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Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 8/16/11 Page _____ of _____ **Well ID :** VP-43

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: [illegible]

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
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 drill 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 bgs

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 : 8/26/11 Page _____ of _____ **Well ID :** VP-44
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 [signature]
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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
0800						15.19	283	6.28	22.1	4.52	1000+	15ft Voc MS/MSD
0825						14.26	150	6.34	55.1	6.23	515	20ft
0845						14.21	606	6.86	-82.4	1.81	1000+	25ft
0910						13.90	690	7.70	-148.9	0.62	1000+	30 ft
0935						14.41	208	8.12	-92.7	0.98	1000+	35ft
1000						No Recovery		in clay				40ft Pull up 2.5ft
1005						No Recovery		in clay				32.5ft

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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Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010

Rev.: 2

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

Date : 8/17/11 Page _____ of _____ **Well ID :** VP-45

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

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 DUP (JS)
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	-89.2	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		No Sample			No Recovery			in Clay				35 Ft
												~~40 Ft~~ (JS)
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

SOP No: SA-003
Date: Mar. 2010

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. _____ 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 C

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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1125						16.85	786	6.73	-0.4	3.74	1000+	15 Ft
1150						15.40	1945	6.35	-49.9	2.05	220	20 Ft
1230						14.28	2276	6.74	-88.5	1.76	340	25 Ft ~~Full Set~~ JS
1330						15.18	1997	7.14	-63.3	1.46	124	30 Ft
1400						15.09	571	7.08	-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+	~~10 Ft Full Set~~ JS 45 Ft
		Clay	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.

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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-48
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
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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
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

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 [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) _____
Multimeter model and serial number YSI 600 XL M 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	
1340						19.38	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						Not recovery	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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Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 9/26/11 Page _____ of _____ **Well ID :** VP-50
Field Personnel JOSL Stewart
Well Depth as installed (ft.): _____ Purging Start Time : _____
Screen Length in ft. _____ Screen Depth in ft. _____ Measured Well Depth (ft.): _____
Depth to GW (ft.): _____ From: _____ Parameter Stabilization: (Circle) Yes / No
Pump/Tubing Intake set (ft.): _____ From: _____ Two Hour Time Limit Reached ? (Circle) Yes / No
Sample Designation _____ Total Volume Purged, Including Drawdown (gallons): _____
Sample Time _____ Time at Purge Completion: _____
Signature: JOSL
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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1130						14.80	699	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	381	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.
NR = No Reading
Use the back of the log to record additional observations and descriptions.

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Prepared by: S. Bonis
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Date : 9/21/11 Page _____ of _____ **Well ID :** VP-31
Field Personnel Josh Stewart
Well Depth as installed (ft.): _____ Purging Start Time : _____
Screen Length in ft. _____ Screen Depth in ft. _____ Measured Well Depth (ft.): _____
Depth to GW (ft.): _____ From: _____ Parameter Stabilization: (Circle) Yes / No
Pump/Tubing Intake set (ft.): _____ From: _____ Two Hour Time Limit Reached ? (Circle) Yes / No
Sample Designation _____ Total Volume Purged, Including Drawdown (gallons): _____
Sample Time _____ Time at Purge Completion: _____
Signature: Josh S
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
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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Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 8/30/11 Page _____ of _____ **Well ID :** VP-52
Field Personnel Josh Stevens 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
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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
1510						16.72	303	6.99	-23.9	4.03	169	15 Ft
1540						16.71	546	6.84	-24.8	3.26	432	20 Ft
1600						15.96	1160	6.68	-44.5	1.86	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	1000+	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 S
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
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	
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 full set
1300						16.36	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	960	40 ft
1500					No ~~recovery~~		Sample		recovery too	silty		45 ft pull up to 42.5
					estimate		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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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 set (ft.): _____ From: _____
Total Volume Purged, Including Drawdown (gallons): _____
Sample Designation _____
Time at Purge Completion: _____
Sample Time _____
Signature: Josh [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 +/-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	
1145						16.12	782	6.74	60.2	3.52	541	15Ft
1220						15.32	543	5.81	53.5	1.52	938	20Ft
1240						15.99	676	5.97	60.8	1.36	618	~~25~~ 25Ft
1330						15.66	1131	6.54	-136.2	1.03	1000+	30Ft Full Set VOC DUP
1410						15.76	965	7.00	-182.1	0.64	1000+	35Ft
1450						15.42	281	7.65	-127.2	1.07	1000+	40Ft
1520				in Clay		NO recovery						45Ft Pulled UP 2Ft
1530						No recovery		in Clay				43Ft

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 : 10/4/11 Page _____ of _____ **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 S

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
HHMM	sec. / sec. or setting	ml/min	ft.	ft.	ft.	°C	µS/cm		mV	mg/L	NTU	
855						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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Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 10/4/11 Page _____ of _____ **Well ID :** VP-56
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 YSI 600 XLM 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	
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	43.7	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.

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

Date : 10/5/11 Page _____ of _____ **Well ID :** VP-57
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 S
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
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	4.86	919	10 ft
0910						13.62	752	6.60	18.3	2.64	720	15 ft
0930						12.16	691	6.52	44.9	5.22	392	20 ft + dup
1000						11.95	691	7.10	-22.3	2.82	978	25 ft
1020						11.42	572	7.64	-119.8	2.16	621	30 ft
1055						11.64	302	7.89	-108.7	1.52	260	35 ft
1135						12.34	222	8.03	-121.6	1.18	1000+	40 ft
1210					No	Recovery	in	Clay				45 ft Soft 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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Low-Flow Field Log

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Date: Mar. 2010 | Rev.: 2
Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 10/5/11 Page _____ of _____ **Well ID :** UP-58
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 [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 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	
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	504	20 ft MS/MSD
1425						13.34	690	6.66	-79.7	1.27	1000+	25 ft
1500						12.81	376	7.04	-129.3	0.56	1000+	30 ft Soft
1535						No Recovery		in Clay				35 ft Pull 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.

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9D

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 : 6/5/2012 Page 1 of 1 **Well ID :** MW-09D
Field Personnel AU Belleville Purging Start Time : ~~0900~~ 0910
Well Depth as installed (ft.): 37.6 Measured Well Depth (ft.): NM
Screen Length in ft. 5 Screen Depth in ft. 34.6-39.6 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 9.97 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): Pre-set From: Dedicated Tubing Total Volume Purged, Including Drawdown (gallons): ~3 gal
Sample Designation MW-09D-060201 Time at Purge Completion: 1050
Sample Time 1025 Signature: [illegible]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder Pump
Multimeter model and serial number YSI 600XLM SN# NO 8978 (PID) Turbidity meter model and serial number LaMotte 2020 PINE #2032
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	
0920	5 / 10	125	10.15	0.18	0.18	11.24	0.515	7.02	178.6	3.31	76.5	
0925	5 / 10	125	10.15	0.00	0.18	10.97	0.514	7.12	119.3	2.84	143	
0930	5 / 10	125	10.13	-0.02	0.16	10.98	0.520	7.19	54.3	2.67	162	
0935	5 / 10	125	10.12	-0.01	0.15	10.98	0527	7.26	15.9	2.37	230	
0940	5 / 10	110	10.16	0.04	0.19	10.94	0.532	7.32	-18.7	2.26	230	
0945	5 / 10	110	10.15	-0.01	0.18	10.93	0.532	7.37	-52.9	2.20	248	
0950	5 / 10	110	10.15	0.00	0.18	10.95	0.531	7.40	-65.3	2.26	254	
0955	5 / 10	125	10.15	0.00	0.18	10.89	0.530	7.43	-80.2	2.26	250	
1000	5 / 10	125	10.15	0.00	0.18	10.92	0529	7.45	-89.6	2.30	269	
1005	5 / 10	125	10.15	0.00	0.18	10.91	0.526	7.46	-95.1	2.34	279	
1010	5 / 10	125	10.15	0.00	0.18	10.97	0.524	7.48	-101.0	2.43	293	
1015	5 / 10	125	10.15	0.00	0.18	11.16	0.523	7.50	-104.5	~~0.24~~ 2.43	303	

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	Rev.: 2
Prepared by:	S. Bonis
Approved by:	M. Summerlin

Date : 6/5/12 Page 1 of 2 **Well ID :** MW-9M
Field Personnel C. Rousseau Purging Start Time : 0905
Well Depth as installed (ft.): 29.5 Measured Well Depth (ft.):
Screen Length in ft. 5 Screen Depth in ft. 29.5 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 9.87 From: 29.5 Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 27 From: Total Volume Purged, Including Drawdown (gallons): ±4-5 gals
Sample Designation MW-09M-0612A Time at Purge Completion: 1125
Sample Time 1120 Signature:
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) ~~YSI 650MDS / 600XLP~~ Bladder
Multimeter model and serial number YSI 650MDS / 600XL Turbidity meter model and serial number LaMotte 2020
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	
0905	5/10	Start Purge, Adjust flow, Fill flow-Cell										
1005	5/10	Missing gasket flow cell, located on floor building, Resume										
1010	5/10	100	10.09	0.22	0.22	11.45	1.667	6.71	19.8	1.31	55	
1015	5/10	125	10.09	0.00	0.22	11.14	1.683	6.72	5.8	0.94	50	
1020	5/10	125	10.09	0.00	0.22	11.10	1.697	6.71	-1.7	0.67	50	
1025	5/10	125	10.09	0.00	0.22	11.21	1.717	6.73	-14.2	0.47	50	
1030	5/10	125	10.09	0.00	0.22	11.30	1.718	6.73	-15.3	0.45	50	
1035	5/10	125	10.09	0.00	0.22	11.43	1.731	6.76	-25.3	0.38	45	
1040	5/10	125	10.09	0.00	0.22	11.40	1.730	6.76	-26.5	0.37	45	
1045	5/10	125	10.09	0.00	0.22	11.30	1.734	6.76	-28.9	0.34	40	
1050	5/10	125	10.09	0.00	0.22	11.36	1.735	6.77	-30.4	0.33	38	
1055	5/10	125	10.09	0.00	0.22	11.80	1.736	6.78	-32.8	0.34	39	

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 | Attachment B, Page 1 of 1
Date: Mar. 2010 | Rev.: 2
Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 6/5/12 Page 2 of 2 **Well ID :** MW-9M
Field Personnel C. Rousseau Purging Start Time : 0905
Well Depth as installed (ft.): 28.5 Measured Well Depth (ft.): _____
Screen Length in ft. 5' Screen Depth in ft. 24.5 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 9.87 From: 28.5 Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): _____ From: _____ Total Volume Purged, Including Drawdown (gallons): ±4.5 gals
Sample Designation MW-9M-0612 + MS/MSD Time at Purge Completion: 1125
Sample Time 1120 Signature: [illegible]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) bladder
Multimeter model and serial number YSI 650 MDS/600XL Turbidity meter model and serial number LaMotte 2020
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	
1100	5 / 10	125	10.09	0.00	0.22	11.53	1.741	6.79	-36.6	0.30	36	
1105	5 / 10	125	10.09	0.00	0.22	11.54	1.742	6.79	-38.9	0.28	33	
1110	5 / 10	125	10.09	0.00	0.22	11.53	1.742	6.79	-39.0	0.29	32	
1115	5 / 10	125	10.09	0.00	0.22	11.54	1.743	6.80	-40.2	0.27	33	
1120		Sample Collected		QC	Sample collected				MS/MSD		VOC,	Metals, Ferrous Iron
		and Field	Screening		EPA Mobile Lab							

[illegible] 6/5/12

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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PID READING: 0.0 ppm

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Date: Mar. 2010 | Rev.: 2
Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 6/5/12 Page 1 of 1 **Well ID :** BR-1
Field Personnel K. Asmussen Purging Start Time : 0910
Well Depth as installed (ft.): 123 Measured Well Depth (ft.): 22.81
Screen Length in ft. 10' Screen Depth in ft. 113 Parameter Stabilization: (Circle) Yes / ~~No~~
Depth to GW (ft.): 18.20 From: 123 Two Hour Time Limit Reached ? (Circle) Yes / ~~No~~
Pump/Tubing Intake set (ft.): From: Total Volume Purged, Including Drawdown (gallons): 3-gal.
Sample Designation BR-1-0612A Time at Purge Completion: 1005
Sample Time 04/5/5999 AC Signature
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Peristaltic
Multimeter model and serial number 600 XL/ 04/5/5999 AC Turbidity meter model and serial number Lamotte 2020
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~~ mS/cm		mV	mg/L	NTU	
0910		100	22.81'	—	—	12.15	5.139	12.54	4.4	1.76	2.09	
0915		100	24.75'	1.94'	1.94'	11.98	5.168	12.57	-12.2	1.73	0.99	
0920		100	24.96'	0.21'	2.15'	12.23	5.187	12.57	-19.3	1.64	1.27	
0925		100	25.71	0.95'	3.10'	12.46	5.208	12.55	-25.6	1.59	1.09	
0930		100	26.13'	0.42	3.52'	12.46	5.216	12.57	-27.2	1.53	1.03	
0935		100	26.75	0.62	4.14	12.67	5.238	12.57	-31.7	1.55	0.98	
0940		100	27.12	0.37	4.51	13.17	5.261	12.57	-38.5	1.55	1.41	
0945		100	27.23	0.11	4.62	13.25	5.264	12.57	-38.6	1.99	1.57	
0950		100	27.35	0.12	4.74	13.48	5.279	12.57	-72.5	1.70	1.39	
0955		100	27.95	0.20	4.94	13.71	5.290	12.59	-63.2	2.07	1.34	
1000		95	31.17			14.42	5.353	12.59	-63.0	3.04	1.37	
1005		95	32.09			14.93	5.397	12.56	-56.6	3.39	1.20	Max drawdown

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.

shut off and collected tomorrow morning

* Screen depth and tubing intake doesn't seem accurate. Notes state 32' is intake table states otherwise.

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Low-Flow Field Log

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

Date : 6/5/12 Page 1 of 2
Field Personnel C. Rossman
Well Depth as installed (ft.): 35
Screen Length in ft. 5' Screen Depth in ft. 30.0'
Depth to GW (ft.): 3.62 From: 35.0'
Pump/Tubing Intake set (ft.): From:
Sample Designation MW-100-0612 + DUP01
Sample Time 1455 + 1500 for DUP01
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) YSI 650 MDS/600XL bladder pump.
Multimeter model and serial number 07F100597 Turbidity meter model and serial number LaMotte 2020

Well ID : MW-100
Purging Start Time : 1315
Measured Well Depth (ft.):
Parameter Stabilization: (Circle) Yes / No
Two Hour Time Limit Reached ? (Circle) Yes / No
Total Volume Purged, Including Drawdown (gallons): ±4-5 gal
Time at Purge Completion: 1455 + 1500
Signature:

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	
1315	5/10	Start Purge, Adjust flow, fill cell										
1320	5/10	100	4.20	0.58	0.58	15.00	0.361	7.56	97.9	7.15	380	Cloudy, fines suspended.
1325	5/10	100	4.20	0.00	0.58	13.62	0.577	7.36	110.3	3.19	270	
1330	5/10	100	4.20	0.00	0.58	13.16	0.574	7.29	115.6	2.37	260	
1340	5/10	100	4.20	0.00	0.58	13.50	0.578	7.33	109.3	1.43	280	
1350	5/10	100	4.20	0.00	0.58	13.01	0.581	7.38	101.7	1.10	210	
1400	5/10	100	4.20	0.00	0.58	12.89	0.581	7.43	88.7	0.88	260	
1410	5/10	100	4.20	0.00	0.58	13.16	0.582	7.43	77.0	0.54	290	
1415	5/10	100	4.20	0.00	0.58	12.89	0.582	7.43	76.4	0.49	280	
1420	5/10	100	4.20	0.00	0.58	12.83	0.583	7.42	76.1	0.44	320	
1425	5/10	100	4.20	0.00	0.58	13.16	0.581	7.43	73.5	0.40	300	
1430	5/10	100	4.20	0.00	0.58	13.38	0.453	7.42	72.7	0.35	370	

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.

(1)

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Low-Flow Field Log

SOP No: SA-003
Date: Mar. 2010
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Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 6/5/12 Page 2 of 2 **Well ID :** MW-10
Field Personnel C. Rousseau Purging Start Time : 1315
Well Depth as installed (ft.): 35' Measured Well Depth (ft.):
Screen Length in ft. 5' Screen Depth in ft. 30.0' Parameter Stabilization: (Circle) ~~Yes~~ / No
Depth to GW (ft.): 3.62 From: 35.0' Two Hour Time Limit Reached ? (Circle) Yes (No)
Pump/Tubing Intake set (ft.): From: Total Volume Purged, Including Drawdown (gallons): ±4-5gal
Sample Designation MW-10-0612+DUP01 Time at Purge Completion: 1455 + 1500
Sample Time 1455 + 1500 for DUP01 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder
Multimeter model and serial number ~~YSI~~ 650MDS/600XL Turbidity meter model and serial number LaMotte 2020
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	
1435	5/10	100	4.20	0.00	0.58	13.16	0.582	7.41	74.5	0.30	350	
1440	5/10	100	4.20	0.00	0.58	13.07	0.581	7.41	74.7	0.28	360	
1445	5/10	100	4.20	0.00	0.58	13.09	0.580	7.42	73.1	0.26	370	
1450	5/10	100	4.20	0.00	0.58	13.07	0.582	7.43	73.8	0.27	350	
1455		Sample Collected VOC, Metals, Ferrous, Mobile lab Screen										
1500		DUP01 Collected VOC, Metals, Ferrous, Mobile lab Screen.										
1505												
1510												
1515												

[signature] 6/5/12

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 : 6/5/12 Page 1 of 1
Field Personnel E. Armundson
Well Depth as installed (ft.): 34.3'
Screen Length in ft. 5 Screen Depth in ft. 29.3
Depth to GW (ft.): 6.56 From: 29.3
Pump/Tubing Intake set (ft.): From:
Sample Designation MW-07M-0612A
Sample Time 1705

Well ID : MW-07M
Purging Start Time : 1555
Measured Well Depth (ft.): 34.3
Parameter Stabilization: (Circle) Yes / No
Two Hour Time Limit Reached ? (Circle) Yes / No
Total Volume Purged, Including Drawdown (gallons): 5.0
Time at Purge Completion: 1700
Signature:

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) ~~Geotech Pro~~ Bladder MP50 QED
Multimeter model and serial number 600 XL, 04575599 AC Turbidity meter model and serial number Lamotte 2020
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	
1600	5.0 / 7.0	300	7.0	—	—	11.70	0.597	7.59	0.0	1.04	250	
1605	5.0 / 7.0	300	6.58	0.22	0.22	12.00	0.662	7.47	-70.3	0.39	360	
1610	5.0 / 7.0	300	7.00	—	—	11.25	0.720	7.45	-93.8	0.27	300	
1615	5.0 / 7.0	300	7.00	—	—	11.18	0.740	7.48	114.2	0.22	360	
1620	5.0 / 7.0	300	7.00	—	—	11.41	0.761	7.48	121.0	0.20	450	
1625	5.0 / 7.0	300	7.00	—	—	11.30	0.782	7.48	128.6	0.16	450	
1630	5.0 / 7.0	300	7.00	—	—	11.30	0.783	7.52	138.1	0.14	450	
1635	5.0 / 7.0	300	7.00	—	—	11.30	0.782	7.51	138.2	0.14	450	
1640	5.0 / 7.0	300	7.00	—	—	11.30	0.783	7.52	138.9	0.14	450	
1645	5.0 / 7.0	300	7.00	—	—	11.28	0.781	7.50	139.0	0.14	450	
1650	5.0 / 7.0	300	7.00	—	—	11.20	0.783	7.52	138.7	0.13	450	
1655	5.0 / 7.0	300	7.00	—	—	11.22	0.783	7.51	138.8	0.14	451	

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 | Attachment B, Page 1 of 1
Date: Mar. 2010 | Rev.: 2
Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 6/5/2012 Page 1 of 2 **Well ID :** MW-05D2
Field Personnel Ali Bellerive Purging Start Time : 1330
Well Depth as installed (ft.): 44.4 Measured Well Depth (ft.): NM
Screen Length in ft. 5' Screen Depth in ft. 39.4-44.4' Parameter Stabilization: (Circle) Yes / No - Turbidity
Depth to GW (ft.): 5.25 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): Pre-set From: Dedicated Tubing Total Volume Purged, Including Drawdown (gallons): ~4
Sample Designation MW-05D2-0612A Time at Purge Completion: 1610
Sample Time 1540 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder Pump
Multimeter model and serial number YSI 600XLM (Pine # 8978) Turbidity meter model and serial number: Lamotte 2020 # 3165-1602
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.) Initial well head PID = 52.4 Ambient air screening with PID = ND (during sampling, above purge water container) No odor noted.

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	
1340	5/10	100	5.85	0.60	0.60	12.23	0.432	7.21	-39.5	3.36	297	Pressure = 30 PSI
1345	5/10	100	6.10	0.25	0.85	11.97	0.437	7.20	-45.3	3.16	404	
1350	5/10	100	6.15	0.30	0.90	11.86	0.444	7.28	-57.2	3.12	640	
1400	5/10	100	6.10	-0.05	0.85	12.15	0.457	7.43	-8.4	2.69	860	
1405	5/10	100	6.10	0.00	0.85	12.15	0.466	7.49	-99.2	1.73	891	
1410	5/10	100	6.12	0.02	0.87	12.14	0.466	7.50	-100.5	1.69	867	
1415	5/10	100	6.11	-0.01	0.86	12.01	0.467	7.52	-106.6	1.44	1063	
1425	5/10	100	6.10	-0.01	0.85	11.96	0.468	7.58	-120.9	0.92	—	Turbidity over range (ER2)
1430	5/10	100	6.10	0.00	0.85	11.99	0.470	7.60	-127.8	0.75	—	Turbidity over range (ER2)
1435	5/10	100	6.10	0.00	0.85	12.01	0.471	7.61	-131.9	0.68	—	Turbidity over range (ER2)
6.10 1440	5/10	100	6.10	0.00	0.85	12.14	0.471	7.63	-135.8	0.64	—	Turbidity over range (ER2)
6.10 1445	5/10	100	6.10	0.00	0.85	12.01	0.472	7.66	-146.4	0.49	—	Turbidity over range (ER2)

Notes: All depths in feet below top of PVC unless specified.
NR = No Reading NM = Not Measured
Use the back of the log to record additional observations and descriptions.

Changed turbidity meter @ 1447 — Error 3
New Meter = Pine # 2032

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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 : 6/5/12 Page 2 of 2 **Well ID :** MW-05D2
Field Personnel Ali Belleville Purging Start Time : 1330
Well Depth as installed (ft.): 44.4 Measured Well Depth (ft.): NM
Screen Length in ft. 5 Screen Depth in ft. 39.4-44.4 Parameter Stabilization: (Circle) Yes / No TURBIDITY
Depth to GW (ft.): 5.25 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): Pre-Set/Measured from: Dedicated Tubing Total Volume Purged, Including Drawdown (gallons): ~4
Sample Designation MW-05D2-0612A Time at Purge Completion: 1610
Sample Time 1540 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder Pump
Multimeter model and serial number YSI 600XLM 8978 Turbidity meter model and serial number Lamotte 2020 #3165-1602
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	
1450	5/10	100	6.10	0.00	0.85	11.95	0.472	7.67	-151.3	0.40	—	Turbidity over range (ERROR 2)
1505	5/10	100	6.10	0.00	0.85	12.01	0.474	7.70	-159.3	0.34	—	Turbidity over range (Er2)
1510	5/10	100	6.10	0.00	0.85	12.06	0.474	7.71	-161.2	0.33	—	Turbidity over range (ER2)
1515	5/10	100	6.10	0.00	0.85	11.92	0.475	7.72	-163.3	0.32	—	Turbidity over range (Er. 2)
1520	5/10	100	6.10	0.00	0.85	11.83	0.475	7.73	-165.4	0.66	—	Turbidity over range (Er2)
1530	5/10	100	6.10	0.00	0.85	11.80	0.475	7.73	-166.8	0.64	—	Turbidity over range (Er2)
1535	5/10	100	6.10	0.00	0.85	11.93	0.475	7.74	-166.7	0.61	—	Turbidity over range (Er2)

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 | Attachment B, Page 1 of 1
Date: Mar. 2010 | Rev.: 2
Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 6/6/12 Page 1 of 1 **Well ID :** MW-06 M
Field Personnel ~~MW-06~~ ALLESHA BELLEVILLE Purging Start Time: 0830 (initial) ~~1000~~ 0900
Well Depth as installed (ft.): 28.9 Measured Well Depth (ft.): NM
Screen Length in ft. ~~2600~~ 5 Screen Depth in ft. 23.9'-28.9' Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 5.63' From: Top of PVC - Blk mark Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): Pre-Measured From: Dedicated Tubing Total Volume Purged, Including Drawdown (gallons): ~3.5
Sample Designation MW-06M-0612A Time at Purge Completion: 1010
Sample Time 0945 Signature:
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder Pump
Multimeter model and serial number YSI 6000 XLM #8978 Turbidity meter model and serial number Lamotte 2020 #2406-1501
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.) Initial PID reading 45.4 ppmv. Upon initial pump startup, water backwashing. Pulled pump & checked assembly - assembly good. ~~Got all new bladder pump kit~~ O-ring Needed replacement. re-start @ 0900

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	
0915	5/10	190	5.95	0.32	0.32	11.46	1.376	7.01	-112.0	0.48	78.9	
0920	5/10	190	5.95	0.00	0.32	11.49	1.383	7.03	-113.2	0.44	73.2	
0925	5/10	190	5.95	0.00	0.32	11.50	1.403	7.04	-115.1	0.44	74.2	
0930	5/10	190	5.95	0.00	0.32	11.54	1.410	7.05	-116.6	0.49	69.8	
0935	5/10	190	5.95	0.00	0.32	11.57	1.427	7.06	-120.5	0.38	66.5	
0940	5/10	190	5.95	0.00	0.32	11.64	1.433	7.06	-122.5	0.45	68.2	

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.
NM = Not Measured

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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 : 6/6/12 Page 1 of 1
Field Personnel Ali Belbarile
Well Depth as installed (ft.): 33.5
Screen Length in ft. ~~10~~ 5' Screen Depth in ft. 28.5-33.5
Depth to GW (ft.): 5.35 From: PVC
Pump/Tubing Intake set (ft.): Are determined From: dedicated tubing in well.
Sample Designation MW-05D-0612A
Sample Time 1515
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments)
Multimeter model and serial number YSI 600XLM #8978 Turbidity meter model and serial number Lamotte ~~2020~~ 2020 #2032
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.) Initial PID when opened well (removed plug) = 107ppmv

Well ID : MW-5D
Purging Start Time : ~~225~~ 1425
Measured Well Depth (ft.): NM
Parameter Stabilization: (Circle) Yes / No
Two Hour Time Limit Reached ? (Circle) Yes / No
Total Volume Purged, Including Drawdown (gallons):
Time at Purge Completion: 16
Signature:

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	
1440	5/10	125	5.55	0.20	0.20	12.40	1.105	6.90	-96.7	0.96	312	
1450	5/10	125	5.55	~~0.00~~	0.20	12.03	1.106	6.95	-113.7	0.52	347	
1455	5/10	125	5.60	0.05	0.25	11.94	1.109	7.01	-124.8	0.35	405	
1500	5/10	125	5.60	0.00	0.25	11.91	1.110	7.03	-128.7	0.34	435	
1505	5/10	125	5.60	0.00	0.25	11.93	1.109	7.04	-132.5	0.29	424	
1510	5/10	125	5.60	0.00	0.25	11.99	1.110	7.05	-134.3	0.26	399	

Draw down = 0.0

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 | Attachment B, Page 1 of 1
Date: Mar. 2010 | Rev.: 2
Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 6/6/12 Page 1 of 1 **Well ID :** MW-6D
Field Personnel Aiesha Bellevill Purging Start Time : 1135
Well Depth as installed (ft.): 37.9 Measured Well Depth (ft.): NM
Screen Length in ft. 5' Screen Depth in ft. 32.9-37.9 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 5.55 From: PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): Pre-determined From: dedicated tubing Total Volume Purged, Including Drawdown (gallons): ~2.5
6.03 Sample Designation MW-06D-061207 Time at Purge Completion: 1255
Sample Time 1225 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Pneuco Bladder Pumps
Multimeter model and serial number YSI 600XLM #8978 Turbidity meter model and serial number Lamotte 2020 Pine #2032
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.) initial wellhead PID reading = 210 ppmv

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	
1150	5/10	150	6.10			11.89	0.655	7.31	-103.2	0.44	222	
1155	5/10	150	6.05			11.87	0.678	7.35	-116.5	0.38	229	
1200	5/10	150	6.05			11.91	0.695	7.41	-129.6	0.32	218	
1205	5/10	150	6.05			11.92	0.699	7.43	-134.2	0.29	254	
1210	5/10	140	6.05			11.89	0.706	7.45	-139.1	0.28	283	
1215	5/10	125	6.05			11.89	0.709	7.47	-142.5	0.29	296	
1220	5/10	125	6.05			11.88	0.712	7.49	-147.3	0.24	292	

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	Attachment B, Page 1 of 1
Date: Mar. 2010	Rev.: 2
Prepared by:	S. Bonis
Approved by:	M. Summerlin

Date : 6/6/12 Page 1 of 1 **Well ID :** MW-04D
Field Personnel K. Arnundson Purging Start Time : 1200
Well Depth as installed (ft.): 39.5 Measured Well Depth (ft.): 32.5
Screen Length in ft. 5 Screen Depth in ft. 34.5 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 4.05 From: 39.5 Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 32 From: Total Volume Purged, Including Drawdown (gallons): 5 gal
Sample Designation MW-04D-061217 Time at Purge Completion: 1420
Sample Time 1350 Signature:
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Scotch Pro, 35 psi, 2564
Multimeter model and serial number 600 XL, 04515989 A Turbidity meter model and serial number Lamotte 2020
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	
1205	10/5	100	4.31	—	—	14.02	0.899	6.99	-79.4	7.0	148	
1210	10/5	100	4.31	—	—	12.48	0.903	6.99	-73.2	6.1	150	
1215	12/8	150	4.40	0.09	0.09	12.36	0.901	6.99	-73.1	5.3	156	
1220	12/8	150	4.40	0.09	0.09	12.07	0.909	7.09	-115.5	1.0	179	
1225	12/8	150	4.40	0.09	0.09	12.08	0.912	7.10	-120.9	0.51	175	
1230	12/8	150	4.40	0.09	0.09	12.06	0.909	7.17	-133.2	0.26	179	
1235	12/8	150	4.40	0.00	0.09	12.04	0.907	7.18	-136.5	0.26	178	
1240	12/8	150	4.40	0.00	0.09	12.00	0.910	7.20	-137.6	0.25	179	
1245	12/8	150	4.40	0.00	0.09	12.00	0.909	7.20	-138.6	0.25	179	

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	Attachment B, Page 1 of 1
Date: Mar. 2010	Rev.: 2
Prepared by:	S. Bonis
Approved by:	M. Summerlin

Date : 6/6/18 Page 1 of 1 **Well ID :** MW-115
Field Personnel C. Rousseau / Earl Samuelsson Purging Start Time : 1220
Well Depth as installed (ft.): 19.3 Measured Well Depth (ft.): 19.2
Screen Length in ft. 5 Screen Depth in ft. 14.3 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 7.12 From: 19.3 Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 16.9 From: Total Volume Purged, Including Drawdown (gallons): 4-gal.
Sample Designation MW-115-06124 Time at Purge Completion: 1515
Sample Time 1455 Signature:
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geotech Pro, 35 psi, 2864
Multimeter model and serial number YSI 650 MDS/600 XL Turbidity meter model and serial number LaMotte 2020
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	
1220		Start Purge, Adjust flow, fill cell, collect parameters										
1225	5 / 10	275	7.15	0.03	0.03	12.36	2.235	6.49	138.4	5.87	262	Purge Cloudy
1230	5 / 10	275	7.15	0.00	0.03	12.16	2.234	6.45	141.5	5.63	159	
1240	5 / 10	275	7.15	0.00	0.03	11.46	2.239	6.35	154.8			
												QED Malfunction
1415	12 / 8	275	7.15	0.00	0.03	10.98	2.277	6.62	143.1	5.17	69.9	changed to Geotech Pro
1420	12 / 8	275	7.15	0.00	0.03	10.64	2.248	6.60	148.8	5.01	18.7	2864
1425	12 / 8	275	7.15	0.00	0.03	10.67	2.243	6.60	167.6	4.93	10.42	
1430	12 / 8	275	7.15	0.00	0.03	10.68	2.241	6.60	168.2	4.94	4.31	
1435	12 / 8	275	7.15	0.00	0.03	10.66	2.239	6.60	169.1	4.95	3.11	
1440	12 / 8	275	7.15	0.00	0.03	10.66	2.239	6.60	168.9	4.93	4.16	
1445	12 / 8	275	7.15	0.00	0.03	10.66	2.238	6.60	169.3	4.94	3.99	

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 | Attachment B, Page 1 of 1
Date: Mar. 2010 | Rev.: 2
Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 6/6/12 Page 1 of 1 **Well ID :** MW-030
Field Personnel K. Armondson Purging Start Time : 1600
Well Depth as installed (ft.): 40.2 Measured Well Depth (ft.): 40.2
Screen Length in ft. 5' Screen Depth in ft. 35.2' Parameter Stabilization: (Circle) ~~Yes~~ / No
Depth to GW (ft.): 7.53' From: 40.2' Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 37.7' From: Total Volume Purged, Including Drawdown (gallons): 4-gal.
Sample Designation MW-030-0612A Time at Purge Completion: 1710
Sample Time 1650 Signature:
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geotech Pro 35 psi, 2869
Multimeter model and serial number YSI 600XL, 04515499 AC Turbidity meter model and serial number Lamotte 2020
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	
1600	10 / 8	250	7.70	—	—	11.52	0.546	7.23	-18.3	3.52	206	Cloudy Red water
1605	10 / 8	250	7.71	0.01	0.01	11.39	0.542	7.16	-50.2	2.93	177	
1610	10 / 8	250	7.71	0.00	0.01	11.15	0.544	7.13	-84.2	1.85	178	
1615	10 / 8	250	7.71	0.00	0.01	11.22	0.544	7.11	-86.7	2.24	161	
1620	10 / 8	250	7.71	0.00	0.01	11.29	0.542	7.10	-94.3	2.66	183	
1625	10 / 8	250	7.71	0.00	0.01	11.37	0.542	7.10	-93.5	2.64	179	
1630	10 / 8	250	7.71	0.00	0.01	11.34	0.542	7.10	-97.1	2.64	175	
1635	10 / 8	250	7.71	0.00	0.01	11.35	0.542	7.10	-95.3	2.64	176	
1640	10 / 8	250	7.71	0.00	0.01	11.34	0.542	7.10	-95.1	2.64	174	
1645	10 / 8	250	7.71	0.00	0.01	11.33	0.541	7.10	-95.6	2.64	176	

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 | Attachment B, Page 1 of 1
Date: Mar. 2010 | Rev.: 2
Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 6/7/12 Page 1 of
Field Personnel Katie Brandsson
Well Depth as installed (ft.): ~~35.7~~ At 35.5
Screen Length in ft. 5.0' Screen Depth in ft. 30.5'
Depth to GW (ft.): 7.17 From: 35.5'
Pump/Tubing Intake set (ft.): 35 From:
Sample Designation AS1-0402-0612A
Sample Time 0900

Well ID : AS1-0402
Purging Start Time : 0805
Measured Well Depth (ft.): 35.5
Parameter Stabilization: (Circle) Yes / No
Two Hour Time Limit Reached ? (Circle) Yes / No
Total Volume Purged, Including Drawdown (gallons): 3.0 3.1
Time at Purge Completion: 0910
Signature:

Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Peristaltic Pump
Multimeter model and serial number YSI 600XL, 04J15499 AC Turbidity meter model and serial number Lamotte 2020
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	
0810		125	7.50	—	—	10.64	0.686	7.19	-127.8	2.83	35	
0815		125	7.49	—	—	10.66	0.677	7.22	-148.4	2.32	3.7	
0820		125	7.49	—	—	10.67	0.665	7.29	-135.5	1.64	5.8	
0825		125	7.49	—	—	10.60	0.661	7.35	-131.7	0.57	4.8	
0830		125	7.49	—	—	10.58	0.661	7.41	-131.9	0.56	3.6	
0835		125	7.49	—	—	10.56	0.661	7.48	-131.5	0.55	2.3	
0840		125	7.49	—	—	10.58	0.668	7.49	-130.1	0.70	1.1	
0845		125	7.49	—	—	10.55	0.665	7.49	-130.1	0.70	1.3	
0850		125	7.49	—	—	10.58	0.669	7.49	-131.1	0.70	1.6	
0855		125	7.49	—	—	10.55	0.664	7.49	-134.4	0.70	1.1	

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 | Attachment B, Page 1 of 1
Date: Mar. 2010 | Rev.: 2
Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 6/7/12 Page 1 of 1 **Well ID :** MW-01D
Field Personnel L. Strandberg Purging Start Time : 1005
Well Depth as installed (ft.): 39.4 Measured Well Depth (ft.): 39.1'
Screen Length in ft. 5' Screen Depth in ft. 34.4 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 2.90' From: 34.4 Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 36.9' From: Total Volume Purged, Including Drawdown (gallons): 4.0 gal
Sample Designation MW-01D-061214 Time at Purge Completion: 1115
Sample Time 1055 Signature:
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Geotech Pro, 35 PSI, 2564
Multimeter model and serial number YSI 600 XL, 05151999 AC Turbidity meter model and serial number LaMotte 2020
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	
1010	10 / 8	200	3.15	—	—	12.48	0.845	6.96	-79.8	3.20	95	
1015	10 / 8	200	3.20	0.05	0.05	11.98	0.968	7.14	-132.6	0.52	130	
1020	10 / 8	200	3.20	0.00	0.05	12.03	0.965	7.15	-135.1	0.42	135	
1025	10 / 8	200	3.20	0.00	0.05	11.93	0.961	7.16	-135.6	0.33	131	
1030	10 / 8	200	3.20	0.00	0.05	11.92	0.960	7.17	-139.0	0.28	132	
1035	10 / 8	200	3.20	0.00	0.05	11.95	0.958	7.17	-140.1	0.26	137	
1040	10 / 8	200	3.20	0.00	0.05	11.95	0.955	7.17	-143.6	0.25	135	
1045	10 / 8	200	3.20	0.00	0.05	11.96	0.952	7.18	-143.7	0.25	134	
1050	10 / 8	200	3.20	0.00	0.05	11.98	0.954	7.17	-143.7	0.26	136	

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 | Attachment B, Page 1 of 1
Date: Mar. 2010 | Rev.: 2
Prepared by: S. Bonis
Approved by: M. Summerlin

Date : 6/7/2012 Page 1 of 1
Field Personnel Ali Belleville
Well Depth as installed (ft.): 19
Screen Length in ft. 5 Screen Depth in ft. 14-19
Depth to GW (ft.): 2.11 From: PVC
Pump/Tubing Intake set (ft.): 17.5' From: PVC
Sample Designation MW-08S-0612A
Sample Time 0920
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder Pump
Multimeter model and serial number YSI 600XLM #8978 Turbidity meter model and serial number LaMotte 2020 #2032
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.) PID = 38.8 ppmv

Well ID : MW-8S
Purging Start Time : 820
Measured Well Depth (ft.): NM
Parameter Stabilization: (Circle) Yes / No
Two Hour Time Limit Reached ? (Circle) Yes / No
Total Volume Purged, Including Drawdown (gallons): ~3 gal
Time at Purge Completion:
Signature: [signature]

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	
0840	5 / 10	175	2.15	0.04	0.04	10.80	0.750	5.66	202.0	0.61	18.3	
0845	5 / 10	175	2.15	0.00	0.04	10.78	0.750	5.67	201.6	0.59	12.2	
0850	5 / 10	175	2.20	0.05	0.09	10.76	0.750	5.69	200.1	0.55	10.82	
0855	5 / 10	175	2.20	0.00	0.09	10.66	0.747	5.72	200.0	0.48	9.48	
0900	5 / 10	175	2.20	0.00	0.09	10.67	0.745	5.72	200.1	0.47	8.50	
0905	5 / 10	175	2.20	0.00	0.09	10.61	0.739	5.73	200.2	0.44	9.43	
0910	5 / 10	150	2.15	-0.05	0.04	10.61	0.735	5.74	201.2	0.42	8.77	
0915	5 / 10	150	2.15	0.00	0.04	10.61	0.732	5.74	201.4	0.42	8.62	

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.

NM = Not Measured

PID nearby well MW-8M = 180 ppmv

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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 : 6/11/12 Page 1 of 2 **Well ID :** GS1-05D2
Field Personnel C. Rossman Purging Start Time : 1320
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.): 6.55 From: top PVC 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: 1413 14
Sample Time 1430 Signature: CTR
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Peristaltic
Multimeter model and serial number YSI 650MDS Turbidity meter model and serial number LaMotte 2020
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.) Sonde 600XL

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	
1320												
1325		200	7.10	0.55	0.55	11.12	0.920	7.29	-132.0	~~82.3~~	88.6	DO=0.82
1330		150	7.10	0.00	0.55	11.14	0.920	7.26	-131.0	~~81.3~~	9.91	DO=0.81
1335		150	7.10	0.00	0.55	11.22	0.915	7.26	-127.0	~~81.3~~	6.73	DO=0.81
1340		150	7.10	0.00	0.55	11.17	0.913	7.26	-123.3	~~79.3~~	5.85	DO=0.80
1345		150	7.10	0.00	0.55	11.15	0.881	7.28	-136.7	~~40.5~~	7.06	DO=0.80
1350		150	7.10	0.00	0.55	11.00	0.860	7.29	-130.3	~~34.5~~	5.04	DO=0.84
1355		150	7.10	0.00	0.55	11.04	0.857	7.29	-130.2	0.79	5.12	
1400		150	7.10	0.00	0.55	11.06	0.856	7.29	-130.3	0.74	5.30	
1405		150	7.10	0.00	0.55	11.06	0.853	7.29	-129.9	0.62	5.28	
1410		150	7.10	0.00	0.55	11.06	0.855	7.30	-128.3	0.65	5.33	
1415		150	7.10	0.00	0.55	11.05	0.856	7.30	-128.6	0.67	5.30	

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	Attachment B, Page 1 of 1
Date: Mar. 2010	Rev.: 2
Prepared by:	S. Bonis
Approved by:	M. Summerlin

Date : 6/6/12 Page 2 of 2 **Well ID :** AS1-OSD2
Field Personnel C. Rousseau Purging Start Time : 1320
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.): 6.55 From: Top PVC 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 1430 Signature: CR
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Peristaltic
Multimeter model and serial number YSI 650MDS Turbidity meter model and serial number LaMotte 2020
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.) Sonde 600XL

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	
1420		150	7.10	0.00	0.55	11.06	0.856	7.31	-127.8	0.66	5.35	
1425		150	7.10	0.00	0.55	11.05	0.855	7.30	-128.4	0.67	5.30	
1430		Sample Collected all analyses										

CR 6/6/12

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	Attachment B, Page 1 of 1
Date: Mar. 2010	Rev.: 2
Prepared by:	S. Bonis
Approved by:	M. Summerlin

Date : 6/6/12 Page 1 of 2 **Well ID :** MW-8M
Field Personnel C. Rousseau Purging Start Time : 0815
Well Depth as installed (ft.): 24' Measured Well Depth (ft.): _____
Screen Length in ft. 10 Screen Depth in ft. 14-24 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 2.11 From: Top PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 20' From: Top PVC Total Volume Purged, Including Drawdown (gallons): ±10 gals
Sample Designation MW-8M-0612A + ~~MS/MSD~~ Anions/Geochem Time at Purge Completion: _____
Sample Time _____ DUP02 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder
Multimeter model and serial number YSI 650 MDS 07E100597 Turbidity meter model and serial number LaMotte 2020 ~~12347~~ 03415
Notes: (initial wellhead PID/FID reading, deviations from SOP, etc.) Sonde 600XL 01F0657
Turbidity Meter 03415 cal to 1.0 NTU, unable to cal 10 NTU.

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	
0815		Start Purge, Adjust flow, fill Cell, Collect Parameter readings										
0825	5/10	275	2.25	0.14	0.14	10.88	0.569	6.02	72.6	0.86	17.1	Clear Purge H2O
0830	5/10	275	2.25	0.00	0.14	10.59	0.524	6.12	48.7	0.62	8.52	
0835	5/10	275	2.25	0.00	0.14	10.52	0.511	6.23	30.2	0.48	8.57	
0840	5/10	275	2.25	0.00	0.14	10.46	0.509	6.28	25.7	0.41	9.87	
0845	5/10	275	2.25	0.00	0.14	10.43	0.508	6.29	13.0	0.33	9.33	
0850	5/10	275	2.25	0.00	0.14	10.42	0.509	6.38	11.7	0.33	5.09	
0855	5/10	275	2.25	0.00	0.14	10.37	0.510	6.44	4.8	0.27	4.34	
0900	5/10	275	2.25	0.00	0.14	10.37	0.511	6.46	1.6	0.26	8.96	
0905	5/10	275	2.25	0.00	0.14	10.36	0.512	6.51	-3.6	0.23	12.5	
0910	5/10	275	2.25	0.00	0.14	10.33	0.512	6.53	-7.4	0.21	17.9	
0915	5/10	275	2.25	0.00	0.14	10.30	0.513	6.57	-13.0	0.18	18.6	

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.

① VOC, Metals, Ferrous, Field Screen + ~~MS/MSD~~ DUP02
② Anions + GeoChem

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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 : 6/6/12 Page 2 of 2 **Well ID :** MW-8M
Field Personnel C. Rousseau Purging Start Time : 0815
Well Depth as installed (ft.): 24' Measured Well Depth (ft.): _____
Screen Length in ft. 10 Screen Depth in ft. 14-24 Parameter Stabilization: (Circle) Yes / No
Depth to GW (ft.): 2.11 From: Top PVC Two Hour Time Limit Reached ? (Circle) Yes / No
Pump/Tubing Intake set (ft.): 20 From: Top PVC Total Volume Purged, Including Drawdown (gallons): 510 gal
Sample Designation MW-8M-0612A + MS/~~MSD~~ Anions/Geochem Time at Purge Completion: _____
Sample Time _____ DUP02 Signature: [signature]
Pump Type (include pressure, discharge, and recharge for bladder pump under pump setting and comments) Bladder
Multimeter model and serial number YSI 650 MDS 07 Turbidity meter model and serial number LaMotte 2020
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	
0920	5 / 10	MP50	overheating,	fan stop	working,	work	to resolve	issue				
0955	5 / 10	275	2.25	0.00	0.14	11.40	0.514	6.56	4.5	0.25	33.4	New MP50 Resume
1000	5 / 10	275	2.25	0.00	0.14	10.82	0.514	6.59	0.7	0.20	29.3	
1005	5 / 10	275	2.25	0.00	0.14	10.74	0.513	6.60	0.0	0.20	25.3	
1010	5 / 10	275	2.25	0.00	0.14	10.74	0.509	6.62	-2.4	0.18	24.6	
1015	5 / 10	275	2.25	0.00	0.14	10.78	0.509	6.62	-2.9	0.18	25.5	
1020	5 / 10	275	2.25	0.00	0.14	10.80	0.508	6.62	-3.0	0.17	24.9	
1025		Sample collected	all parameters	plus MS/MSD								

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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APPENDIX D

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	AIP-01	AIP-01	AL-1	AL-12	AL-12	AL-14	AL-14	AL-14	AL-15	AL-15	AL-15	AL-2	AL-2	ARC-3	ARC-3
			Sample ID	AIP-001-0519108A	AIP-001-1110A	AL-001-121708A	AL-012-052010A	AL-012-1110A	AL-014-121608A	AL-014-051810A	AL-014-1110A	AL-015-121908A	AL-015-051910A	AL-015-1110A	AL-002-051910A	AL-002-1110A	ARC-003-121708A	ARC-003-051910A
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)	35			35			30			30		35			35
			Sample Date & Time	5/19/2010 11:45:00 AM	12/2/2010 3:15:00 PM	12/17/2008 10:55:00 AM	5/20/2010 9:35:00 AM	12/1/2010 10:35:00 AM	12/16/2008 2:40:00 PM	5/18/2010 4:40:00 PM	11/30/2010 9:55:00 AM	12/19/2008 10:50:00 AM	5/19/2010 4:20:00 PM	12/1/2010 2:05:00 PM	5/19/2010 4:20:00 PM	12/1/2010 12:55:00 PM	12/17/2008 10:40:00 AM	5/19/2010 3:25:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample															
			Result Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
1,1,1,2-Tetrachloroethane	630-20-6	--	--															
1,1,1-Trichloroethane	71-55-6	200	200	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	5	5	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1-Dichloroethane	75-34-3	--	70	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1-Dichloroethene	75-35-4	7	7	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1-Dichloropropene	563-58-6	--	--															
1,2,3-Trichlorobenzene	87-61-6	--	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	--	--															
1,2,4-Trichlorobenzene	120-82-1	70	70	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	--	--															
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2-Dibromoethane	106-93-4	0.05	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	600	600	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2-Dichloroethane	107-06-2	**5**	**5**	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2-Dichloropropane	78-87-5	**5**	**5**	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	--	--															
1,3-Dichlorobenzene	541-73-1	--	600	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,3-Dichloropropane	142-28-9	--	--															
1,4-Dichlorobenzene	106-46-7	75	75	0.5 U	5 U	50 U	0.5 U	5 U	0.23	0.22 J	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,4-Dioxane	123-91-1	--	--		100 U	1000 U		100 U	100 U		100 U	100 U		100 U		100 U	100 U	
2,2-Dichloropropane	594-20-7	--	--															
2-Butanone	78-93-3	--	4200	5 U	10 U	100 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	10 U	5 U
2-Chlorotoluene	95-49-8	--	--															
2-Hexanone	591-78-6	--	--	5 U	10 U	100 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	10 U	5 U
2-Methyl-2-phenylpropane	98-06-6	--	--															
2-Phenylbutane	135-98-8	--	--															
4-Chlorotoluene	106-43-4	--	--															
4-Methyl-2-Pentanone	108-10-1	--	--	5 U	10 U	100 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U	10 U	5 U	10 U	10 U	5 U
Acetone	67-64-1	--	700	5 U	10 U	54	5 U	4.3 JB	10 U	5 U	10 U	3.8	5 U	10 U	5 U	10 U	7.5	5 U
Acrylonitrile	107-13-1	--	--															
Benzene	71-43-2	5	5	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Bromobenzene	108-86-1	--	--															
Bromochloromethane	74-97-5	--	90	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Bromodichloromethane	75-27-4	80	80	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Bromoform	75-25-2	80	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Bromomethane	74-83-9	--	10	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Carbon Disulfide	75-15-0	--	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Carbon Tetrachloride	56-23-5	5	5	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chlorobenzene	108-90-7	100	100	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chloroethane	75-00-3	--	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chloroform	67-66-3	80	80	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chloromethane	74-87-3	--	30	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.46 J	5 U	13	0.5 U	5 U	0.28	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
cis-1,3-Dichloropropene	10061-01-5	--	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Cyclohexane	110-82-7	--	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Cymene	99-87-6	--	--															

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	AIP-01	AIP-01	AL-1	AL-12	AL-12	AL-14	AL-14	AL-14	AL-15	AL-15	AL-15	AL-2	AL-2	ARC-3	ARC-3
			Sample ID	AIP-001-0519108A	AIP-001-1110A	AL-001-121708A	AL-012-052010A	AL-012-1110A	AL-014-121608A	AL-014-051810A	AL-014-1110A	AL-015-121908A	AL-015-051910A	AL-015-1110A	AL-002-051910A	AL-002-1110A	ARC-003-121708A	ARC-003-051910A
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)	35			35			30			30		35			35
			Sample Date & Time	5/19/2010 11:45:00 AM	12/2/2010 3:15:00 PM	12/17/2008 10:55:00 AM	5/20/2010 9:35:00 AM	12/1/2010 10:35:00 AM	12/16/2008 2:40:00 PM	5/18/2010 4:40:00 PM	11/30/2010 9:55:00 AM	12/19/2008 10:50:00 AM	5/19/2010 4:20:00 PM	12/1/2010 2:05:00 PM	5/19/2010 4:20:00 PM	12/1/2010 12:55:00 PM	12/17/2008 10:40:00 AM	5/19/2010 3:25:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample															
			Result Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
Dibromochloromethane	124-48-1	80	80	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Dibromomethane	74-95-3	--	--															
Dichlorodifluoromethane	75-71-8	--	1000	0.5 U	5 U	50 U	2.7	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Diethyl ether	60-29-7	--	--															
Ethylbenzene	100-41-4	700	700	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Hexachlorobutadiene	87-68-3	--	--															
Isopropylbenzene	98-82-8	--	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
m,p-Xylene	179601-23-1	10000	10000	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Methyl Acetate	79-20-9	--	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Methyl Tert-Butyl Ether	1634-04-4	--	40	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Methylcyclohexane	108-87-2	--	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Methylene Chloride	75-09-2	**5**	**5**	0.5 U	5 U	50 U	0.5 U	1.2 J	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	0.24	0.5 U
Naphthalene	91-20-3	--	--															
n-Butylbenzene	104-51-8	--	--															
n-Propylbenzene	103-65-1	--	--															
o-Xylene	95-47-6	10000	10000	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Styrene	100-42-5	100	100	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Tetrachloroethene	127-18-4	**5**	**5**	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.64	1.4 J	5 U	0.5 U
Tetrahydrofuran	109-99-9	--	--															
Toluene	108-88-3	1000	1000	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
trans-1,3-Dichloropropene	10061-02-6	--	--	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Trichloroethene	79-01-6	**5**	**5**	**11**	**13**	**5000**	0.5 U	5 U	3	0.24 J	5 U	0.17	0.5 U	4.8 J	3.8	**16**	0.16	0.5 U
Trichlorofluoromethane	75-69-4	--	2100	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U
Vinyl Acetate	108-05-4	--	--															
Vinyl Chloride	75-01-4	**2**	**2**	0.5 U	5 U	50 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.5 U	5 U	5 U	0.5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ARC-3		ASI-02D2		ASI-02D2		ASI-02D2		ASI-02D2		ASI-02D2		ASI-03D2		ASI-03D2		ASI-04D2		ASI-04D2		ASI-04D2		ASI-04D2		ASI-05D2		ASI-05D2	
			Sample ID	ARC-003-1110A		ASI-002D2-121808A		ASI-002D2-121808AD		ASI-002D2-051810A		ASI-002D2-051810D		ASI-002D2-1110A		DUP-1110B		ASI-003D2-051810A		ASI-003D2-1110A		ASI-004D2-121808A		ASI-004D2-051710A		ASI-004D2-1110A		ASI-04D2-0612A		ASI-005D2-121808A		ASI-005D2-052010A	
			Top Depth (feet below grade)																												
			Bottom Depth (feet below grade)							35		35						35												35	
			Sample Date & Time	12/1/2010 1:10:00 PM		12/18/2008 3:15:00 PM		12/18/2008 3:30:00 PM		5/18/2010 9:05:00 AM		5/18/2010 9:10:00 AM		11/29/2010 3:05:00 PM		11/29/2010 3:10:00 PM		5/18/2010 1:55:00 PM		11/29/2010 3:20:00 PM		12/18/2008 11:35:00 AM		5/17/2010 4:40:00 PM		11/30/2010 11:45:00 AM		6/7/2012 9:00:00 AM		12/18/2008 3:25:00 PM		5/20/2010 3:20:00 PM	
			Sample Type	N		N		FD		N		FD		N		FD		N		N		N		N		N		N		N		N	
			Field Duplicate Parent Sample					ASI-002D2-121808A				ASI-002D2-051810A				ASI-002D2-1110A																	
			Result Unit	µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1,2-Tetrachloroethane	630-20-6	--	--																									1	UJ			
1,1,1-Trichloroethane	71-55-6	200	200	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,1,2-Trichloroethane	79-00-5	5	5	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	0.99	J	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,1-Dichloroethane	75-34-3	--	70	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,1-Dichloroethene	75-35-4	7	7	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	6.7		5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,1-Dichloropropene	563-58-6	--	--																									1	UJ			
1,2,3-Trichlorobenzene	87-61-6	--	--	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,2,3-Trichloropropane	96-18-4	--	--																									1	UJ			
1,2,4-Trichlorobenzene	120-82-1	70	70	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,2,4-Trimethylbenzene	95-63-6	--	--																									1	UJ			
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,2-Dibromoethane	106-93-4	0.05	--	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,2-Dichlorobenzene	95-50-1	600	600	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,2-Dichloroethane	107-06-2	**5**	**5**	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	**8.2**		5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,2-Dichloropropane	78-87-5	**5**	**5**	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,3,5-Trimethylbenzene	108-67-8	--	--																									1	UJ			
1,3-Dichlorobenzene	541-73-1	--	600	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,3-Dichloropropane	142-28-9	--	--																									1	UJ			
1,4-Dichlorobenzene	106-46-7	75	75	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
1,4-Dioxane	123-91-1	--	--	100	U	400	U	400	U					100	U	100	U			100	U	100	U			100	U			100	U		
2,2-Dichloropropane	594-20-7	--	--																									1	UJ			
2-Butanone	78-93-3	--	4200	10	U	40	U	40	U	50	U	50	U	10	U	10	U	500	U	10	U	10	U	5	U	10	U	1	UJ	10	U	5	U
2-Chlorotoluene	95-49-8	--	--																									1	UJ			
2-Hexanone	591-78-6	--	--	10	U	40	U	40	U	50	U	50	U	10	U	10	U	500	U	10	U	10	U	5	U	10	U	1	UJ	10	U	5	U
2-Methyl-2-phenylpropane	98-06-6	--	--																									1	UJ			
2-Phenylbutane	135-98-8	--	--																									1	UJ			
4-Chlorotoluene	106-43-4	--	--																									1	UJ			
4-Methyl-2-Pentanone	108-10-1	--	--	10	U	40	U	40	U	50	U	50	U	10	U	10	U	500	U	10	U	10	U	5	U	10	U	1	UJ	10	U	5	U
Acetone	67-64-1	--	700	10	U	27		24		50	U	50	U	10	U	10	U	500	U	10	U	7.4		5	U	10	U	1	UJ	7.1		5	U
Acrylonitrile	107-13-1	--	--																									1	UJ			
Benzene	71-43-2	5	5	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
Bromobenzene	108-86-1	--	--																									1	UJ			
Bromochloromethane	74-97-5	--	90	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
Bromodichloromethane	75-27-4	80	80	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
Bromoform	75-25-2	80	--	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
Bromomethane	74-83-9	--	10	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
Carbon Disulfide	75-15-0	--	--	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
Carbon Tetrachloride	56-23-5	5	5	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
Chlorobenzene	108-90-7	100	100	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
Chloroethane	75-00-3	--	--	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
Chloroform	67-66-3	80	80	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
Chloromethane	74-87-3	--	30	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	5	U	15		14		8.1		7.6		43		41		**2500 D**		**2200 D**		5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
cis-1,3-Dichloropropene	10061-01-5	--	--	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U	1	UJ	5	U	0.5	U
Cyclohexane	110-82-7	--	--	5	U	20	U	20	U	5	U	5	U	5	U	5	U	50	U	5	U	5	U	0.5	U	5	U			5	U	0.5	U
Cymene	99-87-6	--	--																									1	UJ			

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ARC-3	ASI-02D2	ASI-02D2	ASI-02D2	ASI-02D2	ASI-02D2	ASI-02D2	ASI-03D2	ASI-03D2	ASI-04D2	ASI-04D2	ASI-04D2	ASI-04D2	ASI-05D2	ASI-05D2
			Sample ID	ARC-003-1110A	ASI-002D2-121808A	ASI-002D2-121808AD	ASI-002D2-051810A	ASI-002D2-051810D	ASI-002D2-1110A	DUP-1110B	ASI-003D2-051810A	ASI-003D2-1110A	ASI-004D2-121808A	ASI-004D2-051710A	ASI-004D2-1110A	ASI-04D2-0612A	ASI-005D2-121808A	ASI-005D2-052010A
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)				35	35			35							35
			Sample Date & Time	12/1/2010 1:10:00 PM	12/18/2008 3:15:00 PM	12/18/2008 3:30:00 PM	5/18/2010 9:05:00 AM	5/18/2010 9:10:00 AM	11/29/2010 3:05:00 PM	11/29/2010 3:10:00 PM	5/18/2010 1:55:00 PM	11/29/2010 3:20:00 PM	12/18/2008 11:35:00 AM	5/17/2010 4:40:00 PM	11/30/2010 11:45:00 AM	6/7/2012 9:00:00 AM	12/18/2008 3:25:00 PM	5/20/2010 3:20:00 PM
			Sample Type	N	N	FD	N	FD	N	FD	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample			ASI-002D2-121808A		ASI-002D2-051810A		ASI-002D2-1110A								
			Result Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
Dibromochloromethane	124-48-1	80	80	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U
Dibromomethane	74-95-3	--	--													1 UJ		
Dichlorodifluoromethane	75-71-8	--	1000	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U
Diethyl ether	60-29-7	--	--													1 UJ		
Ethylbenzene	100-41-4	700	700	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U
Hexachlorobutadiene	87-68-3	--	--													1 UJ		
Isopropylbenzene	98-82-8	--	--	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U
m,p-Xylene	179601-23-1	10000	10000	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U
Methyl Acetate	79-20-9	--	--	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U		5 U	0.5 U
Methyl Tert-Butyl Ether	1634-04-4	--	40	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U
Methylcyclohexane	108-87-2	--	--	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U		5 U	0.5 U
Methylene Chloride	75-09-2	**5**	**5**	5 U	2.4	2.7	5 U	5 U	5 U	5 U	50 U	5 U	0.64	0.5 U	5 U	1 UJ	1.8	0.5 U
Naphthalene	91-20-3	--	--													1 UJ		
n-Butylbenzene	104-51-8	--	--													1 UJ		
n-Propylbenzene	103-65-1	--	--													1 UJ		
o-Xylene	95-47-6	10000	10000	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U
Styrene	100-42-5	100	100	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U
Tetrachloroethene	127-18-4	**5**	**5**	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U
Tetrahydrofuran	109-99-9	--	--													1 UJ		
Toluene	108-88-3	1000	1000	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	5 U	20 U	0.47	5 U	5 U	5 U	5 U	13 J	9.9	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U
trans-1,3-Dichloropropene	10061-02-6	--	--	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U
Trichloroethene	79-01-6	**5**	**5**	3.2 J	**1800**	**1600**	**860 D**	**730 D**	**460 D**	**410 D**	**6100 D**	**8900 D**	0.13	0.5 U	0.79 J	1 UJ	5 U	0.5 U
Trichlorofluoromethane	75-69-4	--	2100	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U
Vinyl Acetate	108-05-4	--	--													1 UJ		
Vinyl Chloride	75-01-4	**2**	**2**	5 U	20 U	20 U	5 U	5 U	5 U	5 U	50 U	5 U	5 U	0.5 U	5 U	1 UJ	5 U	0.5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-05D2	ASI-05D2	ASI-05D2	ASI-11D2	ASI-11D2	ASI-11D2	ASI-14D2	ASI-14D2	ASI-14D2	ASI-14D2	ASI-14S	ASI-14S	ASI-14S	ASI-15D2	ASI-15D2
			Sample ID	ASI-005D2-052010D	ASI-005D2-1110A	ASI-05D2-0612A	ASI-011D2-121908A	ASI-011D2-051710A	ASI-011D2-1110A	ASI-014D2-121608A	ASI-014D2-121608AD	ASI-014D2-051810A	ASI-014D2-1110A	ASI-014S-121608A	ASI-014S-051810A	ASI-014S-1110A	ASI-015D2-121808A	ASI-015D2-052010A
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)	35				35				35			10			35
			Sample Date & Time	5/20/2010 3:30:00 PM	12/2/2010 10:40:00 AM	6/6/2012 2:30:00 PM	12/19/2008 9:55:00 AM	5/17/2010 4:50:00 PM	11/30/2010 2:15:00 PM	12/16/2008 11:20:00 AM	12/16/2008 11:55:00 AM	5/18/2010 9:00:00 AM	11/30/2010 3:40:00 PM	12/16/2008 10:25:00 AM	5/18/2010 11:45:00 AM	11/30/2010 3:30:00 PM	12/18/2008 10:00:00 AM	5/20/2010 12:00:00 PM
			Sample Type	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
			Field Duplicate Parent Sample	ASI-005D2-052010A							ASI-014D2-121608A							
			Result Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
1,1,1,2-Tetrachloroethane	630-20-6	--	--			1 UJ												
1,1,1-Trichloroethane	71-55-6	200	200	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,1,2-Trichloroethane	79-00-5	5	5	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,1-Dichloroethane	75-34-3	--	70	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,1-Dichloroethene	75-35-4	7	7	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,1-Dichloropropene	563-58-6	--	--			1 UJ												
1,2,3-Trichlorobenzene	87-61-6	--	--	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,2,3-Trichloropropane	96-18-4	--	--			1 UJ												
1,2,4-Trichlorobenzene	120-82-1	70	70	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,2,4-Trimethylbenzene	95-63-6	--	--			1 UJ												
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,2-Dibromoethane	106-93-4	0.05	--	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,2-Dichlorobenzene	95-50-1	600	600	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,2-Dichloroethane	107-06-2	**5**	**5**	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,2-Dichloropropane	78-87-5	**5**	**5**	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,3,5-Trimethylbenzene	108-67-8	--	--			1 UJ												
1,3-Dichlorobenzene	541-73-1	--	600	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,3-Dichloropropane	142-28-9	--	--			1 UJ												
1,4-Dichlorobenzene	106-46-7	75	75	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
1,4-Dioxane	123-91-1	--	--		100 U		500 U		100 U	400 U	400 U		100 U	100 U		100 U	1000 U	
2,2-Dichloropropane	594-20-7	--	--			1 UJ												
2-Butanone	78-93-3	--	4200	5 U	10 U	1 UJ	50 U	100 U	10 U	40 U	40 U	100 U	10 U	10 U	5 U	10 U	100 U	250 U
2-Chlorotoluene	95-49-8	--	--			1 UJ												
2-Hexanone	591-78-6	--	--	5 U	10 U	1 UJ	50 U	100 U	10 U	40 U	40 U	100 U	10 U	10 U	5 U	10 U	100 U	250 U
2-Methyl-2-phenylpropane	98-06-6	--	--			1 UJ												
2-Phenylbutane	135-98-8	--	--			1 UJ												
4-Chlorotoluene	106-43-4	--	--			1 UJ												
4-Methyl-2-Pentanone	108-10-1	--	--	5 U	10 U	1 UJ	50 U	100 U	10 U	40 U	40 U	100 U	10 U	10 U	5 U	10 U	100 U	250 U
Acetone	67-64-1	--	700	5 U	10 U	1 UJ	25	100 U	10 U	40 U	40 U	100 U	10 U	10 U	5 U	10 U	43	250 U
Acrylonitrile	107-13-1	--	--			1 UJ												
Benzene	71-43-2	5	5	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Bromobenzene	108-86-1	--	--			1 UJ												
Bromochloromethane	74-97-5	--	90	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Bromodichloromethane	75-27-4	80	80	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Bromoform	75-25-2	80	--	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Bromomethane	74-83-9	--	10	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Carbon Disulfide	75-15-0	--	--	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Carbon Tetrachloride	56-23-5	5	5	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Chlorobenzene	108-90-7	100	100	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Chloroethane	75-00-3	--	--	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Chloroform	67-66-3	80	80	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Chloromethane	74-87-3	--	30	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.5 U	5 U	1 UJ	36	37	44	22	21	24	49	5 U	0.5 U	5 U	26	22 J
cis-1,3-Dichloropropene	10061-01-5	--	--	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Cyclohexane	110-82-7	--	--	0.5 U	5 U		25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Cymene	99-87-6	--	--			1 UJ												

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-05D2	ASI-05D2	ASI-05D2	ASI-11D2	ASI-11D2	ASI-11D2	ASI-14D2	ASI-14D2	ASI-14D2	ASI-14D2	ASI-14S	ASI-14S	ASI-14S	ASI-15D2	ASI-15D2
			Sample ID	ASI-005D2-052010D	ASI-005D2-1110A	ASI-05D2-0612A	ASI-011D2-121908A	ASI-011D2-051710A	ASI-011D2-1110A	ASI-014D2-121608A	ASI-014D2-121608AD	ASI-014D2-051810A	ASI-014D2-1110A	ASI-014S-121608A	ASI-014S-051810A	ASI-014S-1110A	ASI-015D2-121808A	ASI-015D2-052010A
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)	35				35				35			10			35
			Sample Date & Time	5/20/2010 3:30:00 PM	12/2/2010 10:40:00 AM	6/6/2012 2:30:00 PM	12/19/2008 9:55:00 AM	5/17/2010 4:50:00 PM	11/30/2010 2:15:00 PM	12/16/2008 11:20:00 AM	12/16/2008 11:55:00 AM	5/18/2010 9:00:00 AM	11/30/2010 3:40:00 PM	12/16/2008 10:25:00 AM	5/18/2010 11:45:00 AM	11/30/2010 3:30:00 PM	12/18/2008 10:00:00 AM	5/20/2010 12:00:00 PM
			Sample Type	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
			Field Duplicate Parent Sample	ASI-005D2-052010A							ASI-014D2-121608A							
			Result Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
Dibromochloromethane	124-48-1	80	80	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Dibromomethane	74-95-3	--	--			1 UJ												
Dichlorodifluoromethane	75-71-8	--	1000	0.5 U	5 U	1 UJ	25 U	10 U	0.74 J	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Diethyl ether	60-29-7	--	--			1 UJ												
Ethylbenzene	100-41-4	700	700	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Hexachlorobutadiene	87-68-3	--	--			1 UJ												
Isopropylbenzene	98-82-8	--	--	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
m,p-Xylene	179601-23-1	10000	10000	0.5 U	5 U	2 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Methyl Acetate	79-20-9	--	--	0.5 U	5 U		25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Methyl Tert-Butyl Ether	1634-04-4	--	40	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Methylcyclohexane	108-87-2	--	--	0.5 U	5 U		25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Methylene Chloride	75-09-2	**5**	**5**	0.5 U	1.2 J	1 UJ	25 U	10 U	5 U	1.1	0.82	10 U	5 U	5 U	0.5 U	5 U	**17**	25 U
Naphthalene	91-20-3	--	--			1 UJ												
n-Butylbenzene	104-51-8	--	--			1 UJ												
n-Propylbenzene	103-65-1	--	--			1 UJ												
o-Xylene	95-47-6	10000	10000	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Styrene	100-42-5	100	100	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Tetrachloroethene	127-18-4	**5**	**5**	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Tetrahydrofuran	109-99-9	--	--			1 UJ												
Toluene	108-88-3	1000	1000	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	0.5 U	5 U	1 UJ	25 U	10 U	0.61 J	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
trans-1,3-Dichloropropene	10061-02-6	--	--	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Trichloroethene	79-01-6	**5**	**5**	0.5 U	5 U	1 UJ	**2900**	**2100 D**	**1700 D**	**2900**	**2800**		**3200 D**	5 U	0.5 U	5 U	**5300**	**3400 D**
Trichlorofluoromethane	75-69-4	--	2100	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U
Vinyl Acetate	108-05-4	--	--			1 UJ												
Vinyl Chloride	75-01-4	**2**	**2**	0.5 U	5 U	1 UJ	25 U	10 U	5 U	20 U	20 U	10 U	5 U	5 U	0.5 U	5 U	50 U	25 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-15D2		ASI-16D2		ASI-16D2		ASI-23D2		ASI-23D2		ASI-23D2		ASI-23S		ASI-23S		ASI-23S		BF-4		BF-4		BF-4		BM-3D		BM-3D		BM-3D	
			Sample ID	ASI-015D2-1110A		ASI-016D2-051910A		ASI-016D2-1110A		ASI-023D2-121608A		ASI-023D2-051810A		ASI-023D2-1110A		ASI-023S-121608A		ASI-023S-051810A		ASI-023S-1110A		BF-004-121908A		BF-004-052010A		BF-004-1110A		BM-03D-121708A		BM-003D-051910A		BM-003D-1110A	
			Top Depth (feet below grade)																														
			Bottom Depth (feet below grade)			35						35						20						96						35			
			Sample Date & Time	12/1/2010 3:10:00 PM		5/19/2010 1:30:00 PM		12/1/2010 12:35:00 PM		12/16/2008 3:05:00 PM		5/18/2010 10:55:00 AM		12/1/2010 10:05:00 AM		12/16/2008 4:25:00 PM		5/18/2010 1:10:00 PM		12/1/2010 9:45:00 AM		12/19/2008 8:40:00 AM		5/20/2010 3:40:00 PM		12/1/2010 1:25:00 PM		12/17/2008 10:40:00 AM		5/19/2010 11:05:00 AM		11/29/2010 3:25:00 PM	
			Sample Type	N		N		N		N		N		N		N		N		N		N		N		N		N		N		N	
			Field Duplicate Parent Sample																														
			Result Unit	µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1,2-Tetrachloroethane	630-20-6	--	--																														
1,1,1-Trichloroethane	71-55-6	200	200	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,1,2-Trichloroethane	79-00-5	5	5	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,1-Dichloroethane	75-34-3	--	70	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,1-Dichloroethene	75-35-4	7	7	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,1-Dichloropropene	563-58-6	--	--																														
1,2,3-Trichlorobenzene	87-61-6	--	--	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,2,3-Trichloropropane	96-18-4	--	--																														
1,2,4-Trichlorobenzene	120-82-1	70	70	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,2,4-Trimethylbenzene	95-63-6	--	--																														
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,2-Dibromoethane	106-93-4	0.05	--	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,2-Dichlorobenzene	95-50-1	600	600	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,2-Dichloroethane	107-06-2	**5**	**5**	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,2-Dichloropropane	78-87-5	**5**	**5**	250	U	25	U	**1200**		20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,3,5-Trimethylbenzene	108-67-8	--	--																														
1,3-Dichlorobenzene	541-73-1	--	600	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,3-Dichloropropane	142-28-9	--	--																														
1,4-Dichlorobenzene	106-46-7	75	75	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
1,4-Dioxane	123-91-1	--	--	5000	U			10000	U	400	U			3300	U	100	U			100	U	100	U			100	U	100	U			100	U
2,2-Dichloropropane	594-20-7	--	--																														
2-Butanone	78-93-3	--	4200	500	U	250	U	1000	U	40	U	200	U	330	U	10	U	5	U	10	U	10	U	5	U	10	U	10	U	5	U	10	U
2-Chlorotoluene	95-49-8	--	--																														
2-Hexanone	591-78-6	--	--	500	U	250	U	1000	U	40	U	200	U	330	U	10	U	5	U	10	U	10	U	5	U	10	U	10	U	5	U	10	U
2-Methyl-2-phenylpropane	98-06-6	--	--																														
2-Phenylbutane	135-98-8	--	--																														
4-Chlorotoluene	106-43-4	--	--																														
4-Methyl-2-Pentanone	108-10-1	--	--	500	U	250	U	1000	U	40	U	200	U	330	U	10	U	5	U	10	U	10	U	5	U	10	U	10	U	5	U	10	U
Acetone	67-64-1	--	700	260	JB	250	U	1000	U	40	U	200	U	330	U	10	U	5	U	10	U	5.6		5	U	6.4	J	8.4		5	U	10	U
Acrylonitrile	107-13-1	--	--																														
Benzene	71-43-2	5	5	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
Bromobenzene	108-86-1	--	--																														
Bromochloromethane	74-97-5	--	90	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
Bromodichloromethane	75-27-4	80	80	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
Bromoform	75-25-2	80	--	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
Bromomethane	74-83-9	--	10	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
Carbon Disulfide	75-15-0	--	--	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.38	J	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
Carbon Tetrachloride	56-23-5	5	5	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
Chlorobenzene	108-90-7	100	100	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
Chloroethane	75-00-3	--	--	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
Chloroform	67-66-3	80	80	250	U	25	U	500	U	1.5		20	U	170	U	1.9		0.46	J	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
Chloromethane	74-87-3	--	30	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	26	J	15	J	500	U	5		4.6	J	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	3.5		3.3		4	J
cis-1,3-Dichloropropene	10061-01-5	--	--	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U	5	U	0.5	U	5	U
Cyclohexane	110-82-7	--	--	250	U	25	U	500	U	20	U	20	U	170	U	5	U	0.5	U	5	U	5	U	0.5	U	9.7		5	U	0.16	J	5	U
Cymene	99-87-6	--	--																														

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-15D2	ASI-16D2	ASI-16D2	ASI-23D2	ASI-23D2	ASI-23D2	ASI-23S	ASI-23S	ASI-23S	BF-4	BF-4	BF-4	BM-3D	BM-3D	BM-3D
			Sample ID	ASI-015D2-1110A	ASI-016D2-051910A	ASI-016D2-1110A	ASI-023D2-121608A	ASI-023D2-051810A	ASI-023D2-1110A	ASI-023S-121608A	ASI-023S-051810A	ASI-023S-1110A	BF-004-121908A	BF-004-052010A	BF-004-1110A	BM-03D-121708A	BM-003D-051910A	BM-003D-1110A
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)		35			35			20			96			35	
			Sample Date & Time	12/1/2010 3:10:00 PM	5/19/2010 1:30:00 PM	12/1/2010 12:35:00 PM	12/16/2008 3:05:00 PM	5/18/2010 10:55:00 AM	12/1/2010 10:05:00 AM	12/16/2008 4:25:00 PM	5/18/2010 1:10:00 PM	12/1/2010 9:45:00 AM	12/19/2008 8:40:00 AM	5/20/2010 3:40:00 PM	12/1/2010 1:25:00 PM	12/17/2008 10:40:00 AM	5/19/2010 11:05:00 AM	11/29/2010 3:25:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample															
			Result Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
Dibromochloromethane	124-48-1	80	80	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U
Dibromomethane	74-95-3	--	--															
Dichlorodifluoromethane	75-71-8	--	1000	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	1.3	1.2	1.7 J
Diethyl ether	60-29-7	--	--															
Ethylbenzene	100-41-4	700	700	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	0.12	0.5 U	5 U	5 U	0.5 U	5 U
Hexachlorobutadiene	87-68-3	--	--															
Isopropylbenzene	98-82-8	--	--	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	0.21	0.5 U	1 J	0.13	0.5 U	5 U
m,p-Xylene	179601-23-1	10000	10000	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U
Methyl Acetate	79-20-9	--	--	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U
Methyl Tert-Butyl Ether	1634-04-4	--	40	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	1	0.86	0.45 J
Methylcyclohexane	108-87-2	--	--	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U
Methylene Chloride	75-09-2	**5**	**5**	**460**	25 U	**120 J**	1.2	20 U	170 U	5 U	0.5 U	5 U	0.13	0.5 U	5 U	5 U	0.5 U	5 U
Naphthalene	91-20-3	--	--															
n-Butylbenzene	104-51-8	--	--															
n-Propylbenzene	103-65-1	--	--															
o-Xylene	95-47-6	10000	10000	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U
Styrene	100-42-5	100	100	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U
Tetrachloroethene	127-18-4	**5**	**5**	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.54	0.56	0.94 J
Tetrahydrofuran	109-99-9	--	--															
Toluene	108-88-3	1000	1000	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	0.33	0.28 J	5 U
trans-1,3-Dichloropropene	10061-02-6	--	--	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U
Trichloroethene	79-01-6	**5**	**5**	**5700**	**4300 D**	**5400**	**2500**	**2400 D**	**3300**	1.9	0.44 J	5 U	0.1	0.5 U	5 U	**140**	**120 D**	**170 D**
Trichlorofluoromethane	75-69-4	--	2100	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U
Vinyl Acetate	108-05-4	--	--															
Vinyl Chloride	75-01-4	**2**	**2**	250 U	25 U	500 U	20 U	20 U	170 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U	5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	BM-3S	BM-3S	BM-3S	BR-1	BR-1	BR-1	BR-1	BW-13S	BW-13S	BW-13S	MI-01	MI-01	MI-01	MI-02	MI-02
			Sample ID	BM-03S-121908A	BM-003S-051910A	BM-003S-1110A	BR-001-121708A	BR-001-052110A	BR-001-1110A	BR-01-0612A	BW-013S-121808A	BW-013S-052010A	BW-013S-1110A	MI-001-121508A	MI-001-051910A	MI-001-1110A	MI-002-121508A	MI-002-051810A
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)		35			96				96			20			20
			Sample Date & Time	12/19/2008 9:40:00 AM	5/19/2010 1:50:00 PM	11/29/2010 3:10:00 PM	12/17/2008 1:15:00 PM	5/21/2010 8:15:00 AM	12/2/2010 9:45:00 AM	6/6/2012 7:50:00 AM	12/18/2008 2:30:00 PM	5/20/2010 9:40:00 AM	12/2/2010 1:00:00 PM	12/15/2008 3:20:00 PM	5/19/2010 9:45:00 AM	11/29/2010 11:20:00 AM	12/15/2008 4:25:00 PM	5/18/2010 3:25:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample															
			Result Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
1,1,1,2-Tetrachloroethane	630-20-6	--	--							2 UJ								
1,1,1-Trichloroethane	71-55-6	200	200	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1,2-Trichloroethane	79-00-5	5	5	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1-Dichloroethane	75-34-3	--	70	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1-Dichloroethene	75-35-4	7	7	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,1-Dichloropropene	563-58-6	--	--							2 UJ								
1,2,3-Trichlorobenzene	87-61-6	--	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2,3-Trichloropropane	96-18-4	--	--							2 UJ								
1,2,4-Trichlorobenzene	120-82-1	70	70	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	0.58	0.5 U	5 U	5 U	0.5 U
1,2,4-Trimethylbenzene	95-63-6	--	--							2 UJ								
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	**0.84**	0.5 U	5 U	5 U	0.5 U
1,2-Dibromoethane	106-93-4	0.05	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2-Dichlorobenzene	95-50-1	600	600	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2-Dichloroethane	107-06-2	**5**	**5**	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,2-Dichloropropane	78-87-5	**5**	**5**	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,3,5-Trimethylbenzene	108-67-8	--	--							2 UJ								
1,3-Dichlorobenzene	541-73-1	--	600	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	0.22	0.5 U	5 U	5 U	0.5 U
1,3-Dichloropropane	142-28-9	--	--							2 UJ								
1,4-Dichlorobenzene	106-46-7	75	75	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
1,4-Dioxane	123-91-1	--	--	100 U		100 U	100 U		100 U		100 U			100 U		100 U	100 U	
2,2-Dichloropropane	594-20-7	--	--							2 UJ								
2-Butanone	78-93-3	--	4200	10 U	5 U	10 U	10 U	5 U	10 U	2 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Chlorotoluene	95-49-8	--	--							2 UJ								
2-Hexanone	591-78-6	--	--	10 U	5 U	10 U	10 U	5 U	10 U	2 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
2-Methyl-2-phenylpropane	98-06-6	--	--							2 UJ								
2-Phenylbutane	135-98-8	--	--							2 UJ								
4-Chlorotoluene	106-43-4	--	--							2 UJ								
4-Methyl-2-Pentanone	108-10-1	--	--	10 U	5 U	10 U	10 U	5 U	10 U	2 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U	5 U
Acetone	67-64-1	--	700	5	5 U	10 U	12	7.2	25 B	7.2 J	5.3	5 U	5.9 JB	10 U	5 U	10 U	10 U	5 U
Acrylonitrile	107-13-1	--	--							2 UJ								
Benzene	71-43-2	5	5	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Bromobenzene	108-86-1	--	--							2 UJ								
Bromochloromethane	74-97-5	--	90	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Bromodichloromethane	75-27-4	80	80	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Bromoform	75-25-2	80	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Bromomethane	74-83-9	--	10	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Carbon Disulfide	75-15-0	--	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Carbon Tetrachloride	56-23-5	5	5	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chlorobenzene	108-90-7	100	100	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chloroethane	75-00-3	--	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chloroform	67-66-3	80	80	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Chloromethane	74-87-3	--	30	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	5 U	0.5 U	5 U	2.4	26 D	41	**82 J**	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
cis-1,3-Dichloropropene	10061-01-5	--	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Cyclohexane	110-82-7	--	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U		5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Cymene	99-87-6	--	--							2 UJ								

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	BM-3S	BM-3S	BM-3S	BR-1	BR-1	BR-1	BR-1	BW-13S	BW-13S	BW-13S	MI-01	MI-01	MI-01	MI-02	MI-02
			Sample ID	BM-03S-121908A	BM-003S-051910A	BM-003S-1110A	BR-001-121708A	BR-001-052110A	BR-001-1110A	BR-01-0612A	BW-013S-121808A	BW-013S-052010A	BW-013S-1110A	MI-001-121508A	MI-001-051910A	MI-001-1110A	MI-002-121508A	MI-002-051810A
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)		35			96				96			20			20
			Sample Date & Time	12/19/2008 9:40:00 AM	5/19/2010 1:50:00 PM	11/29/2010 3:10:00 PM	12/17/2008 1:15:00 PM	5/21/2010 8:15:00 AM	12/2/2010 9:45:00 AM	6/6/2012 7:50:00 AM	12/18/2008 2:30:00 PM	5/20/2010 9:40:00 AM	12/2/2010 1:00:00 PM	12/15/2008 3:20:00 PM	5/19/2010 9:45:00 AM	11/29/2010 11:20:00 AM	12/15/2008 4:25:00 PM	5/18/2010 3:25:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample															
			Result Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
Dibromochloromethane	124-48-1	80	80	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Dibromomethane	74-95-3	--	--							2 UJ								
Dichlorodifluoromethane	75-71-8	--	1000	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Diethyl ether	60-29-7	--	--							2 UJ								
Ethylbenzene	100-41-4	700	700	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Hexachlorobutadiene	87-68-3	--	--							2 UJ								
Isopropylbenzene	98-82-8	--	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
m,p-Xylene	179601-23-1	10000	10000	5 U	0.5 U	5 U	0.22	0.5 U	5 U	4 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Methyl Acetate	79-20-9	--	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U		5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Methyl Tert-Butyl Ether	1634-04-4	--	40	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Methylcyclohexane	108-87-2	--	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U		5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Methylene Chloride	75-09-2	**5**	**5**	5 U	0.5 U	5 U	0.22	0.5 U	4.6 J	2 UJ	1.2	0.5 U	5 U	0.15	0.5 U	5 U	5 U	0.5 U
Naphthalene	91-20-3	--	--							2 UJ								
n-Butylbenzene	104-51-8	--	--							2 UJ								
n-Propylbenzene	103-65-1	--	--							2 UJ								
o-Xylene	95-47-6	10000	10000	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Styrene	100-42-5	100	100	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Tetrachloroethene	127-18-4	**5**	**5**	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Tetrahydrofuran	109-99-9	--	--							2 UJ								
Toluene	108-88-3	1000	1000	5 U	0.5 U	5 U	0.34	0.17 J	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
trans-1,3-Dichloropropene	10061-02-6	--	--	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Trichloroethene	79-01-6	**5**	**5**	0.11	0.5 U	5 U	**110**	**57 D**	**56**	**46 J**	0.11	0.5 U	5 U	0.33	0.15 J	5 U	5 U	0.5 U
Trichlorofluoromethane	75-69-4	--	2100	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U
Vinyl Acetate	108-05-4	--	--							2 UJ								
Vinyl Chloride	75-01-4	**2**	**2**	5 U	0.5 U	5 U	5 U	0.5 U	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U	0.5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MI-02		MI-08		MI-08		MI-08		MW-01D		MW-01D		MW-02M		MW-03D		MW-03D		MW-04D		MW-04D		MW-04D		MW-05D		MW-05D		MW-05D2	
			Sample ID	MI-002-1110A		MI-008-121908A		MI-008-052010A		MI-008-1110A		MW-001D-1110A		MW-01D-0612A		MW-002M-1110A		MW-003D-1110A		MW-03D-0612A		DUP-1110C		MW-004D-1110A		MW-04D-0612A		MW-005D-1110A		MW-05D-0612A		MW-005D2-1110A	
			Top Depth (feet below grade)																														
			Bottom Depth (feet below grade)					20																									
			Sample Date & Time	11/29/2010 11:55:00 AM		12/19/2008 10:20:00 AM		5/20/2010 9:50:00 AM		12/2/2010 2:15:00 PM		12/1/2010 10:40:00 AM		6/7/2012 10:50:00 AM		11/29/2010 3:25:00 PM		11/29/2010 11:45:00 AM		6/7/2012 4:50:00 PM		12/2/2010 11:20:00 AM		12/2/2010 11:15:00 AM		6/6/2012 1:50:00 PM		11/30/2010 11:00:00 AM		6/6/2012 3:15:00 PM		11/30/2010 10:15:00 AM	
			Sample Type	N		N		N		N		N		N		N		N		N		FD		N		N		N		N		N	
			Field Duplicate Parent Sample																			MW-004D-1110A											
			Result Unit	µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1,2-Tetrachloroethane	630-20-6	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
1,1,1-Trichloroethane	71-55-6	200	200	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,1,2-Trichloroethane	79-00-5	5	5	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	0.47	J	1000	UJ	0.47	J
1,1-Dichloroethane	75-34-3	--	70	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,1-Dichloroethene	75-35-4	7	7	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,1-Dichloropropene	563-58-6	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
1,2,3-Trichlorobenzene	87-61-6	--	--	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,2,3-Trichloropropane	96-18-4	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
1,2,4-Trichlorobenzene	120-82-1	70	70	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,2,4-Trimethylbenzene	95-63-6	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,2-Dibromoethane	106-93-4	0.05	--	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,2-Dichlorobenzene	95-50-1	600	600	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,2-Dichloroethane	107-06-2	**5**	**5**	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	4.6	J	1000	UJ	**6.5**	
1,2-Dichloropropane	78-87-5	**5**	**5**	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,3,5-Trimethylbenzene	108-67-8	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
1,3-Dichlorobenzene	541-73-1	--	600	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,3-Dichloropropane	142-28-9	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
1,4-Dichlorobenzene	106-46-7	75	75	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
1,4-Dioxane	123-91-1	--	--	100	U	100	U			100	U	100	U			100	U	100	U			100000	U	10000	U			100	U			100	U
2,2-Dichloropropane	594-20-7	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
2-Butanone	78-93-3	--	4200	10	U	10	U	5	U	10	U	10	U	1	UJ	10	U	10	U	10	UJ	10000	U	1000	U	1000	UJ	10	U	1000	UJ	10	U
2-Chlorotoluene	95-49-8	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
2-Hexanone	591-78-6	--	--	10	U	10	U	5	U	10	U	10	U	1	UJ	10	U	10	U	10	UJ	10000	U	1000	U	1000	UJ	10	U	1000	UJ	10	U
2-Methyl-2-phenylpropane	98-06-6	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
2-Phenylbutane	135-98-8	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
4-Chlorotoluene	106-43-4	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
4-Methyl-2-Pentanone	108-10-1	--	--	10	U	10	U	5	U	10	U	10	U	1	UJ	10	U	10	U	10	UJ	10000	U	1000	U	1000	UJ	10	U	1000	UJ	10	U
Acetone	67-64-1	--	700	10	U	5.3		5	U	10	U	10	U	1	UJ	10	U	5.4	J	10	UJ	10000	U	420	JB	1000	UJ	3.8	J	1000	UJ	4.8	J
Acrylonitrile	107-13-1	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
Benzene	71-43-2	5	5	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
Bromobenzene	108-86-1	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		
Bromochloromethane	74-97-5	--	90	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
Bromodichloromethane	75-27-4	80	80	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
Bromoform	75-25-2	80	--	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
Bromomethane	74-83-9	--	10	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
Carbon Disulfide	75-15-0	--	--	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
Carbon Tetrachloride	56-23-5	5	5	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
Chlorobenzene	108-90-7	100	100	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
Chloroethane	75-00-3	--	--	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
Chloroform	67-66-3	80	80	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
Chloromethane	74-87-3	--	30	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	5	U	5	U	0.5	U	5	U	1.1	J	1	UJ	5	U	1.4	J	10	UJ	5000	U	**100**	**J**	1000	UJ	**170**		1000	UJ	20	
cis-1,3-Dichloropropene	10061-01-5	--	--	5	U	5	U	0.5	U	5	U	5	U	1	UJ	5	U	5	U	10	UJ	5000	U	500	U	1000	UJ	5	U	1000	UJ	5	U
Cyclohexane	110-82-7	--	--	5	U	5	U	0.5	U	5	U	5	U			5	U	5	U			5000	U	500	U			5	U			5	U
Cymene	99-87-6	--	--											1	UJ					10	UJ					1000	UJ			1000	UJ		

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MI-02	MI-08	MI-08	MI-08	MW-01D	MW-01D	MW-02M	MW-03D	MW-03D	MW-04D	MW-04D	MW-04D	MW-05D	MW-05D	MW-05D2
			Sample ID	MI-002-1110A	MI-008-121908A	MI-008-052010A	MI-008-1110A	MW-001D-1110A	MW-01D-0612A	MW-002M-1110A	MW-003D-1110A	MW-03D-0612A	DUP-1110C	MW-004D-1110A	MW-04D-0612A	MW-005D-1110A	MW-05D-0612A	MW-005D2-1110A
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)			20												
			Sample Date & Time	11/29/2010 11:55:00 AM	12/19/2008 10:20:00 AM	5/20/2010 9:50:00 AM	12/2/2010 2:15:00 PM	12/1/2010 10:40:00 AM	6/7/2012 10:50:00 AM	11/29/2010 3:25:00 PM	11/29/2010 11:45:00 AM	6/7/2012 4:50:00 PM	12/2/2010 11:20:00 AM	12/2/2010 11:15:00 AM	6/6/2012 1:50:00 PM	11/30/2010 11:00:00 AM	6/6/2012 3:15:00 PM	11/30/2010 10:15:00 AM
			Sample Type	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
			Field Duplicate Parent Sample										MW-004D-1110A					
			Result Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
Dibromochloromethane	124-48-1	80	80	5 U	5 U	0.5 U	5 U	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	500 U	1000 UJ	5 U	1000 UJ	5 U
Dibromomethane	74-95-3	--	--						1 UJ			10 UJ			1000 UJ		1000 UJ	
Dichlorodifluoromethane	75-71-8	--	1000	5 U	5 U	0.5 U	5 U	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	500 U	1000 UJ	5 U	1000 UJ	5 U
Diethyl ether	60-29-7	--	--						1 UJ			10 UJ			1000 UJ		1000 UJ	
Ethylbenzene	100-41-4	700	700	5 U	5 U	0.5 U	5 U	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	500 U	1000 UJ	0.61 J	1000 UJ	5 U
Hexachlorobutadiene	87-68-3	--	--						1 UJ			10 UJ			1000 UJ		1000 UJ	
Isopropylbenzene	98-82-8	--	--	5 U	5 U	0.5 U	5 U	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	500 U	1000 UJ	5 U	1000 UJ	5 U
m,p-Xylene	179601-23-1	10000	10000	5 U	5 U	0.5 U	5 U	5 U	2 UJ	5 U	5 U	20 UJ	5000 U	500 U	2000 UJ	1.3 J	2000 UJ	5 U
Methyl Acetate	79-20-9	--	--	5 U	5 U	0.5 U	5 U	5 U		5 U	5 U		5000 U	500 U		5 U		5 U
Methyl Tert-Butyl Ether	1634-04-4	--	40	5 U	5 U	0.5 U	5 U	0.74 J	1 UJ	7.7	0.42 J	10 UJ	5000 U	500 U	1000 UJ	5 U	1000 UJ	5 U
Methylcyclohexane	108-87-2	--	--	5 U	5 U	0.5 U	5 U	5 U		5 U	5 U		5000 U	500 U		5 U		5 U
Methylene Chloride	75-09-2	**5**	**5**	5 U	5 U	0.5 U	4.8 J	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	**590**	1000 UJ	5 U	1000 UJ	5 U
Naphthalene	91-20-3	--	--						1 UJ			10 UJ			1000 UJ		1000 UJ	
n-Butylbenzene	104-51-8	--	--						1 UJ			10 UJ			1000 UJ		1000 UJ	
n-Propylbenzene	103-65-1	--	--						1 UJ			10 UJ			1000 UJ		1000 UJ	
o-Xylene	95-47-6	10000	10000	5 U	5 U	0.5 U	5 U	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	500 U	1000 UJ	0.65 J	1000 UJ	5 U
Styrene	100-42-5	100	100	5 U	5 U	0.5 U	5 U	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	500 U	1000 UJ	5 U	1000 UJ	5 U
Tetrachloroethene	127-18-4	**5**	**5**	5 U	0.46	0.63	5 U	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	500 U	1000 UJ	2.6 J	1000 UJ	5 U
Tetrahydrofuran	109-99-9	--	--						1 UJ			10 UJ			1000 UJ		1000 UJ	
Toluene	108-88-3	1000	1000	5 U	5 U	0.5 U	5 U	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	500 U	1000 UJ	5 U	1000 UJ	5 U
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	5 U	5 U	0.5 U	5 U	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	500 U	1000 UJ	2 J	1000 UJ	5 U
trans-1,3-Dichloropropene	10061-02-6	--	--	5 U	5 U	0.5 U	5 U	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	500 U	1000 UJ	5 U	1000 UJ	5 U
Trichloroethene	79-01-6	**5**	**5**	5 U	0.24	0.19 J	5 U	**5.6**	1 UJ	**7.6**	**450 D**	**320 J**	**77000**	**75000 D**	**55000 J**	**19000 D**	**22000 J**	**12000 D**
Trichlorofluoromethane	75-69-4	--	2100	5 U	5 U	0.5 U	5 U	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	500 U	1000 UJ	5 U	1000 UJ	5 U
Vinyl Acetate	108-05-4	--	--						1 UJ			10 UJ			1000 UJ		1000 UJ	
Vinyl Chloride	75-01-4	**2**	**2**	5 U	5 U	0.5 U	5 U	5 U	1 UJ	5 U	5 U	10 UJ	5000 U	500 U	1000 UJ	5 U	1000 UJ	5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MW-05D2		MW-06D		MW-06D		MW-06M		MW-07M		MW-07M		MW-08M		MW-08M		MW-08S		MW-08S		MW-09D		MW-09D		MW-09M		MW-09M	
			Sample ID	MW-05D2-0612A		MW-006D-1110A		MW-06D-0612A		MW-006M-1110A		MW-06M-0612A		MW-007M-1110A		MW-07M-0612A		MW-008M-1110A		MW-08M-0612A		MW-008S-1110A		MW-08S-0612A		MW-009D-1110A		MW-09D-0612A		MW-009M-1110A		MW-09M-0612A	
			Top Depth (feet below grade)																												
			Bottom Depth (feet below grade)																												
			Sample Date & Time	6/5/2012 3:40:00 PM		11/30/2010 10:20:00 AM		6/6/2012 12:25:00 PM		11/30/2010 10:15:00 AM		6/6/2012 9:45:00 AM		12/2/2010 10:10:00 AM		6/5/2012 5:05:00 PM		11/30/2010 1:15:00 PM		6/6/2012 10:25:00 AM		11/30/2010 1:15:00 PM		6/7/2012 9:20:00 AM		12/2/2010 10:55:00 AM		6/5/2012 10:25:00 AM		12/1/2010 3:55:00 PM		6/5/2012 11:20:00 AM	
			Sample Type	N		N		N		N		N		N		N		N		N		N		N		N		N		N	
			Field Duplicate Parent Sample																												
			Result Unit	µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L		µg/L	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
1,1,1,2-Tetrachloroethane	630-20-6	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
1,1,1-Trichloroethane	71-55-6	200	200	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,1,2,2-Tetrachloroethane	79-34-5	--	--	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,1,2-Trichloroethane	79-00-5	5	5	1	UJ	1700	U	1000	UJ	0.77	J	1000	UJ	13	U	10	UJ	0.93	J	200	UJ	0.68	J	50	UJ	5	U	1	UJ	5	U	2	UJ
1,1-Dichloroethane	75-34-3	--	70	1	UJ	1700	U	1000	UJ	0.62	J	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,1-Dichloroethene	75-35-4	7	7	1	UJ	1700	U	1000	UJ	5.9		1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,1-Dichloropropene	563-58-6	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
1,2,3-Trichlorobenzene	87-61-6	--	--	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,2,3-Trichloropropane	96-18-4	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
1,2,4-Trichlorobenzene	120-82-1	70	70	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,2,4-Trimethylbenzene	95-63-6	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,2-Dibromoethane	106-93-4	0.05	--	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,2-Dichlorobenzene	95-50-1	600	600	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,2-Dichloroethane	107-06-2	**5**	**5**	1	UJ	1700	U	1000	UJ	**8.9**		1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,2-Dichloropropane	78-87-5	**5**	**5**	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,3,5-Trimethylbenzene	108-67-8	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
1,3-Dichlorobenzene	541-73-1	--	600	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,3-Dichloropropane	142-28-9	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
1,4-Dichlorobenzene	106-46-7	75	75	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
1,4-Dioxane	123-91-1	--	--			33000	U			100	U			250	U			100	U			100	U			100	U			100	U		
2,2-Dichloropropane	594-20-7	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
2-Butanone	78-93-3	--	4200	1	UJ	3300	U	1000	UJ	10	U	1000	UJ	25	U	10	UJ	10	U	200	UJ	10	U	50	UJ	10	U	1	UJ	10	U	2	UJ
2-Chlorotoluene	95-49-8	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
2-Hexanone	591-78-6	--	--	1	UJ	3300	U	1000	UJ	10	U	1000	UJ	25	U	10	UJ	10	U	200	UJ	10	U	50	UJ	10	U	1	UJ	10	U	2	UJ
2-Methyl-2-phenylpropane	98-06-6	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
2-Phenylbutane	135-98-8	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
4-Chlorotoluene	106-43-4	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
4-Methyl-2-Pentanone	108-10-1	--	--	1	UJ	3300	U	1000	UJ	10	U	1000	UJ	25	U	10	UJ	10	U	200	UJ	10	U	50	UJ	10	U	1	UJ	10	U	2	UJ
Acetone	67-64-1	--	700	1	UJ	3300	U	1000	UJ	10	U	1000	UJ	11	J	10	UJ	4	J	200	UJ	10	U	50	UJ	9.5	J	1	UJ	9.7	J	2	UJ
Acrylonitrile	107-13-1	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
Benzene	71-43-2	5	5	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
Bromobenzene	108-86-1	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ
Bromochloromethane	74-97-5	--	90	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
Bromodichloromethane	75-27-4	80	80	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
Bromoform	75-25-2	80	--	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
Bromomethane	74-83-9	--	10	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
Carbon Disulfide	75-15-0	--	--	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
Carbon Tetrachloride	56-23-5	5	5	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
Chlorobenzene	108-90-7	100	100	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
Chloroethane	75-00-3	--	--	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
Chloroform	67-66-3	80	80	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
Chloromethane	74-87-3	--	30	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	1	UJ	1700	U	1000	UJ	**140**		1000	UJ	13	U	10	UJ	8.5		200	UJ	4.1	J	50	UJ	5	U	1	UJ	5	U	2	UJ
cis-1,3-Dichloropropene	10061-01-5	--	--	1	UJ	1700	U	1000	UJ	5	U	1000	UJ	13	U	10	UJ	5	U	200	UJ	5	U	50	UJ	5	U	1	UJ	5	U	2	UJ
Cyclohexane	110-82-7	--	--			1700	U			5	U			13	U			5	U			5	U			5	U			5	U		
Cymene	99-87-6	--	--	1	UJ			1000	UJ			1000	UJ			10	UJ			200	UJ			50	UJ			1	UJ			2	UJ

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MW-05D2	MW-06D	MW-06D	MW-06M	MW-06M	MW-07M	MW-07M	MW-08M	MW-08M	MW-08S	MW-08S	MW-09D	MW-09D	MW-09M	MW-09M
			Sample ID	MW-05D2-0612A	MW-006D-1110A	MW-06D-0612A	MW-006M-1110A	MW-06M-0612A	MW-007M-1110A	MW-07M-0612A	MW-008M-1110A	MW-08M-0612A	MW-008S-1110A	MW-08S-0612A	MW-009D-1110A	MW-09D-0612A	MW-009M-1110A	MW-09M-0612A
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)															
			Sample Date & Time	6/5/2012 3:40:00 PM	11/30/2010 10:20:00 AM	6/6/2012 12:25:00 PM	11/30/2010 10:15:00 AM	6/6/2012 9:45:00 AM	12/2/2010 10:10:00 AM	6/5/2012 5:05:00 PM	11/30/2010 1:15:00 PM	6/6/2012 10:25:00 AM	11/30/2010 1:15:00 PM	6/7/2012 9:20:00 AM	12/2/2010 10:55:00 AM	6/5/2012 10:25:00 AM	12/1/2010 3:55:00 PM	6/5/2012 11:20:00 AM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample															
			Result Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
Dibromochloromethane	124-48-1	80	80	1 UJ	1700 U	1000 UJ	5 U	1000 UJ	13 U	10 UJ	5 U	200 UJ	5 U	50 UJ	5 U	1 UJ	5 U	2 UJ
Dibromomethane	74-95-3	--	--	1 UJ		1000 UJ		1000 UJ		10 UJ		200 UJ		50 UJ		1 UJ		2 UJ
Dichlorodifluoromethane	75-71-8	--	1000	1 UJ	1700 U	1000 UJ	5 U	1000 UJ	13 U	10 UJ	5 U	200 UJ	5 U	50 UJ	5 U	1 UJ	1.5 J	4.1 J
Diethyl ether	60-29-7	--	--	1 UJ		1000 UJ		1000 UJ		10 UJ		200 UJ		50 UJ		1 UJ		2 UJ
Ethylbenzene	100-41-4	700	700	1 UJ	1700 U	1000 UJ	0.58 J	1000 UJ	13 U	10 UJ	5 U	200 UJ	5 U	50 UJ	5 U	1 UJ	5 U	2 UJ
Hexachlorobutadiene	87-68-3	--	--	1 UJ		1000 UJ		1000 UJ		10 UJ		200 UJ		50 UJ		1 UJ		2 UJ
Isopropylbenzene	98-82-8	--	--	1 UJ	1700 U	1000 UJ	5 U	1000 UJ	13 U	10 UJ	5 U	200 UJ	5 U	50 UJ	5 U	1 UJ	5 U	2 UJ
m,p-Xylene	179601-23-1	10000	10000	2 UJ	1700 U	2000 UJ	0.63 J	2000 UJ	13 U	20 UJ	5 U	400 UJ	5 U	100 UJ	5 U	2 UJ	5 U	4 UJ
Methyl Acetate	79-20-9	--	--		1700 U		5 U		13 U		5 U		5 U		5 U		5 U	
Methyl Tert-Butyl Ether	1634-04-4	--	40	1 UJ	1700 U	1000 UJ	5 U	1000 UJ	13 U	10 UJ	5 U	200 UJ	5 U	50 UJ	5 U	1 UJ	5 U	2 UJ
Methylcyclohexane	108-87-2	--	--		1700 U		5 U		13 U		5 U		5 U		5 U		5 U	
Methylene Chloride	75-09-2	**5**	**5**	1 UJ	1700 U	1000 UJ	5 U	1000 UJ	13 U	10 UJ	5 U	200 UJ	5 U	50 UJ	5 U	1 UJ	5 U	2 UJ
Naphthalene	91-20-3	--	--	1 UJ		1000 UJ		1000 UJ		10 UJ		200 UJ		50 UJ		1 UJ		2 UJ
n-Butylbenzene	104-51-8	--	--	1 UJ		1000 UJ		1000 UJ		10 UJ		200 UJ		50 UJ		1 UJ		2 UJ
n-Propylbenzene	103-65-1	--	--	1 UJ		1000 UJ		1000 UJ		10 UJ		200 UJ		50 UJ		1 UJ		2 UJ
o-Xylene	95-47-6	10000	10000	1 UJ	1700 U	1000 UJ	5 U	1000 UJ	13 U	10 UJ	0.48 J	200 UJ	5 U	50 UJ	5 U	1 UJ	5 U	2 UJ
Styrene	100-42-5	100	100	1 UJ	1700 U	1000 UJ	5 U	1000 UJ	13 U	10 UJ	5 U	200 UJ	5 U	50 UJ	5 U	1 UJ	5 U	2 UJ
Tetrachloroethene	127-18-4	**5**	**5**	1 UJ	1700 U	1000 UJ	3.5 J	1000 UJ	13 U	10 UJ	**28**	200 UJ	**25**	50 UJ	5 U	1 UJ	5 U	2 UJ
Tetrahydrofuran	109-99-9	--	--	1 UJ		1000 UJ		1000 UJ		10 UJ		200 UJ		50 UJ		1 UJ		2 UJ
Toluene	108-88-3	1000	1000	1 UJ	1700 U	1000 UJ	5 U	1000 UJ	13 U	10 UJ	5 U	200 UJ	5 U	50 UJ	5 U	1 UJ	5 U	2 UJ
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	1 UJ	1700 U	1000 UJ	0.97 J	1000 UJ	13 U	10 UJ	5 U	200 UJ	5 U	50 UJ	5 U	1 UJ	5 U	2 UJ
trans-1,3-Dichloropropene	10061-02-6	--	--	1 UJ	1700 U	1000 UJ	5 U	1000 UJ	13 U	10 UJ	5 U	200 UJ	5 U	50 UJ	5 U	1 UJ	5 U	2 UJ
Trichloroethene	79-01-6	**5**	**5**	1 UJ	**50000**	**47000 J**	**44000 D**	**34000 J**	**300**	**260 J**	**5600 D**	**7200 J**	**3400 D**	**4900 J**	**9.9**	**40 J**	**120**	**56 J**
Trichlorofluoromethane	75-69-4	--	2100	1 UJ	1700 U	1000 UJ	5 U	1000 UJ	13 U	10 UJ	5 U	200 UJ	5 U	50 UJ	5 U	1 UJ	5 U	2 UJ
Vinyl Acetate	108-05-4	--	--	1 UJ		1000 UJ		1000 UJ		10 UJ		200 UJ		50 UJ		1 UJ		2 UJ
Vinyl Chloride	75-01-4	**2**	**2**	1 UJ	1700 U	1000 UJ	**3.7 J**	1000 UJ	13 U	10 UJ	5 U	200 UJ	5 U	50 UJ	5 U	1 UJ	5 U	2 UJ

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MW-10D	MW-10D	MW-10D	MW-11S	MW-11S	OE-2A	OE-2A	OE-2A	OE-2B	OE-2B	OE-2B	OE-2B
			Sample ID	MW-010D-1110A	MW-10D-0612A	MW-DUP01-0612A	MW-011S-1110A	MW-11S-0612A	OE-02A-121708A	OE-02A-052010A	OE-002A-1110A	OE-02B-121708A	OE-02B-052010A	DUP-1110A	OE-002B-1110A
			Top Depth (feet below grade)												
			Bottom Depth (feet below grade)							35			35		
			Sample Date & Time	12/2/2010 1:25:00 PM	6/5/2012 2:55:00 PM	6/5/2012 3:00:00 PM	12/1/2010 10:20:00 AM	6/6/2012 2:55:00 PM	12/17/2008 2:20:00 PM	5/20/2010 12:05:00 PM	11/30/2010 1:55:00 PM	12/17/2008 2:35:00 PM	5/20/2010 12:05:00 PM	11/30/2010 2:10:00 PM	11/30/2010 2:05:00 PM
			Sample Type	N	N	FD	N	N	N	N	N	N	N	FD	N
			Field Duplicate Parent Sample			MW-10D-0612A								OE-002B-1110A	
			Result Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
1,1,1,2-Tetrachloroethane	630-20-6	--	--		1 UJ	1 UJ		1 UJ							
1,1,1-Trichloroethane	71-55-6	200	200	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,1,2-Trichloroethane	79-00-5	5	5	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,1-Dichloroethane	75-34-3	--	70	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,1-Dichloroethene	75-35-4	7	7	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,1-Dichloropropene	563-58-6	--	--		1 UJ	1 UJ		1 UJ							
1,2,3-Trichlorobenzene	87-61-6	--	--	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,2,3-Trichloropropane	96-18-4	--	--		1 UJ	1 UJ		1 UJ							
1,2,4-Trichlorobenzene	120-82-1	70	70	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,2,4-Trimethylbenzene	95-63-6	--	--		1 UJ	1 UJ		1 UJ							
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,2-Dibromoethane	106-93-4	0.05	--	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,2-Dichlorobenzene	95-50-1	600	600	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,2-Dichloroethane	107-06-2	**5**	**5**	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,2-Dichloropropane	78-87-5	**5**	**5**	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,3,5-Trimethylbenzene	108-67-8	--	--		1 UJ	1 UJ		1 UJ							
1,3-Dichlorobenzene	541-73-1	--	600	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,3-Dichloropropane	142-28-9	--	--		1 UJ	1 UJ		1 UJ							
1,4-Dichlorobenzene	106-46-7	75	75	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
1,4-Dioxane	123-91-1	--	--	100 U			100 U		100 U		100 U	100 U		100 U	100 U
2,2-Dichloropropane	594-20-7	--	--		1 UJ	1 UJ		1 UJ							
2-Butanone	78-93-3	--	4200	10 U	1 UJ	1 UJ	10 U	1 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U
2-Chlorotoluene	95-49-8	--	--		1 UJ	1 UJ		1 UJ							
2-Hexanone	591-78-6	--	--	10 U	1 UJ	1 UJ	10 U	1 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U
2-Methyl-2-phenylpropane	98-06-6	--	--		1 UJ	1 UJ		1 UJ							
2-Phenylbutane	135-98-8	--	--		1 UJ	1 UJ		1 UJ							
4-Chlorotoluene	106-43-4	--	--		1 UJ	1 UJ		1 UJ							
4-Methyl-2-Pentanone	108-10-1	--	--	10 U	1 UJ	1 UJ	10 U	1 UJ	10 U	5 U	10 U	10 U	5 U	10 U	10 U
Acetone	67-64-1	--	700	12	1 UJ	1 UJ	4.1 J	1 UJ	5.8	5 U	4.7 JB	6	5 U	4.7 J	10 U
Acrylonitrile	107-13-1	--	--		1 UJ	1 UJ		1 UJ							
Benzene	71-43-2	5	5	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Bromobenzene	108-86-1	--	--		1 UJ	1 UJ		1 UJ							
Bromochloromethane	74-97-5	--	90	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Bromodichloromethane	75-27-4	80	80	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Bromoform	75-25-2	80	--	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Bromomethane	74-83-9	--	10	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Carbon Disulfide	75-15-0	--	--	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Carbon Tetrachloride	56-23-5	5	5	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Chlorobenzene	108-90-7	100	100	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Chloroethane	75-00-3	--	--	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Chloroform	67-66-3	80	80	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Chloromethane	74-87-3	--	30	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
cis-1,3-Dichloropropene	10061-01-5	--	--	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Cyclohexane	110-82-7	--	--	5 U			5 U		5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Cymene	99-87-6	--	--		1 UJ	1 UJ		1 UJ							

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Monitoring Wells (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MW-10D	MW-10D	MW-10D	MW-11S	MW-11S	OE-2A	OE-2A	OE-2A	OE-2B	OE-2B	OE-2B	OE-2B
			Sample ID	MW-010D-1110A	MW-10D-0612A	MW-DUP01-0612A	MW-011S-1110A	MW-11S-0612A	OE-02A-121708A	OE-02A-052010A	OE-002A-1110A	OE-02B-121708A	OE-02B-052010A	DUP-1110A	OE-002B-1110A
			Top Depth (feet below grade)												
			Bottom Depth (feet below grade)							35			35		
			Sample Date & Time	12/2/2010 1:25:00 PM	6/5/2012 2:55:00 PM	6/5/2012 3:00:00 PM	12/1/2010 10:20:00 AM	6/6/2012 2:55:00 PM	12/17/2008 2:20:00 PM	5/20/2010 12:05:00 PM	11/30/2010 1:55:00 PM	12/17/2008 2:35:00 PM	5/20/2010 12:05:00 PM	11/30/2010 2:10:00 PM	11/30/2010 2:05:00 PM
			Sample Type	N	N	FD	N	N	N	N	N	N	N	FD	N
			Field Duplicate Parent Sample			MW-10D-0612A								OE-002B-1110A	
			Result Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual	Result Qual
Dibromochloromethane	124-48-1	80	80	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Dibromomethane	74-95-3	--	--		1 UJ	1 UJ		1 UJ							
Dichlorodifluoromethane	75-71-8	--	1000	2.2 J	4.1 J	4.2 J	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Diethyl ether	60-29-7	--	--		1 UJ	1 UJ		1 UJ							
Ethylbenzene	100-41-4	700	700	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Hexachlorobutadiene	87-68-3	--	--		1 UJ	1 UJ		1 UJ							
Isopropylbenzene	98-82-8	--	--	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
m,p-Xylene	179601-23-1	10000	10000	5 U	2 UJ	2 UJ	5 U	2 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Methyl Acetate	79-20-9	--	--	5 U			5 U		5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Methyl Tert-Butyl Ether	1634-04-4	--	40	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Methylcyclohexane	108-87-2	--	--	5 U			5 U		5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Methylene Chloride	75-09-2	**5**	**5**	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Naphthalene	91-20-3	--	--		1 UJ	1 UJ		1 UJ							
n-Butylbenzene	104-51-8	--	--		1 UJ	1 UJ		1 UJ							
n-Propylbenzene	103-65-1	--	--		1 UJ	1 UJ		1 UJ							
o-Xylene	95-47-6	10000	10000	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Styrene	100-42-5	100	100	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Tetrachloroethene	127-18-4	**5**	**5**	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Tetrahydrofuran	109-99-9	--	--		1 UJ	1 UJ		1 UJ							
Toluene	108-88-3	1000	1000	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
trans-1,3-Dichloropropene	10061-02-6	--	--	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Trichloroethene	79-01-6	**5**	**5**	**55**	**39 J**	**40.8 J**	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Trichlorofluoromethane	75-69-4	--	2100	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U
Vinyl Acetate	108-05-4	--	--		1 UJ	1 UJ		1 UJ							
Vinyl Chloride	75-01-4	**2**	**2**	5 U	1 UJ	1 UJ	5 U	1 UJ	5 U	0.5 U	5 U	5 U	0.5 U	5 U	5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Porewater Sample VOC Results (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	PW-01	PW-02	PW-03	PW-04	PW-05	PW-06	PW-07	PW-08	PW-09	PW-09	PW-10	PW-11	PW-12	PW-13	PW-14
			Sample ID	PW-01-072210AX	PW-02-072210AX	PW-03-072210AX	PW-04-072210AX	PW-05-072210AX	PW-06-072210AX	PW-07-072210AX	PW-08-072210AX	PW-09-072210AD	PW-09-072210AX	PW-10-072210AX	PW-11-072210AX	PW-12-072210AX	PW-13-072210AX	PW-14-072210AX
			Sample Date & Time	7/22/2010 10:35:00 AM	7/22/2010 11:10:00 AM	7/22/2010 11:20:00 AM	7/22/2010 11:35:00 AM	7/22/2010 1:00:00 PM	7/22/2010 1:30:00 PM	7/22/2010 1:45:00 PM	7/22/2010 2:07:00 PM	7/22/2010 2:17:00 PM	7/22/2010 2:15:00 PM	7/22/2010 2:20:00 PM	7/22/2010 2:35:00 PM	7/22/2010 3:25:00 PM	7/22/2010 3:45:00 PM	7/22/2010 4:00:00 PM
			Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
			Field Duplicate Parent Sample									PW-09-072210AX						
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**															
1,1,1,2-Tetrachloroethane	630-20-6	--	--															
1,1,1-Trichloroethane	71-55-6	200	200	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,1,2-Trichloroethane	79-00-5	5	5	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,1-Dichloroethane	75-34-3	--	70	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,1-Dichloroethene	75-35-4	7	7	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,1-Dichloropropene	563-58-6	--	--															
1,2,3-Trichlorobenzene	87-61-6	--	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,2,3-Trichloropropane	96-18-4	--	--															
1,2,4-Trichlorobenzene	120-82-1	70	70	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	95-63-6	--	--															
1,2-Dibromo-3-Chloropropane	96-12-8	0.2	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,2-Dibromoethane	106-93-4	0.05	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,2-Dichlorobenzene	95-50-1	600	600	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,2-Dichloroethane	107-06-2	5	5	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,2-Dichloropropane	78-87-5	5	5	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	108-67-8	--	--															
1,3-Dichlorobenzene	541-73-1	--	600	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,3-Dichloropropane	142-28-9	--	--															
1,4-Dichlorobenzene	106-46-7	75	75	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
1,4-Dioxane	123-91-1	--	--	100 U	100 U	100 U	100 U	100 U	200 U	100 U	100 U	100 U	100 U	100 U	400 U	100 U	100 U	100 U
2,2-Dichloropropane	594-20-7	--	--															
2-Butanone	78-93-3	--	4200	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U
2-Chlorotoluene	95-49-8	--	--															
2-Hexanone	591-78-6	--	--	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U
2-Methyl-2-phenylpropane	98-06-6	--	--															
2-Phenylbutane	135-98-8	--	--															
4-Chlorotoluene	106-43-4	--	--															
4-Methyl-2-Pentanone	108-10-1	--	--	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U
Acetone	67-64-1	--	700	10 U	10 U	10 U	10 U	10 U	20 U	10 U	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U
Acrylonitrile	107-13-1	--	--															
Benzene	71-43-2	5	5	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Bromobenzene	108-86-1	--	--															
Bromochloromethane	74-97-5	--	90	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Bromodichloromethane	75-27-4	80	80	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Bromoform	75-25-2	80	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Bromomethane	74-83-9	--	10	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Carbon Disulfide	75-15-0	--	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Carbon Tetrachloride	56-23-5	5	5	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Chlorobenzene	108-90-7	100	100	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Chloroethane	75-00-3	--	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Chloroform	67-66-3	80	80	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Chloromethane	74-87-3	--	30	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	5 U	5 U	5 U	5 U	5 U	**830 D**	13	**260 D**	**120**	**210 D**	21	**1700 D**	5 U	5 U	5 U
cis-1,3-Dichloropropene	10061-01-5	--	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Cyclohexane	110-82-7	--	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Cymene	99-87-6	--	--															
Dibromochloromethane	124-48-1	80	80	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Dibromomethane	74-95-3	--	--															
Dichlorodifluoromethane	75-71-8	--	1000	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U

Appendix D-1
Analytical Data Summary
Porewater Sample VOC Results (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	PW-01	PW-02	PW-03	PW-04	PW-05	PW-06	PW-07	PW-08	PW-09	PW-09	PW-10	PW-11	PW-12	PW-13	PW-14
			Sample ID	PW-01-072210AX	PW-02-072210AX	PW-03-072210AX	PW-04-072210AX	PW-05-072210AX	PW-06-072210AX	PW-07-072210AX	PW-08-072210AX	PW-09-072210AD	PW-09-072210AX	PW-10-072210AX	PW-11-072210AX	PW-12-072210AX	PW-13-072210AX	PW-14-072210AX
			Sample Date & Time	7/22/2010 10:35:00 AM	7/22/2010 11:10:00 AM	7/22/2010 11:20:00 AM	7/22/2010 11:35:00 AM	7/22/2010 1:00:00 PM	7/22/2010 1:30:00 PM	7/22/2010 1:45:00 PM	7/22/2010 2:07:00 PM	7/22/2010 2:17:00 PM	7/22/2010 2:15:00 PM	7/22/2010 2:20:00 PM	7/22/2010 2:35:00 PM	7/22/2010 3:25:00 PM	7/22/2010 3:45:00 PM	7/22/2010 4:00:00 PM
			Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
			Field Duplicate Parent Sample									PW-09-072210AX						
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**															
Diethyl ether	60-29-7	--	--															
Ethylbenzene	100-41-4	700	700	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Hexachlorobutadiene	87-68-3	--	--															
Isopropylbenzene	98-82-8	--	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
m,p-Xylene	179601-23-1	10000	10000	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Methyl Acetate	79-20-9	--	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Methyl Tert-Butyl Ether	1634-04-4	--	40	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Methylcyclohexane	108-87-2	--	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Methylene Chloride	75-09-2	**5**	**5**	3.7 JB	3.8 JB	4.1 JB	4.2 JB	4.7 JB	**8.3 JB**	3.6 JB	4.9 JB	2.8 JB	5 U	5 U	**13 JB**	5 U	5 U	2.7 JB
Naphthalene	91-20-3	--	--															
n-Butylbenzene	104-51-8	--	--															
n-Propylbenzene	103-65-1	--	--															
o-Xylene	95-47-6	10000	10000	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Styrene	100-42-5	100	100	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Tetrachloroethene	127-18-4	5	5	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Tetrahydrofuran	109-99-9	--	--															
Toluene	108-88-3	1000	1000	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	156-60-5	100	100	5 U	5 U	5 U	5 U	5 U	8.8 J	5 U	5 U	5 U	5 U	5 U	10 J	5 U	5 U	5 U
trans-1,3-Dichloropropene	10061-02-6	--	--	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Trichloroethene	79-01-6	**5**	**5**	5 U	5 U	5 U	3.7 J	5 U	**9.1 J**	5 U	**41**	5 U	5 U	5 U	**1100 D**	5 U	5 U	5 U
Trichlorofluoromethane	75-69-4	--	2100	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	20 U	5 U	5 U	5 U
Vinyl Acetate	108-05-4	--	--															
Vinyl Chloride	75-01-4	**2**	**2**	5 U	5 U	5 U	5 U	5 U	10 U	**88**	**4.2 J**	**170**	**180**	5 U	**33**	5 U	5 U	5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Porewater Sample VOC Results (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	PW-15	PW-16	PW-17	PW-18	PW-19	PW-20
			Sample ID	PW-15-072210AX	PW-16-072210AX	PW-17-072210AX	PW-18-072210AX	PW-19-072210AX	PW-20-072210AX
			Sample Date & Time	7/22/2010 4:20:00 PM	7/22/2010 4:30:00 PM	7/22/2010 4:55:00 PM	7/22/2010 5:10:00 PM	7/22/2010 5:31:00 PM	7/22/2010 5:45:00 PM
			Sample Type	N	N	N	N	N	N
			Field Duplicate Parent Sample						
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**						
1,1,1,2-Tetrachloroethane	630-20-6	--	--						
1,1,1-Trichloroethane	71-55-6	200	200	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	79-00-5	5	5	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	75-34-3	--	70	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	75-35-4	7	7	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloropropene	563-58-6	--	--						
1,2,3-Trichlorobenzene	87-61-6	--	--	5 U	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	96-18-4	--	--						
1,2,4-Trichlorobenzene	120-82-1	70	70	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	95-63-6	--	--						
1,2-Dibromo-3-Chloropropane	96-12-8	0.2	--	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	106-93-4	0.05	--	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	95-50-1	600	600	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	107-06-2	5	5	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	78-87-5	5	5	5 U	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	108-67-8	--	--						
1,3-Dichlorobenzene	541-73-1	--	600	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	142-28-9	--	--						
1,4-Dichlorobenzene	106-46-7	75	75	5 U	5 U	5 U	5 U	5 U	5 U
1,4-Dioxane	123-91-1	--	--	100 U	100 U	100 U	100 U	100 U	100 U
2,2-Dichloropropane	594-20-7	--	--						
2-Butanone	78-93-3	--	4200	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorotoluene	95-49-8	--	--						
2-Hexanone	591-78-6	--	--	10 U	10 U	10 U	10 U	10 U	10 U
2-Methyl-2-phenylpropane	98-06-6	--	--						
2-Phenylbutane	135-98-8	--	--						
4-Chlorotoluene	106-43-4	--	--						
4-Methyl-2-Pentanone	108-10-1	--	--	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	67-64-1	--	700	10 U	10 U	10 U	10 U	10 U	10 U
Acrylonitrile	107-13-1	--	--						
Benzene	71-43-2	5	5	5 U	5 U	5 U	5 U	5 U	5 U
Bromobenzene	108-86-1	--	--						
Bromochloromethane	74-97-5	--	90	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	75-27-4	80	80	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	75-25-2	80	--	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	74-83-9	--	10	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Disulfide	75-15-0	--	--	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	56-23-5	5	5	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	108-90-7	100	100	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	75-00-3	--	--	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	67-66-3	80	80	5 U	5 U	5 U	5 U	5 U	5 U
Chloromethane	74-87-3	--	30	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	4.9 J	**270 D**	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	10061-01-5	--	--	5 U	5 U	5 U	5 U	5 U	5 U
Cyclohexane	110-82-7	--	--	5 U	5 U	5 U	5 U	5 U	5 U
Cymene	99-87-6	--	--						
Dibromochloromethane	124-48-1	80	80	5 U	5 U	5 U	5 U	5 U	5 U
Dibromomethane	74-95-3	--	--						
Dichlorodifluoromethane	75-71-8	--	1000	5 U	5 U	5 U	5 U	5 U	5 U

Appendix D-1
Analytical Data Summary
Porewater Sample VOC Results (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	PW-15	PW-16	PW-17	PW-18	PW-19	PW-20
			Sample ID	PW-15-072210AX	PW-16-072210AX	PW-17-072210AX	PW-18-072210AX	PW-19-072210AX	PW-20-072210AX
			Sample Date & Time	7/22/2010 4:20:00 PM	7/22/2010 4:30:00 PM	7/22/2010 4:55:00 PM	7/22/2010 5:10:00 PM	7/22/2010 5:31:00 PM	7/22/2010 5:45:00 PM
			Sample Type	N	N	N	N	N	N
			Field Duplicate Parent Sample						
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**						
Diethyl ether	60-29-7	--	--						
Ethylbenzene	100-41-4	700	700	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorobutadiene	87-68-3	--	--						
Isopropylbenzene	98-82-8	--	--	5 U	5 U	5 U	5 U	5 U	5 U
m,p-Xylene	179601-23-1	10000	10000	5 U	5 U	5 U	5 U	5 U	5 U
Methyl Acetate	79-20-9	--	--	5 U	5 U	5 U	5 U	5 U	5 U
Methyl Tert-Butyl Ether	1634-04-4	--	40	5 U	5 U	5 U	5 U	5 U	5 U
Methylcyclohexane	108-87-2	--	--	5 U	5 U	5 U	5 U	5 U	5 U
Methylene Chloride	75-09-2	**5**	**5**	3 JB	2.5 JB	3.4 JB	5 U	**5.6 B**	5 JB
Naphthalene	91-20-3	--	--						
n-Butylbenzene	104-51-8	--	--						
n-Propylbenzene	103-65-1	--	--						
o-Xylene	95-47-6	10000	10000	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100-42-5	100	100	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	127-18-4	5	5	5 U	5 U	5 U	5 U	5 U	5 U
Tetrahydrofuran	109-99-9	--	--						
Toluene	108-88-3	1000	1000	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	156-60-5	100	100	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	10061-02-6	--	--	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	79-01-6	**5**	**5**	5 U	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	75-69-4	--	2100	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Acetate	108-05-4	--	--						
Vinyl Chloride	75-01-4	**2**	**2**	5 U	**64**	5 U	5 U	5 U	5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Profiling Locations (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-01	VP-03	VP-04	VP-05	VP-06	VP-07	VP-08	VP-09	VP-09	VP-10	VP-11	VP-12	VP-13	VP-14	VP-14
			Sample ID	VP-0140-082310AX	VP-0325-071510AX	VP-0440-071310AX	VP-0520-071410AX	VP-0635-071410AX	VP-0730-071410AX	VP-0835-071210AX	VP-0940-071510AD	VP-0940-071510AX	VP-1040-071510AX	VP-1135-071910AX	VP-1230-072010AX	VP-1340-071610AX	VP-1415-071910AX	VP-1440-071910AX
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)	40	25	40	20	35	30	35	40	40	40	35	30	40	15	40
			Sample Date & Time	8/23/2010 1:15:00 PM	7/15/2010 9:05:00 AM	7/13/2010 3:45:00 PM	7/14/2010 11:15:00 AM	7/14/2010 9:35:00 AM	7/14/2010 3:55:00 PM	7/12/2010 3:00:00 PM	7/15/2010 1:25:00 PM	7/15/2010 1:20:00 PM	7/15/2010 4:45:00 PM	7/19/2010 3:15:00 PM	7/20/2010 9:30:00 AM	7/16/2010 10:00:00 AM	7/19/2010 4:25:00 PM	7/19/2010 6:05:00 PM
			Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
			Field Duplicate Parent Sample								VP-0940-071510AX							
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**															
1,1,1,2-Tetrachloroethane	630-20-6	--	--															
1,1,1-Trichloroethane	71-55-6	200	200	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,1,2-Trichloroethane	79-00-5	5	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,1-Dichloroethane	75-34-3	--	70	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,1-Dichloroethene	75-35-4	7	7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,1-Dichloropropene	563-58-6	--	--															
1,2,3-Trichlorobenzene	87-61-6	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,2,3-Trichloropropane	96-18-4	--	--															
1,2,4-Trichlorobenzene	120-82-1	70	70	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,2,4-Trimethylbenzene	95-63-6	--	--															
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,2-Dibromoethane	106-93-4	0.05	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,2-Dichlorobenzene	95-50-1	600	600	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,2-Dichloroethane	107-06-2	**5**	**5**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,2-Dichloropropane	78-87-5	**5**	**5**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,3,5-Trimethylbenzene	108-67-8	--	--															
1,3-Dichlorobenzene	541-73-1	--	600	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,3-Dichloropropane	142-28-9	--	--															
1,4-Dichlorobenzene	106-46-7	75	75	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
1,4-Dioxane	123-91-1	--	--	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	370 U	160 U	340 U	100 U	1300 U
2,2-Dichloropropane	594-20-7	--	--															
2-Butanone	78-93-3	--	4200	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	37 U	16 U	34 U	10 U	130 U
2-Chlorotoluene	95-49-8	--	--															
2-Hexanone	591-78-6	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	37 U	16 U	34 U	10 U	130 U
2-Methyl-2-phenylpropane	98-06-6	--	--															
2-Phenylbutane	135-98-8	--	--															
4-Chlorotoluene	106-43-4	--	--															
4-Methyl-2-Pentanone	108-10-1	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	37 U	16 U	34 U	10 U	130 U
Acetone	67-64-1	--	700	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	37 U	16 U	34 U	10 U	130 U
Acrylonitrile	107-13-1	--	--															
Benzene	71-43-2	5	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Bromobenzene	108-86-1	--	--															
Bromochloromethane	74-97-5	--	90	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Bromodichloromethane	75-27-4	80	80	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Bromoform	75-25-2	80	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Bromomethane	74-83-9	--	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Carbon Disulfide	75-15-0	--	--	1.2 J	5 U	0.93 J	5 U	5 U	5 U	5 U	5 U	5 U	0.96 J	19 U	8 U	17 U	5 U	67 U
Carbon Tetrachloride	56-23-5	5	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Chlorobenzene	108-90-7	100	100	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Chloroethane	75-00-3	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Chloroform	67-66-3	80	80	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Chloromethane	74-87-3	--	30	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	5 U	5 U	5 U	5 U	5 U	1 J	5 U	5 U	5 U	5 U	8.1 J	4.4 J	4.5 J	5 U	15 J
cis-1,3-Dichloropropene	10061-01-5	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Cyclohexane	110-82-7	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Cymene	99-87-6	--	--															
Dibromochloromethane	124-48-1	80	80	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Dibromomethane	74-95-3	--	--															

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Profiling Locations (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-01	VP-03	VP-04	VP-05	VP-06	VP-07	VP-08	VP-09	VP-09	VP-10	VP-11	VP-12	VP-13	VP-14	VP-14
			Sample ID	VP-0140-082310AX	VP-0325-071510AX	VP-0440-071310AX	VP-0520-071410AX	VP-0635-071410AX	VP-0730-071410AX	VP-0835-071210AX	VP-0940-071510AD	VP-0940-071510AX	VP-1040-071510AX	VP-1135-071910AX	VP-1230-072010AX	VP-1340-071610AX	VP-1415-071910AX	VP-1440-071910AX
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)	40	25	40	20	35	30	35	40	40	40	35	30	40	15	40
			Sample Date & Time	8/23/2010 1:15:00 PM	7/15/2010 9:05:00 AM	7/13/2010 3:45:00 PM	7/14/2010 11:15:00 AM	7/14/2010 9:35:00 AM	7/14/2010 3:55:00 PM	7/12/2010 3:00:00 PM	7/15/2010 1:25:00 PM	7/15/2010 1:20:00 PM	7/15/2010 4:45:00 PM	7/19/2010 3:15:00 PM	7/20/2010 9:30:00 AM	7/16/2010 10:00:00 AM	7/19/2010 4:25:00 PM	7/19/2010 6:05:00 PM
			Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
			Field Duplicate Parent Sample								VP-0940-071510AX							
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**															
Dichlorodifluoromethane	75-71-8	--	1000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Diethyl ether	60-29-7	--	--															
Ethylbenzene	100-41-4	700	700	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Hexachlorobutadiene	87-68-3	--	--															
Isopropylbenzene	98-82-8	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
m,p-Xylene	179601-23-1	10000	10000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Methyl Acetate	79-20-9	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Methyl Tert-Butyl Ether	1634-04-4	--	40	5 U	5 U	5 U	5 U	4.8 J	3.2 J	3.6 J	5 U	5 U	3.1 J	19 U	8 U	17 U	5 U	67 U
Methylcyclohexane	108-87-2	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Methylene Chloride	75-09-2	**5**	**5**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Naphthalene	91-20-3	--	--															
n-Butylbenzene	104-51-8	--	--															
n-Propylbenzene	103-65-1	--	--															
o-Xylene	95-47-6	10000	10000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Styrene	100-42-5	100	100	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Tetrachloroethene	127-18-4	**5**	**5**	5 U	5 U	5 U	5 U	0.98 J	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Tetrahydrofuran	109-99-9	--	--															
Toluene	108-88-3	1000	1000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
trans-1,3-Dichloropropene	10061-02-6	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Trichloroethene	79-01-6	**5**	**5**	**230 D**	2.1 J	**130**	**7.1**	**130**	**25**	**58**	**190**	**190**	**210 D**	**1800 D**	**700 D**	**2000 D**	5 U	**7400 D**
Trichlorofluoromethane	75-69-4	--	2100	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U
Vinyl Acetate	108-05-4	--	--															
Vinyl Chloride	75-01-4	**2**	**2**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	19 U	8 U	17 U	5 U	67 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Profiling Locations (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-15	VP-16	VP-17	VP-18	VP-18	VP-19	VP-20	VP-21	VP-22	VP-23	VP-24	VP-29	VP-30	VP-31	VP-31
			Sample ID	VP-1540-071610AX	VP-1640-071610AX	VP-1735-071910AX	VP-1835-082410AD	VP-1835-082410AX	VP-1935-072010AX	VP-2035-072010AX	VP-2115-082510AX	VP-2235-072110AX	VP-2330-072110AX	VP-2415-082410AX	VP-2930-072210AX	VP-3020-072210AX	VP-3140-072310AD	VP-3140-072310AX
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)	40	40	35	35	35	35	35	15	35	30	15	30	20	40	40
			Sample Date & Time	7/16/2010 1:45:00 PM	7/16/2010 6:05:00 PM	7/19/2010 10:40:00 AM	8/24/2010 11:00:00 AM	8/24/2010 10:55:00 AM	7/20/2010 12:15:00 PM	7/20/2010 6:05:00 PM	8/25/2010 8:15:00 AM	7/21/2010 11:05:00 AM	7/21/2010 2:55:00 PM	8/24/2010 11:15:00 AM	7/22/2010 2:55:00 PM	7/22/2010 9:10:00 AM	7/23/2010 9:30:00 AM	7/23/2010 9:25:00 AM
			Sample Type	N	N	N	FD	N	N	N	N	N	N	N	N	N	FD	N
			Field Duplicate Parent Sample				VP-1835-082410AX										VP-3140-072310AX	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**															
1,1,1,2-Tetrachloroethane	630-20-6	--	--															
1,1,1-Trichloroethane	71-55-6	200	200	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	79-00-5	5	5	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	75-34-3	--	70	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	75-35-4	7	7	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloropropene	563-58-6	--	--															
1,2,3-Trichlorobenzene	87-61-6	--	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	96-18-4	--	--															
1,2,4-Trichlorobenzene	120-82-1	70	70	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	95-63-6	--	--															
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	106-93-4	0.05	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	95-50-1	600	600	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	107-06-2	**5**	**5**	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	78-87-5	**5**	**5**	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	108-67-8	--	--															
1,3-Dichlorobenzene	541-73-1	--	600	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	142-28-9	--	--															
1,4-Dichlorobenzene	106-46-7	75	75	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
1,4-Dioxane	123-91-1	--	--	4600 U	12000 U	880 U	100 U	100 U	6300 U	8800 U	100 U	3400 U	100 U	100 U	100 U	100 U	100 U	100 U
2,2-Dichloropropane	594-20-7	--	--															
2-Butanone	78-93-3	--	4200	460 U	1200 U	88 U	10 U	10 U	630 U	880 U	10 U	340 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorotoluene	95-49-8	--	--															
2-Hexanone	591-78-6	--	--	460 U	1200 U	88 U	10 U	10 U	630 U	880 U	10 U	340 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methyl-2-phenylpropane	98-06-6	--	--															
2-Phenylbutane	135-98-8	--	--															
4-Chlorotoluene	106-43-4	--	--															
4-Methyl-2-Pentanone	108-10-1	--	--	460 U	1200 U	88 U	10 U	10 U	630 U	880 U	10 U	340 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	67-64-1	--	700	460 U	1200 U	88 U	10 U	10 U	630 U	880 U	10 U	340 U	10 U	10 U	10 U	10 U	10 U	10 U
Acrylonitrile	107-13-1	--	--															
Benzene	71-43-2	5	5	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromobenzene	108-86-1	--	--															
Bromochloromethane	74-97-5	--	90	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	75-27-4	80	80	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	75-25-2	80	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	74-83-9	--	10	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Disulfide	75-15-0	--	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	56-23-5	5	5	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	108-90-7	100	100	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	75-00-3	--	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	67-66-3	80	80	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloromethane	74-87-3	--	30	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	42 J	580 U	12 J	29	31	**110 J**	**450**	5 U	**18000 D**	1.9 J	4.2 J	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	10061-01-5	--	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Cyclohexane	110-82-7	--	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Cymene	99-87-6	--	--															
Dibromochloromethane	124-48-1	80	80	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibromomethane	74-95-3	--	--															

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Profiling Locations (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-15	VP-16	VP-17	VP-18	VP-18	VP-19	VP-20	VP-21	VP-22	VP-23	VP-24	VP-29	VP-30	VP-31	VP-31
			Sample ID	VP-1540-071610AX	VP-1640-071610AX	VP-1735-071910AX	VP-1835-082410AD	VP-1835-082410AX	VP-1935-072010AX	VP-2035-072010AX	VP-2115-082510AX	VP-2235-072110AX	VP-2330-072110AX	VP-2415-082410AX	VP-2930-072210AX	VP-3020-072210AX	VP-3140-072310AD	VP-3140-072310AX
			Top Depth (feet below grade)															
			Bottom Depth (feet below grade)	40	40	35	35	35	35	35	15	35	30	15	30	20	40	40
			Sample Date & Time	7/16/2010 1:45:00 PM	7/16/2010 6:05:00 PM	7/19/2010 10:40:00 AM	8/24/2010 11:00:00 AM	8/24/2010 10:55:00 AM	7/20/2010 12:15:00 PM	7/20/2010 6:05:00 PM	8/25/2010 8:15:00 AM	7/21/2010 11:05:00 AM	7/21/2010 2:55:00 PM	8/24/2010 11:15:00 AM	7/22/2010 2:55:00 PM	7/22/2010 9:10:00 AM	7/23/2010 9:30:00 AM	7/23/2010 9:25:00 AM
			Sample Type	N	N	N	FD	N	N	N	N	N	N	N	N	N	FD	N
			Field Duplicate Parent Sample				VP-1835-082410AX										VP-3140-072310AX	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**															
Dichlorodifluoromethane	75-71-8	--	1000	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Diethyl ether	60-29-7	--	--															
Ethylbenzene	100-41-4	700	700	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorobutadiene	87-68-3	--	--															
Isopropylbenzene	98-82-8	--	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
m,p-Xylene	179601-23-1	10000	10000	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl Acetate	79-20-9	--	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl Tert-Butyl Ether	1634-04-4	--	40	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	3.2 J	5 U	5 U	5 U	5 U	5 U
Methylcyclohexane	108-87-2	--	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylene Chloride	75-09-2	**5**	**5**	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	91-20-3	--	--															
n-Butylbenzene	104-51-8	--	--															
n-Propylbenzene	103-65-1	--	--															
o-Xylene	95-47-6	10000	10000	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	100-42-5	100	100	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	127-18-4	**5**	**5**	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	**21**	5 U	5 U	5 U	5 U
Tetrahydrofuran	109-99-9	--	--															
Toluene	108-88-3	1000	1000	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	**120 J**	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	10061-02-6	--	--	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	79-01-6	**5**	**5**	**28000 D**	**75000 D**	**5000 D**	**9200 D**	**6200 D**	**40000 D**	**54000 D**	5 U	**31 J**	**350 D**	**960 D**	3.7 J	0.96 J	**15**	**16**
Trichlorofluoromethane	75-69-4	--	2100	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl Acetate	108-05-4	--	--															
Vinyl Chloride	75-01-4	**2**	**2**	230 U	580 U	44 U	5 U	5 U	310 U	440 U	5 U	170 U	5 U	5 U	5 U	5 U	5 U	5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Profiling Locations (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-33	VP-34	VP-35	VP-36	VP-36	VP-36	VP-36	VP-36	VP-36	VP-37	VP-38	VP-39	VP-40	VP-42	VP-43
			Sample ID	VP-3315A	VP-3415A	VP-3520A	VP-3615A	VP-3620A	VP-3625A	VP-3630A	VP-3635A	VP-3638A	VP-3720A	VP-3820A	VP-3930A	VP-4025A	VP-4235A	VP-4330A
			Top Depth (feet below grade)	15			15	20	25	30	35	38	20	20	30	25	35	30
			Bottom Depth (feet below grade)	15	15	20	15	20	25	30	35	38	20	20	30	25	35	30
			Sample Date & Time	8/18/2011 8:50:00 AM	8/25/2011	8/25/2011	8/22/2011 8:00:00 AM	8/22/2011 8:30:00 AM	8/22/2011 8:55:00 AM	8/22/2011 9:40:00 AM	8/22/2011 10:00:00 AM	8/22/2011 10:45:00 AM	8/23/2011 1:10:00 PM	8/23/2011 8:30:00 AM	8/19/2011	8/24/2011 9:20:00 AM	8/16/2011 3:45:00 PM	8/16/2011 9:40:00 AM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample															
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**															
1,1,1,2-Tetrachloroethane	630-20-6	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,1,1-Trichloroethane	71-55-6	200	200	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	5	5	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	--	70	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	7	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,1-Dichloropropene	563-58-6	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	87-61-6	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,2,3-Trichloropropane	96-18-4	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	120-82-1	70	70	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	95-63-6	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,2-Dibromoethane	106-93-4	0.05	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,2-Dichlorobenzene	95-50-1	600	600	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	**5**	**5**	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	**5**	**5**	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	108-67-8	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,3-Dichlorobenzene	541-73-1	--	600	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,3-Dichloropropane	142-28-9	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,4-Dichlorobenzene	106-46-7	75	75	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
1,4-Dioxane	123-91-1	--	--															
2,2-Dichloropropane	594-20-7	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
2-Butanone	78-93-3	--	4200	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
2-Chlorotoluene	95-49-8	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
2-Hexanone	591-78-6	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
2-Methyl-2-phenylpropane	98-06-6	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
2-Phenylbutane	135-98-8	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
4-Chlorotoluene	106-43-4	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	108-10-1	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Acetone	67-64-1	--	700	1.7	1.3	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1.2	1 U	1 U
Acrylonitrile	107-13-1	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Benzene	71-43-2	5	5	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Bromobenzene	108-86-1	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Bromochloromethane	74-97-5	--	90	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Bromodichloromethane	75-27-4	80	80	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Bromoform	75-25-2	80	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Bromomethane	74-83-9	--	10	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Carbon Tetrachloride	56-23-5	5	5	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	100	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Chloroethane	75-00-3	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Chloroform	67-66-3	80	80	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Chloromethane	74-87-3	--	30	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	1 U	1 U	1 U	10 U	1	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	10061-01-5	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Cyclohexane	110-82-7	--	--															
Cymene	99-87-6	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Dibromochloromethane	124-48-1	80	80	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Dibromomethane	74-95-3	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Profiling Locations (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-33	VP-34	VP-35	VP-36	VP-36	VP-36	VP-36	VP-36	VP-36	VP-37	VP-38	VP-39	VP-40	VP-42	VP-43
			Sample ID	VP-3315A	VP-3415A	VP-3520A	VP-3615A	VP-3620A	VP-3625A	VP-3630A	VP-3635A	VP-3638A	VP-3720A	VP-3820A	VP-3930A	VP-4025A	VP-4235A	VP-4330A
			Top Depth (feet below grade)	15			15	20	25	30	35	38	20	20	30	25	35	30
			Bottom Depth (feet below grade)	15	15	20	15	20	25	30	35	38	20	20	30	25	35	30
			Sample Date & Time	8/18/2011 8:50:00 AM	8/25/2011	8/25/2011	8/22/2011 8:00:00 AM	8/22/2011 8:30:00 AM	8/22/2011 8:55:00 AM	8/22/2011 9:40:00 AM	8/22/2011 10:00:00 AM	8/22/2011 10:45:00 AM	8/23/2011 1:10:00 PM	8/23/2011 8:30:00 AM	8/19/2011	8/24/2011 9:20:00 AM	8/16/2011 3:45:00 PM	8/16/2011 9:40:00 AM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample															
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**															
Dichlorodifluoromethane	75-71-8	--	1000	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Diethyl ether	60-29-7	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	700	700	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Hexachlorobutadiene	87-68-3	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Isopropylbenzene	98-82-8	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
m,p-Xylene	179601-23-1	10000	10000	2 U	2 U	2 U	20 U	2 U	40 U	500 U	100 U	40 U	2 U	100 U	40 U	2 U	2 U	2 U
Methyl Acetate	79-20-9	--	--															
Methyl Tert-Butyl Ether	1634-04-4	--	40	1 U	1 U	1 U	10 U	1.4	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Methylcyclohexane	108-87-2	--	--															
Methylene Chloride	75-09-2	**5**	**5**	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Naphthalene	91-20-3	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
n-Butylbenzene	104-51-8	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
n-Propylbenzene	103-65-1	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
o-Xylene	95-47-6	10000	10000	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Styrene	100-42-5	100	100	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	**5**	**5**	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Tetrahydrofuran	109-99-9	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Toluene	108-88-3	1000	1000	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Trichloroethene	79-01-6	**5**	**5**	1 U	1 U	1 U	**380**	**11**	**740**	**13000**	**3600**	**770**	1 U	**2300**	**1300**	**100**	**51**	**64**
Trichlorofluoromethane	75-69-4	--	2100	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Vinyl Acetate	108-05-4	--	--	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U
Vinyl Chloride	75-01-4	**2**	**2**	1 U	1 U	1 U	10 U	1 U	20 U	250 U	50 U	20 U	1 U	50 U	20 U	1 U	1 U	1 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Profiling Locations (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-44	VP-45	VP-45	VP-45	VP-47	VP-48	VP-49	VP-50	VP-52	VP-53	VP-54	VP-54	VP-54	VP-54	VP-54
			Sample ID	VP-4430A	DUP01-0811A	VP-4515A	VP-4530A	VP-4740A	VP-4830A	VP-4925A	VP-5025A	VP-5225A	VP-5340A	DUP03-0822A	VP-5415A	VP-5420A	VP-5425A	VP-5430A
			Top Depth (feet below grade)		15	15	30	40	30	25		25	40	30	15	20	25	30
			Bottom Depth (feet below grade)	30	15	15	30	40	30	25	25	25	40	30	15	20	25	30
			Sample Date & Time	8/26/2011 9:10:00 AM	8/17/2011 8:25:00 AM	8/17/2011 8:15:00 AM	8/17/2011 9:50:00 AM	8/17/2011 2:40:00 PM	8/30/2011 10:35:00 AM	8/29/2011 2:35:00 PM	8/26/2011 12:10:00 PM	8/30/2011 4:00:00 PM	8/24/2011 2:20:00 PM	8/22/2011 1:35:00 PM	8/22/2011 11:45:00 AM	8/22/2011 12:20:00 PM	8/22/2011 12:40:00 PM	8/22/2011 1:30:00 PM
			Sample Type	N	FD	N	N	N	N	N	N	N	N	FD	N	N	N	N
			Field Duplicate Parent Sample		VP-4515A									VP-5430A				
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**															
1,1,1,2-Tetrachloroethane	630-20-6	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,1,1-Trichloroethane	71-55-6	200	200	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,1,2-Trichloroethane	79-00-5	5	5	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,1-Dichloroethane	75-34-3	--	70	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,1-Dichloroethene	75-35-4	7	7	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,1-Dichloropropene	563-58-6	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,2,3-Trichlorobenzene	87-61-6	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,2,3-Trichloropropane	96-18-4	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,2,4-Trichlorobenzene	120-82-1	70	70	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,2,4-Trimethylbenzene	95-63-6	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,2-Dibromoethane	106-93-4	0.05	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,2-Dichlorobenzene	95-50-1	600	600	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,2-Dichloroethane	107-06-2	**5**	**5**	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,2-Dichloropropane	78-87-5	**5**	**5**	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,3,5-Trimethylbenzene	108-67-8	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,3-Dichlorobenzene	541-73-1	--	600	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,3-Dichloropropane	142-28-9	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,4-Dichlorobenzene	106-46-7	75	75	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
1,4-Dioxane	123-91-1	--	--															
2,2-Dichloropropane	594-20-7	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
2-Butanone	78-93-3	--	4200	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
2-Chlorotoluene	95-49-8	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
2-Hexanone	591-78-6	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
2-Methyl-2-phenylpropane	98-06-6	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
2-Phenylbutane	135-98-8	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
4-Chlorotoluene	106-43-4	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
4-Methyl-2-Pentanone	108-10-1	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Acetone	67-64-1	--	700	1 U	20 U	20 U	1.4	1.3	50 U	1 U	20 U	1.1	1 U	100 U	1 U	1 U	1 U	100 U
Acrylonitrile	107-13-1	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Benzene	71-43-2	5	5	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Bromobenzene	108-86-1	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Bromochloromethane	74-97-5	--	90	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Bromodichloromethane	75-27-4	80	80	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Bromoform	75-25-2	80	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Bromomethane	74-83-9	--	10	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Carbon Disulfide	75-15-0	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Carbon Tetrachloride	56-23-5	5	5	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Chlorobenzene	108-90-7	100	100	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Chloroethane	75-00-3	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Chloroform	67-66-3	80	80	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Chloromethane	74-87-3	--	30	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
cis-1,3-Dichloropropene	10061-01-5	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Cyclohexane	110-82-7	--	--															
Cymene	99-87-6	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Dibromochloromethane	124-48-1	80	80	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Dibromomethane	74-95-3	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Profiling Locations (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-44	VP-45	VP-45	VP-45	VP-47	VP-48	VP-49	VP-50	VP-52	VP-53	VP-54	VP-54	VP-54	VP-54	VP-54
			Sample ID	VP-4430A	DUP01-0811A	VP-4515A	VP-4530A	VP-4740A	VP-4830A	VP-4925A	VP-5025A	VP-5225A	VP-5340A	DUP03-0822A	VP-5415A	VP-5420A	VP-5425A	VP-5430A
			Top Depth (feet below grade)		15	15	30	40	30	25		25	40	30	15	20	25	30
			Bottom Depth (feet below grade)	30	15	15	30	40	30	25	25	25	40	30	15	20	25	30
			Sample Date & Time	8/26/2011 9:10:00 AM	8/17/2011 8:25:00 AM	8/17/2011 8:15:00 AM	8/17/2011 9:50:00 AM	8/17/2011 2:40:00 PM	8/30/2011 10:35:00 AM	8/29/2011 2:35:00 PM	8/26/2011 12:10:00 PM	8/30/2011 4:00:00 PM	8/24/2011 2:20:00 PM	8/22/2011 1:35:00 PM	8/22/2011 11:45:00 AM	8/22/2011 12:20:00 PM	8/22/2011 12:40:00 PM	8/22/2011 1:30:00 PM
			Sample Type	N	FD	N	N	N	N	N	N	N	N	FD	N	N	N	N
			Field Duplicate Parent Sample		VP-4515A									VP-5430A				
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**															
Dichlorodifluoromethane	75-71-8	--	1000	13	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	3	1 U	1 U	100 U
Diethyl ether	60-29-7	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Ethylbenzene	100-41-4	700	700	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Hexachlorobutadiene	87-68-3	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Isopropylbenzene	98-82-8	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
m,p-Xylene	179601-23-1	10000	10000	2 U	40 U	40 U	2 U	2 U	100 U	2 U	40 U	2 U	2 U	200 U	2 U	2 U	2 U	200 U
Methyl Acetate	79-20-9	--	--															
Methyl Tert-Butyl Ether	1634-04-4	--	40	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Methylcyclohexane	108-87-2	--	--															
Methylene Chloride	75-09-2	**5**	**5**	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Naphthalene	91-20-3	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
n-Butylbenzene	104-51-8	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
n-Propylbenzene	103-65-1	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
o-Xylene	95-47-6	10000	10000	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Styrene	100-42-5	100	100	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Tetrachloroethene	127-18-4	**5**	**5**	1 U	20 U	20 U	1 U	1 U	**82**	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Tetrahydrofuran	109-99-9	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1.1	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Toluene	108-88-3	1000	1000	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
trans-1,3-Dichloropropene	10061-02-6	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Trichloroethene	79-01-6	**5**	**5**	2.1	**720**	**730**	1 U	**32**	**1700**	**42**	**410**	1 U	1 U	**2500**	1 U	1 U	4.8	**2600**
Trichlorofluoromethane	75-69-4	--	2100	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Vinyl Acetate	108-05-4	--	--	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U
Vinyl Chloride	75-01-4	**2**	**2**	1 U	20 U	20 U	1 U	1 U	50 U	1 U	20 U	1 U	1 U	100 U	1 U	1 U	1 U	100 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Profiling Locations (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-54	VP-54	VP-56	VP-56	VP-57	VP-57	WP-05	WP-06	WP-08
			Sample ID	VP-5435A	VP-5440A	VP-5630A	VP-5635A	VP-5725A	VP-5730A	WP-0515A	WP-0615A	WP-0820A
			Top Depth (feet below grade)	35	40	30	35	25	30			
			Bottom Depth (feet below grade)	35	40	30	35	25	30	15	15	20
			Sample Date & Time	8/22/2011 2:10:00 PM	8/22/2011 2:45:00 PM	10/4/2011 2:05:00 PM	10/4/2011 3:15:00 PM	10/5/2011 10:00:00 AM	10/5/2011 10:00:00 AM	9/1/2011 11:45:00 AM	9/1/2011 11:25:00 AM	9/1/2011 4:44:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample									
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**									
1,1,1,2-Tetrachloroethane	630-20-6	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,1,1-Trichloroethane	71-55-6	200	200	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,1,2-Trichloroethane	79-00-5	5	5	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,1-Dichloroethane	75-34-3	--	70	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,1-Dichloroethene	75-35-4	7	7	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,1-Dichloropropene	563-58-6	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,2,3-Trichlorobenzene	87-61-6	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,2,3-Trichloropropane	96-18-4	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,2,4-Trichlorobenzene	120-82-1	70	70	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,2,4-Trimethylbenzene	95-63-6	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,2-Dibromo-3-Chloropropane	96-12-8	**0.2**	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,2-Dibromoethane	106-93-4	0.05	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,2-Dichlorobenzene	95-50-1	600	600	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,2-Dichloroethane	107-06-2	**5**	**5**	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,2-Dichloropropane	78-87-5	**5**	**5**	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,3,5-Trimethylbenzene	108-67-8	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,3-Dichlorobenzene	541-73-1	--	600	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,3-Dichloropropane	142-28-9	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,4-Dichlorobenzene	106-46-7	75	75	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
1,4-Dioxane	123-91-1	--	--									
2,2-Dichloropropane	594-20-7	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
2-Butanone	78-93-3	--	4200	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
2-Chlorotoluene	95-49-8	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
2-Hexanone	591-78-6	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
2-Methyl-2-phenylpropane	98-06-6	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
2-Phenylbutane	135-98-8	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
4-Chlorotoluene	106-43-4	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
4-Methyl-2-Pentanone	108-10-1	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Acetone	67-64-1	--	700	250 U	20 U	20 UJ	1.6 J	10 U	20 U	1 U	20 U	1 U
Acrylonitrile	107-13-1	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Benzene	71-43-2	5	5	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Bromobenzene	108-86-1	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Bromochloromethane	74-97-5	--	90	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Bromodichloromethane	75-27-4	80	80	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Bromoform	75-25-2	80	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Bromomethane	74-83-9	--	10	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Carbon Disulfide	75-15-0	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Carbon Tetrachloride	56-23-5	5	5	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Chlorobenzene	108-90-7	100	100	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Chloroethane	75-00-3	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Chloroform	67-66-3	80	80	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Chloromethane	74-87-3	--	30	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
cis-1,3-Dichloropropene	10061-01-5	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Cyclohexane	110-82-7	--	--									
Cymene	99-87-6	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Dibromochloromethane	124-48-1	80	80	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Dibromomethane	74-95-3	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U

Appendix D-1
Analytical Data Summary
Groundwater Sample VOC Results - Profiling Locations (Non-Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-54	VP-54	VP-56	VP-56	VP-57	VP-57	WP-05	WP-06	WP-08
			Sample ID	VP-5435A	VP-5440A	VP-5630A	VP-5635A	VP-5725A	VP-5730A	WP-0515A	WP-0615A	WP-0820A
			Top Depth (feet below grade)	35	40	30	35	25	30			
			Bottom Depth (feet below grade)	35	40	30	35	25	30	15	15	20
			Sample Date & Time	8/22/2011 2:10:00 PM	8/22/2011 2:45:00 PM	10/4/2011 2:05:00 PM	10/4/2011 3:15:00 PM	10/5/2011 10:00:00 AM	10/5/2011 10:00:00 AM	9/1/2011 11:45:00 AM	9/1/2011 11:25:00 AM	9/1/2011 4:44:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample									
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**									
Dichlorodifluoromethane	75-71-8	--	1000	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	13
Diethyl ether	60-29-7	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Ethylbenzene	100-41-4	700	700	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Hexachlorobutadiene	87-68-3	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Isopropylbenzene	98-82-8	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
m,p-Xylene	179601-23-1	10000	10000	500 U	40 U	40 UJ	2 UJ	20 U	40 U	2 U	40 U	2 U
Methyl Acetate	79-20-9	--	--									
Methyl Tert-Butyl Ether	1634-04-4	--	40	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Methylcyclohexane	108-87-2	--	--									
Methylene Chloride	75-09-2	**5**	**5**	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Naphthalene	91-20-3	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
n-Butylbenzene	104-51-8	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
n-Propylbenzene	103-65-1	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
o-Xylene	95-47-6	10000	10000	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Styrene	100-42-5	100	100	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Tetrachloroethene	127-18-4	**5**	**5**	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1
Tetrahydrofuran	109-99-9	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Toluene	108-88-3	1000	1000	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
trans-1,2-Dichloroethene	156-60-5	**100**	**100**	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
trans-1,3-Dichloropropene	10061-02-6	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Trichloroethene	79-01-6	**5**	**5**	**10000**	**530**	**120 J**	1 UJ	**170**	**230**	1 U	**460**	**9.6**
Trichlorofluoromethane	75-69-4	--	2100	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Vinyl Acetate	108-05-4	--	--	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U
Vinyl Chloride	75-01-4	**2**	**2**	250 U	20 U	20 UJ	1 UJ	10 U	20 U	1 U	20 U	1 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-01	VP-01	VP-01	VP-01	VP-01	VP-01	VP-01	VP-02	VP-02	VP-02	VP-02	VP-02	VP-03	VP-03	VP-03	VP-03	VP-03	VP-03	VP-03	VP-04	VP-04
			Sample ID	VP-01 15	VP-01 20	VP-01 25	VP-01 30	VP-01 35	VP-01 40	VP-01 43	VP-0215-071310FS	VP-0220-071310FS	VP-0225-071310FS	VP-0230-071310FS	VP-0235-071310FS	VP-0310-071510FS	VP-0315-071510FS	VP-0320-071510FS	VP-0325-071510FS	VP-0330-071510FS	VP-0335-071510FS	VP-0338-071510FS	VP-0412-071310FS	VP-0415-071310FS
			Sample Depth	15	20	25	30	35	40	43	15	20	25	30	35	10	15	20	25	30	35	38	12	15
			Sample Date & Time	8/23/2010	8/23/2010	8/23/2010	8/23/2010	8/23/2010	8/23/2010	8/23/2010	7/13/2010	7/13/2010	7/13/2010	7/13/2010	7/13/2010	7/15/2010	7/15/2010	7/15/2010	7/15/2010	7/15/2010	7/15/2010	7/15/2010	7/13/2010	7/13/2010
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																					
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																					
1,1,1-Trichloroethane	71-55-6	200	200	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	75-35-4	7	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	71-43-2	5	5																					
Chlorobenzene	108-90-7	100	100	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.5 U	0.5 U	0.5 U	5 U	5 U	5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	700	700																					
m,p-Xylene	179601-23-1	10,000	10,000																					
o-Xylene	95-47-6	10,000	10,000																					
Tetrachloroethene	127-18-4	5	5	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.15	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	108-88-3	1,000	1,000																					
trans-1,2-Dichloroethene	156-60-5	100	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	**5**	**5**	**6.1**	**5.5**	**23**	57	191	229	109	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.1	2	0.2	1.2	2.3	1.9	0.8	0.7	0.9

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
VT GWPR - Vermont Ground Water Protection Rule
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VALUE Values in italics exceed all screening
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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-04	VP-04	VP-04	VP-04	VP-04	VP-05	VP-05	VP-05	VP-05	VP-05	VP-05	VP-05	VP-06	VP-06	VP-06	VP-06	VP-06	VP-06	VP-07	VP-07	VP-07
			Sample ID	VP-0420-071310FS	VP-0425-071310FS	VP-0430-071310FS	VP-0435-071310FS	VP-0440-071310FS	VP-0510-071410FS	VP-0515-071410FS	VP-0520-071410FS	VP-0525-071410FS	VP-0530-071410FS	VP-0535-071410FS	VP-0538-071410FS	VP-0615-071310FS	VP-0620-071310FS	VP-0625-071310FS	VP-0630-071410FS	VP-0635-071410FS	VP-0640-071410FS	VP-0710-071410FS	VP-0715-071410FS	VP-0720-071410FS
			Sample Depth	20	25	30	35	40	10	15	20	25	30	35	38	15	20	25	30	35	40	10	15	20
			Sample Date & Time	7/13/2010	7/13/2010	7/13/2010	7/13/2010	7/13/2010	7/14/2010	7/14/2010	7/14/2010	7/14/2010	7/14/2010	7/14/2010	7/14/2010	7/13/2010	7/13/2010	7/13/2010	7/14/2010	7/14/2010	7/14/2010	7/14/2010	7/14/2010	7/14/2010
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																					
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																					
1,1,1-Trichloroethane	71-55-6	200	200	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	75-35-4	7	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U	0.5 U			0.5 U
Benzene	71-43-2	5	5																					
Chlorobenzene	108-90-7	100	100	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U	0.5 U			
Ethylbenzene	100-41-4	700	700																					
m,p-Xylene	179601-23-1	10,000	10,000																					
o-Xylene	95-47-6	10,000	10,000																					
Tetrachloroethene	127-18-4	5	5	0.13	0.3	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.03	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.1	0.6	1	0.3	0.2 U	0.2 U	0.06
Toluene	108-88-3	1,000	1,000																					
trans-1,2-Dichloroethene	156-60-5	100	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3 U	0.5 U			0.5 U
Trichloroethene	79-01-6	**5**	**5**	5.7	37	5.4	7.9	200	0.18	2.7	4.9	4.5	0.4	0.04	0.5 U	0.4	1.3	**6.3**	**74**	**121**	**66**	0.9	2.1	**5.9**

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-07	VP-07	VP-07	VP-07	VP-08	VP-08	VP-08	VP-08	VP-08	VP-08	VP-08	VP-09	VP-09	VP-09	VP-09	VP-09	VP-09	VP-09	VP-10	VP-10	VP-10
			Sample ID	VP-0725-071410FS	VP-0730-071410FS	VP-0735-071410FS	VP-0740-071410FS	VP-0810-071210FS	VP-0815-071210FS	VP-0820-071210FS	VP-0825-071210FS	VP-0830-071210FS	VP-0835-071210FS	VP-0840-071210FS	VP-0910-071510FS	VP-0915-071510FS	VP-0920-071510FS	VP-0925-071510FS	VP-0930-071510FS	VP-0935-071510FS	VP-0940-071510FS	VP-1010-071510FS	VP-1015-071510FS	VP-1020-071510FS
			Sample Depth	25	30	35	40	10	15	20	25	30	35	40	10	15	20	25	30	35	40	10	15	20
			Sample Date & Time	7/14/2010	7/14/2010	7/14/2010	7/14/2010	7/12/2010	7/12/2010	7/12/2010	7/12/2010	7/12/2010	7/12/2010	7/12/2010	7/15/2010	7/15/2010	7/15/2010	7/15/2010	7/15/2010	7/15/2010	7/15/2010	7/15/2010	7/15/2010	7/15/2010
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																					
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																					
1,1,1-Trichloroethane	71-55-6	200	200	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	75-35-4	7	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Benzene	71-43-2	5	5																					
Chlorobenzene	108-90-7	100	100	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	30 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	700	700																					
m,p-Xylene	179601-23-1	10,000	10,000																					
o-Xylene	95-47-6	10,000	10,000																					
Tetrachloroethene	127-18-4	5	5	0.02	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.4	2 U	0.2 U	0.2 U	0.2 U
Toluene	108-88-3	1,000	1,000																					
trans-1,2-Dichloroethene	156-60-5	100	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	**5**	**5**	**25**	**29**	0.3	0.5 U	0.5 U	1.5	1.3	2.4	**10**	**35**	**23**	0.5 U	1.5	4.8	4.3	**18**	**206**	**185**	0.5 U	0.5 U	0.2

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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VALUE Indicates exceedance of a screening
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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-10	VP-10	VP-10	VP-10	VP-11	VP-11	VP-11	VP-11	VP-11	VP-11	VP-12	VP-12	VP-12	VP-12	VP-12	VP-12	VP-13	VP-13	VP-13	VP-13	VP-13
			Sample ID	VP-1025-071510FS	VP-1030-071510FS	VP-1035-071510FS	VP-1040-071510FS	VP-1115-071910FS	VP-1120-071910FS	VP-1125-071910FS	VP-1130-071910FS	VP-1135-071910FS	VP-1140-071910FS	VP-1215-072010FS	VP-1220-072010FS	VP-1225-072010FS	VP-1230-072010FS	VP-1235-072010FS	VP-1240-072010FS	VP-1310-071610FS	VP-1315-071610FS	VP-1320-071610FS	VP-1325-071610FS	VP-1330-071610FS
			Sample Depth	25	30	35	40	15	20	25	30	35	40	15	20	25	30	35	40	10	15	20	25	30
			Sample Date & Time	7/15/2010	7/15/2010	7/15/2010	7/15/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	7/20/2010	7/20/2010	7/20/2010	7/20/2010	7/20/2010	7/20/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010	7/16/2010
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																					
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																					
1,1,1-Trichloroethane	71-55-6	200	200	0.2 U	3 U	4 U	4 U	0.2 U	0.2 U	0.2 U	6 U	20 U	20 U	0.2 U	0.2 U	2 U	6 U	20 U	0.2 U	0.2 U	0.2 U	0.2 U	3 U	4 U
1,1-Dichloroethene	75-35-4	7	7	0.5 U	5 U	6 U	6 U	0.5 U	0.5 U	0.5 U	15 U	50 U	50 U	0.5 U	0.5 U	5 U	15 U	50 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	6 U
Benzene	71-43-2	5	5																					
Chlorobenzene	108-90-7	100	100	2 U	15 U	20 U	20 U	2 U	2 U	2 U	50 U	80 U	80 U	2 U	2 U	20 U	50 U	80 U	2 U	2 U	2 U	2 U	15 U	20 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.5 U	5 U	6 U	6 U	0.5 U	0.5 U	0.5 U	15 U	50 U	50 U	0.5 U	0.5 U	5 U	15 U	50 U	7	0.5 U	0.5 U	0.5 U	5 U	6 U
Ethylbenzene	100-41-4	700	700																					
m,p-Xylene	179601-23-1	10,000	10,000																					
o-Xylene	95-47-6	10,000	10,000																					
Tetrachloroethene	127-18-4	5	5	0.2 U	3 U	4 U	4 U	0.2 U	0.2 U	0.14	6 U	20 U	20 U	0.2 U	0.2 U	2 U	6 U	20 U	0.2 U	0.2 U	0.2 U	0.2 U	3 U	4 U
Toluene	108-88-3	1,000	1,000																					
trans-1,2-Dichloroethene	156-60-5	100	100	0.5 U	5 U	6 U	6 U	0.5 U	0.5 U	0.5 U	15 U	50 U	50 U	5 U	3 U	5 U	15 U	50 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	6 U
Trichloroethene	79-01-6	**5**	**5**	3.2	**30**	**71**	**254**	0.2	4.7	**15**	**269**	**1590**	**114**	0.4	**10**	**148**	**544**	**146**	**9.6**	0.5 U	0.6	**5.7**	**40**	**270**

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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VALUE Values in italics exceed all screening
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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-13	VP-13	VP-14	VP-14	VP-14	VP-14	VP-14	VP-14	VP-15	VP-15	VP-15	VP-15	VP-15	VP-15	VP-15	VP-16	VP-16	VP-16	VP-16	VP-16	VP-16
			Sample ID	VP-1335-071610FS	VP-1340-071610FS	VP-1415-071910FS	VP-1420-071910FS	VP-1425-071910FS	VP-1430-072010FS	VP-1435-072010FS	VP-1440-072010FS	VP-1510-071610FS	VP-1515-071610FS	VP-1520-071610FS	VP-1525-071910FS	VP-1530-071910FS	VP-1535-071910FS	VP-1540-071910FS	VP-1610-071910FS	VP-1615-071910FS	VP-1620-071910FS	VP-1625-071910FS	VP-1630-071910FS	VP-1635-071910FS
			Sample Depth	35	40	15	20	25	30	35	40	10	15	20	25	30	35	40	10	15	20	25	30	35
			Sample Date & Time	7/16/2010	7/16/2010	7/19/2010	7/19/2010	7/19/2010	7/20/2010	7/20/2010	7/20/2010	7/16/2010	7/16/2010	7/16/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																					
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																					
1,1,1-Trichloroethane	71-55-6	200	200	4 U	5 U	0.2 U	0.2 U	0.2 U	6 U	20 U	20 U	0.2 U	0.2 U	0.2 U	0.2 U	6 U	20 U	20 U	0.2 U	0.2 U	0.2 U	0.2 U	6 U	20 U
1,1-Dichloroethene	75-35-4	7	7	6 U	8 U	0.5 U	0.5 U	0.5 U	15 U	50 U	50 U	0.5 U	0.5 U	0.5 U	0.5 U	15 U	50 U	50 U	0.5 U	0.5 U	0.5 U	0.5 U	15 U	50 U
Benzene	71-43-2	5	5																					
Chlorobenzene	108-90-7	100	100	20 U	28 U	2 U	2 U	2 U	50 U	80 U	80 U	2 U	2 U	2 U	2 U	50 U	80 U	80 U	2 U	2 U	2 U	2 U	50 U	80 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	6 U	8 U	0.5 U	0.5 U	0.5 U	15 U	50 U	50 U	0.5 U	0.5 U	0.5 U	0.5 U	15 U	50 U	50 U	0.5 U	0.5 U	0.5 U	0.5 U	15 U	50 U
Ethylbenzene	100-41-4	700	700																					
m,p-Xylene	179601-23-1	10,000	10,000																					
o-Xylene	95-47-6	10,000	10,000																					
Tetrachloroethene	127-18-4	5	5	4 U	5 U	0.2 U	0.2 U	0.2 U	6 U	20 U	20 U	0.2 U	0.2 U	0.2 U	0.2 U	6 U	20 U	20 U	0.2 U	0.2 U	0.2 U	0.2 U	6 U	20 U
Toluene	108-88-3	1,000	1,000																					
trans-1,2-Dichloroethene	156-60-5	100	100	6 U	8 U	0.5 U	0.5 U	0.5 U	15 U	50 U	50 U	0.5 U	0.5 U	0.5 U	0.5 U	15 U	50 U	50 U	0.5 U	0.5 U	0.5 U	0.5 U	15 U	50 U
Trichloroethene	79-01-6	**5**	**5**	**743**	**1525**	0.5 U	0.8	**6.1**	**116**	**314**	**5980**	0.5 U	0.5 U	0.8	**6.7**	**69**	**6015**	**20000**	0.5 U	0.5 U	4.7	**10**	**850**	**19000**

Notes:

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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-16	VP-16A	VP-16A	VP-16A	VP-16A	VP-17	VP-17	VP-17	VP-17	VP-17	VP-17	VP-17	VP-18	VP-18	VP-18	VP-18	VP-18	VP-19	VP-19	VP-19	VP-19
			Sample ID	VP-1640-071910FS	VP-16A 15	VP-16A 20	VP-16A 25	VP-16A 30	VP-1710-071910FS	VP-1715-071910FS	VP-1720-071910FS	VP-1725-071910FS	VP-1730-071910FS	VP-1735-071910FS	VP-1740-071910FS	VP-18 15	VP-18 20	VP-18 30	VP-18 35	VP-18 40	VP-1915-072010FS	VP-1920-072010FS	VP-1925-072010FS	VP-1930-072010FS
			Sample Depth	40	15	20	25	30	10	15	20	25	30	35	40	15	20	30	35	40	15	20	25	30
			Sample Date & Time	7/19/2010	8/23/2010	8/23/2010	8/23/2010	8/23/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	7/19/2010	8/24/2010	8/24/2010	8/24/2010	8/24/2010	8/24/2010	7/20/2010	7/20/2010	7/20/2010	7/20/2010
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																					
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																					
1,1,1-Trichloroethane	71-55-6	200	200	20 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	6 U	20 U	20 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	3 U	20 U
1,1-Dichloroethene	75-35-4	7	7	50 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	15 U	50 U	50 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	1600 U
Benzene	71-43-2	5	5																					
Chlorobenzene	108-90-7	100	100	80 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	50 U	80 U	80 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	2000 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	50 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	15 U	50 U	50 U	0.5 U	0.5 U	22	26	1 U	0.5 U	1	5 U	60 U
Ethylbenzene	100-41-4	700	700																					
m,p-Xylene	179601-23-1	10,000	10,000																					
o-Xylene	95-47-6	10,000	10,000																					
Tetrachloroethene	127-18-4	5	5	20 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	6 U	20 U	20 U	0.2 U	0.2 U	0.5	0.11	0.2 U	0.2 U	0.09	3 U	20 U
Toluene	108-88-3	1,000	1,000																					
trans-1,2-Dichloroethene	156-60-5	100	100	50 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	15 U	50 U	50 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5 U	60 U
Trichloroethene	79-01-6	**5**	**5**	**61000**	0.5 U	0.5	2.5	**18**	0.5 U	0.5 U	0.5	2.3	**914**	**4400**	**900**	0.5 U	**9.1**	**2740**	**5400**	**26**	0.2	**17**	**82**	**1510**

Notes:

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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-19	VP-19	VP-19	VP-20	VP-20	VP-20	VP-20	VP-20	VP-20	VP-21	VP-21	VP-21	VP-21	VP-21	VP-21	VP-22	VP-22	VP-22	VP-22	VP-22
			Sample ID	VP-1935-072010FS	VP-1940-072010FS	VP-1945-072010FS	VP-2015-072010FS	VP-2020-072010FS	VP-2025-072110FS	VP-2030-072110FS	VP-2035-072110FS	VP-2040-072110FS	VP-21 15	VP-21 20	VP-21 25	VP-21 30	VP-21 35	VP-21 40	VP-2215-072110FS	VP-2220-072110FS	VP-2225-072110FS	VP-2230-072110FS	VP-2235-072110FS
			Sample Depth	35	40	45	15	20	25	30	35	40	15	20	25	30	35	40	15	20	25	30	35
			Sample Date & Time	7/20/2010	7/20/2010	7/20/2010	7/20/2010	7/20/2010	7/21/2010	7/21/2010	7/21/2010	7/21/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	7/21/2010	7/21/2010	7/21/2010	7/21/2010	7/21/2010
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																				
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,1,1-Trichloroethane	71-55-6	200	200	500 U	500 U	30 U	0.2 U	0.2 U	10 U	200 U	500 U	100 U	0.2 U	0.2 U	0.2 U	25 U	0.2 U	0.2 U	0.2 U	0.2 U	24 U	20 U	0.2 U
1,1-Dichloroethene	75-35-4	7	7	1000 U	1000 U	100 U	0.5 U	0.5 U	30 U	500 U	1000 U	200 U	0.5 U	0.5 U	0.5 U	60 U	0.5 U	0.5 U	0.5 U	0.5 U	60 U	60 U	60 U
Benzene	71-43-2	5	5																				
Chlorobenzene	108-90-7	100	100	6000 U	6000 U	500 U	2 U	2 U	120 U	1500 U	6000 U	1000 U	2 U	2 U	2 U	240 U	2 U	2 U	2 U	2 U	200 U	200 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	1000 U	1000 U	100 U	0.5 U	0.5 U	30 U	500 U	1000 U	200 U	0.5 U	0.5 U	0.5 U	60 U	0.5 U	0.5 U	0.5 U	0.5 U	60 U	**4620**	**18200**
Ethylbenzene	100-41-4	700	700																				
m,p-Xylene	179601-23-1	10,000	10,000																				
o-Xylene	95-47-6	10,000	10,000																				
Tetrachloroethene	127-18-4	5	5	500 U	500 U	30 U	0.2 U	0.2 U	10 U	200 U	500 U	100 U	0.2 U	0.2 U	0.2 U	25 U	0.2 U	0.2 U	0.2 U	0.2 U	24 U	0.5 U	0.2 U
Toluene	108-88-3	1,000	1,000																				
trans-1,2-Dichloroethene	156-60-5	100	100	1000 U	1000 U	100 U	0.5 U	0.5 U	30 U	500 U	1000 U	200 U	0.5 U	0.5 U	0.5 U	60 U	0.5 U	0.5 U	0.5 U	0.5 U	60 U	60 U	60 U
Trichloroethene	79-01-6	**5**	**5**	**29000**	**13500**	**7900**	0.5 U	**5.8**	**2230**	**41900**	**44000**	**4310**	0.5 U	0.5 U	**32**	**1210**	0.2	0.4	**5.7**	**23**	**261**	**16**	2.1

Notes:

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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-22	VP-23	VP-23	VP-23	VP-23	VP-23	VP-23	VP-23	VP-24	VP-24	VP-24	VP-24	VP-24	VP-24	VP-25	VP-25	VP-25	VP-25	VP-25	VP-25
			Sample ID	VP-2240-072110FS	VP-2315-072110FS	VP-2320-072110FS	VP-2325-072110FS	VP-2330-072210FS	VP-2335-072210FS	VP-2338-072210FS	VP-2341-072210FS	VP-24 15	VP-24 20	VP-24 25	VP-24 30	VP-24 35	VP-24 40	VP-2515-072310AX	VP-2520-072310AX	VP-2525-072310AX	VP-2530-072310AX	VP-2535-072310AX	VP-2540-072310AX
			Sample Depth	40	15	20	25	30	35	38	41	15	20	25	30	35	40	15	20	25	30	35	40
			Sample Date & Time	7/21/2010	7/21/2010	7/21/2010	7/21/2010	7/22/2010	7/22/2010	7/22/2010	7/22/2010	8/24/2010	8/24/2010	8/24/2010	8/24/2010	8/24/2010	8/24/2010	7/23/2010 10:30:00 AM	7/23/2010 10:45:00 AM	7/23/2010 11:20:00 AM	7/23/2010 12:00:00 PM	7/23/2010 12:35:00 PM	7/23/2010 1:00:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																				
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,1,1-Trichloroethane	71-55-6	200	200	24 U	0.2 U	0.2 U	0.2 U	6 U	0.2 U	0.2 U	0.2 U	0.2 U	400 U	0.2 U	25 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	7	60 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	0.5 U	75 U	2 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	71-43-2	5	5															1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	100	200 U	2 U	2 U	2 U	80 U	2 U	2 U	2 U	2 U	4000 U	2 U	300 U	4 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	**212**	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	5.3	1000 U	8.6	75 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	700	700															1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	179601-23-1	10,000	10,000															1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
o-Xylene	95-47-6	10,000	10,000															1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	5	5	24 U	0.2 U	0.2 U	0.2 U	6 U	0.2 U	0.2 U	0.2 U	**14**	400 U	**5.1**	25 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	108-88-3	1,000	1,000															0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	100	100	60 U	0.5 U	0.5 U	0.5 U	20 U	0.5 U	0.5 U	0.5 U	0.5 U	1000 U	0.5 U	75 U	2 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	**5**	**5**	**118**	0.5 U	0.7	**7.8**	**463**	4.5	0.4	0.2	**1200**	**3720**	**3920**	**400**	**41**	1.4	0.2 U	0.48	2.8	**16**	**20**	0.2 U

Notes:

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Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-25	VP-26	VP-26	VP-26	VP-26	VP-26	VP-26	VP-26	VP-27	VP-27	VP-27	VP-27	VP-27	VP-27	VP-27	VP-28	VP-28	VP-28	VP-28	VP-28
			Sample ID	VP-2545-072310AX	VP-2615-072310AX	VP-2620-072310AX	VP-2625-072310AX	VP-2630-072310AX	VP-2635-072310AX	VP-2640-072310AX	VP-2645-072310AX	VP-2715-072410AX	VP-2720-072410AX	VP-2725-072410AX	VP-2730-072410AX	VP-2735-072410AX	VP-2740-072410AX	VP-2745-072410AX	VP-2815-072410AX	VP-2820-072410AX	VP-2825-072410AX	VP-2830-072410AX	VP-2835-072410AX
			Sample Depth	45	15	20	25	30	35	40	45	15	20	25	30	35	40	45	15	20	25	30	35
			Sample Date & Time	7/23/2010 1:25:00 PM	7/23/2010 3:10:00 PM	7/23/2010 3:25:00 PM	7/23/2010 3:45:00 PM	7/23/2010 4:20:00 PM	7/23/2010 4:45:00 PM	7/23/2010 5:20:00 PM	7/23/2010 5:45:00 PM	7/24/2010 10:55:00 AM	7/24/2010 11:15:00 AM	7/24/2010 11:45:00 AM	7/24/2010 12:15:00 PM	7/24/2010 12:35:00 PM	7/24/2010 1:05:00 PM	7/24/2010 1:35:00 PM	7/24/2010 8:15:00 AM	7/24/2010 8:30:00 AM	7/24/2010 8:50:00 AM	7/24/2010 9:10:00 AM	7/24/2010 9:50:00 AM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																				
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,1,1-Trichloroethane	71-55-6	200	200	1 U	1 U	1 U	5 U	50 U	100 U	100 U	1 U	1 U	1 U	1 U	50 U	1 U	100 U	100 U	1 U	1 U	5 U	50 U	100 U
1,1-Dichloroethene	75-35-4	7	7	1 U	1 U	1 U	5 U	50 U	100 U	100 U	1 U	1 U	1 U	1 U	50 U	1 U	100 U	100 U	1 U	1 U	5 U	50 U	100 U
Benzene	71-43-2	5	5	1 U	1 U	1 U	5 U	50 U	100 U	100 U	1 U	1 U	1 U	1 U	50 U	1 U	100 U	100 U	1 U	1 U	5 U	50 U	100 U
Chlorobenzene	108-90-7	100	100	1 U	1 U	1 U	5 U	50 U	100 U	100 U	1 U	1 U	1 U	1 U	50 U	1 U	100 U	100 U	1 U	1 U	5 U	50 U	100 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.5 U	0.5 U	0.5 U	2.5 U	25 U	50 U	50 U	0.5 U	0.5 U	0.5 U	0.5 U	25 U	0.5 U	50 U	50 U	0.5 U	0.5 U	2.5 U	25 U	50 U
Ethylbenzene	100-41-4	700	700	1 U	1 U	1 U	5 U	50 U	100 U	100 U	1 U	1 U	1 U	1 U	50 U	1 U	100 U	100 U	1 U	1 U	5 U	50 U	100 U
m,p-Xylene	179601-23-1	10,000	10,000	1.5 U	1.5 U	1.5 U	7.5 U	75 U	150 U	150 U	1.5 U	1.5 U	1.5 U	1.5 U	75 U	1.5 U	150 U	150 U	1.5 U	1.5 U	7.5 U	75 U	150 U
o-Xylene	95-47-6	10,000	10,000	1 U	1 U	1 U	5 U	50 U	100 U	100 U	1 U	1 U	1 U	1 U	50 U	1 U	100 U	100 U	1 U	1 U	5 U	50 U	100 U
Tetrachloroethene	127-18-4	5	5	0.2 U	0.2 U	0.43	**9.3**	10 U	20 U	20 U	0.2 U	0.2 U	0.44	3	**26**	0.2 U	20 U	20 U	0.2 U	0.2 U	1 U	10 U	20 U
Toluene	108-88-3	1,000	1,000	0.5 U	0.5 U	0.5 U	2.5 U	25 U	50 U	50 U	0.5 U	0.5 U	0.5 U	0.5 U	25 U	0.5 U	50 U	50 U	0.5 U	0.5 U	2.5 U	25 U	50 U
trans-1,2-Dichloroethene	156-60-5	100	100	1 U	1 U	1 U	5 U	50 U	100 U	100 U	1 U	1 U	1 U	1 U	50 U	1 U	100 U	100 U	1 U	1 U	5 U	50 U	100 U
Trichloroethene	79-01-6	**5**	**5**	0.2 U	0.26	0.75	**150**	900 U	**5700**	**1900**	1.3	0.2 U	1.2	**9.6**	**720**	**210**	**1400**	**240**	0.2 U	**9**	**130**	**1100**	**4900**

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
VT GWPR - Vermont Ground Water Protection Rule
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VALUE Indicates exceedance of a screening
VALUE Values in italics exceed all screening
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-28	VP-29	VP-29	VP-29	VP-29	VP-29	VP-29	VP-30	VP-30	VP-30	VP-30	VP-30	VP-30	VP-31	VP-31	VP-31	VP-31	VP-31	VP-31	VP-32
			Sample ID	VP-2840-072410AX	VP-2915-072210FS	VP-2920-072210FS	VP-2925-072210FS	VP-2930-072210FS	VP-2935-072210FS	VP-2940-072210FS	VP-3015-072210FS	VP-3020-072210FS	VP-3025-072210FS	VP-3030-072210FS	VP-3035-072210FS	VP-3040-072210FS	VP-3115-072310FS	VP-3120-072310FS	VP-3125-072310FS	VP-3130-072310FS	VP-3135-072310FS	VP-3140-072310FS	VP-32 15 15
			Sample Depth	40	15	20	25	30	35	40	15	20	25	30	35	40	15	20	25	30	35	40	15
			Sample Date & Time	7/24/2010 10:15:00 AM	7/22/2010	7/22/2010	7/22/2010	7/22/2010	7/22/2010	7/22/2010	7/22/2010	7/22/2010	7/22/2010	7/22/2010	7/22/2010	7/22/2010	7/23/2010	7/23/2010	7/23/2010	7/23/2010	7/23/2010	7/23/2010	8/19/2011
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																				
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,1,1-Trichloroethane	71-55-6	200	200	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
1,1-Dichloroethene	75-35-4	7	7	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	71-43-2	5	5	1 U																			
Chlorobenzene	108-90-7	100	100	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	700	700	1 U																			
m,p-Xylene	179601-23-1	10,000	10,000	1.5 U																			
o-Xylene	95-47-6	10,000	10,000	1 U																			
Tetrachloroethene	127-18-4	5	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.12	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	108-88-3	1,000	1,000	0.5 U																			
trans-1,2-Dichloroethene	156-60-5	100	100	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	**5**	**5**	**23**	0.5 U	0.5 U	0.5 U	2.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	1.5	3.4	0.7	2.2	**10**	0.5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-32	VP-32	VP-32	VP-32	VP-32	VP-33	VP-33	VP-33	VP-33	VP-33	VP-33	VP-33	VP-33	VP-34	VP-34	VP-34	VP-34	VP-34	VP-34	VP-35
			Sample ID	VP-32 20	VP-32 25	VP-32 30	VP-32 35	VP-32 40	VP-33 15	VP-33 20	VP-33 25	VP-33 30	VP-33 35	VP-33 40	VP-33 45	VP-33 50	VP-3415A	VP-3420A	VP-3425A	VP-3430A	VP-3435A	VP-3440A	DUP05-0825A
			Sample Depth	20	25	30	35	40	15	20	25	30	35	40	45	50	15	20	25	30	35	40	15
			Sample Date & Time	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/19/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/18/2011	8/25/2011	8/25/2011	8/25/2011 1:25:00 PM	8/25/2011	8/25/2011	8/25/2011	8/25/2011
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD
			Field Duplicate Parent Sample																				VP-3515A
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,1,1-Trichloroethane	71-55-6	200	200	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	71-43-2	5	5														1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	100	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	700	700														1 U	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	179601-23-1	10,000	10,000														1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
o-Xylene	95-47-6	10,000	10,000														1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	5	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	108-88-3	1,000	1,000														0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	100	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	**5**	**5**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-35	VP-35	VP-35	VP-35	VP-35	VP-37	VP-37	VP-37	VP-37	VP-37	VP-38	VP-38	VP-38	VP-38	VP-38	VP-38	VP-39	VP-39	VP-39	VP-39
			Sample ID	VP-3515A	VP-3520A	VP-3525A	VP-3530A	VP-3535A	VP-3715A	VP-3720A	VP-3725A	VP-3730A	VP-3735A	DUP04-0823A	VP-3815A	VP-3820A	VP-3825A	VP-3830A	VP-3835A	VP-39 15	VP-39 20	VP-39 25	VP-39 30
			Sample Depth	15	20	25	30	35	15	20	25	30	35	30	15	20	25	30	35	15	20	25	30
			Sample Date & Time	8/25/2011	8/25/2011	8/25/2011 9:25:00 AM	8/25/2011	8/25/2011	8/23/2011 12:50:00 PM	8/23/2011 1:10:00 PM	8/23/2011 2:00:00 PM	8/23/2011 2:45:00 PM	8/23/2011 3:25:00 PM	8/23/2011 9:55:00 AM	8/23/2011 8:00:00 AM	8/23/2011 8:30:00 AM	8/23/2011 9:00:00 AM	8/23/2011 9:50:00 AM	8/23/2011 10:30:00 AM	8/19/2011	8/19/2011	8/19/2011	8/19/2011
			Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample											VP-3830A									
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,1,1-Trichloroethane	71-55-6	200	200	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	7	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	71-43-2	5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U				
Chlorobenzene	108-90-7	100	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**140**	34	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.8
Ethylbenzene	100-41-4	700	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U				
m,p-Xylene	179601-23-1	10,000	10,000	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U				
o-Xylene	95-47-6	10,000	10,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U				
Tetrachloroethene	127-18-4	5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	200 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	108-88-3	1,000	1,000	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U				
trans-1,2-Dichloroethene	156-60-5	100	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	**5**	**5**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.4	**6100**	**1700**	3.2	2.2	1 U	0.1	**6**	**35**	**1130**

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-39	VP-39	VP-39	VP-40	VP-40	VP-40	VP-40	VP-41	VP-41	VP-41	VP-41	VP-41	VP-41	VP-41	VP-42	VP-42	VP-42	VP-42	VP-42	VP-42
			Sample ID	VP-39 35	VP-39 35DUP	VP-39 38	VP-4015A	VP-4020A	VP-4025A	VP-4030A	VP-41 15	VP-41 20	VP-41 25	VP-41 30	VP-41 35	VP-41 35DUP	VP-41 40	VP-42 15	VP-42 20	VP-42 25	VP-42 30	VP-42 35	VP-42 40
			Sample Depth	35	35	38					15	20	25	30	35	35	40	15	20	25	30	35	40
			Sample Date & Time	35	35	38					15	20	25	30	35	35	40	15	20	25	30	35	40
			Sample Date & Time	8/19/2011	8/19/2011	8/19/2011	8/24/2011 8:15:00 AM	8/24/2011 8:40:00 AM	8/24/2011 9:20:00 AM	8/24/2011 9:55:00 AM	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/15/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011
			Sample Type	N	FD	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
			Field Duplicate Parent Sample		VP-39 35											VP-41 35							
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,1,1-Trichloroethane	71-55-6	200	200	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	7	7	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	71-43-2	5	5				1 U	1 U	1 U	1 U													
Chlorobenzene	108-90-7	100	100	2 U	2 U	2 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	2.2	2.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	700	700				1 U	1 U	1 U	1 U													
m,p-Xylene	179601-23-1	10,000	10,000				1.5 U	1.5 U	1.5 U	1.5 U													
o-Xylene	95-47-6	10,000	10,000				1 U	1 U	1 U	1 U													
Tetrachloroethene	127-18-4	5	5	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U	1 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	108-88-3	1,000	1,000				0.5 U	0.5 U	0.5 U	0.5 U													
trans-1,2-Dichloroethene	156-60-5	100	100	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	**5**	**5**	**380**	**385**	**18**	1 U	1 U	**70**	**100**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	**72**	**36**	0.5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-42	VP-43	VP-43	VP-43	VP-43	VP-43	VP-43	VP-43	VP-43	VP-44	VP-44	VP-44	VP-44	VP-44	VP-45	VP-45	VP-45	VP-45	VP-45	VP-45
			Sample ID	VP-42 45	VP-43 15	VP-43 20	VP-43 25	VP-43 30	VP-43 35	VP-43 40	VP-43 45	VP-43 50	VP-4415A	VP-4420A	VP-4425A	VP-4430A	VP-4435A	VP-45 10	VP-45 15	VP-45 20	VP-45 25	VP-45 30	VP-45 5
				45	15	20	25	30	35	40	45	50						10	15	20	25	30	5
			Sample Depth	45	15	20	25	30	35	40	45	50						10	15	20	25	30	5
			Sample Date & Time	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/16/2011	8/26/2011 8:00:00 AM	8/26/2011 8:25:00 AM	8/26/2011 8:45:00 AM	8/26/2011 9:10:00 AM	8/26/2011 9:35:00 AM	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																				
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,1,1-Trichloroethane	71-55-6	200	200	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	75-35-4	7	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	71-43-2	5	5										1 U	1 U	1 U	1 U	1 U						
Chlorobenzene	108-90-7	100	100	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.8	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	700	700										1 U	1 U	1 U	1 U	1 U						
m,p-Xylene	179601-23-1	10,000	10,000										1.5 U	1.5 U	1.5 U	1.5 U	1.5 U						
o-Xylene	95-47-6	10,000	10,000										1 U	1 U	1 U	1 U	1 U						
Tetrachloroethene	127-18-4	5	5	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U	4.1	1 U	0.5	0.1	0.2 U	0.2 U	0.2 U	0.1
Toluene	108-88-3	1,000	1,000										0.5 U	0.5 U	0.5 U	0.5 U	0.5 U						
trans-1,2-Dichloroethene	156-60-5	100	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	79-01-6	**5**	**5**	0.6	0.5 U	0.5 U	0.6	**63**	**805**	**11**	0.5 U	0.5 U	1 U	1 U	1 U	2.7	1 U	**23**	**525**	**104**	2.7	0.5 U	1.3

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
VT GWPR - Vermont Ground Water Protection Rule
All criterea and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening
VALUE Values in italics exceed all screening
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-47	VP-47	VP-47	VP-47	VP-47	VP-47	VP-47	VP-48	VP-48	VP-48	VP-48	VP-48	VP-48	VP-48	VP-49	VP-49	VP-49	VP-49	VP-49	VP-49
			Sample ID	VP-47 15	VP-47 20	VP-47 25	VP-47 30	VP-47 35	VP-47 40	VP-47 45	VP48-015.00	VP48-020.00	VP48-025.00	VP48-030.00	VP48-035.00	VP48-040.00	VP48-045.00	VP49-010.00	VP49-015.00	VP49-020.00	VP49-025.00	VP49-030.00	VP49-035.00
			Sample Depth	15	20	25	30	35	40	45	15	20	25	30	35	40	45	10	15	20	25	30	35
			Sample Date & Time	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/17/2011	8/30/2011 8:45:00 AM	8/30/2011 9:15:00 AM	8/30/2011 9:55:00 AM	8/30/2011 10:35:00 AM	8/30/2011 11:20:00 AM	8/30/2011 12:00:00 PM	8/30/2011 12:50:00 PM	8/29/2011 4:45:00 PM	8/29/2011 1:40:00 PM	8/29/2011 2:05:00 PM	8/29/2011 2:35:00 PM	8/29/2011 3:10:00 PM	8/29/2011 3:40:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																				
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,1,1-Trichloroethane	71-55-6	200	200	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	75-35-4	7	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	71-43-2	5	5																				
Chlorobenzene	108-90-7	100	100	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.5 U	0.5 U	0.5 U	0.5 U	3.4	0.5 U	0.5 U	2 U	2 U	3.2	3	7.9	2.4	2 U	2 U	2 U	3.2	3	7.9	2.4
Ethylbenzene	100-41-4	700	700																				
m,p-Xylene	179601-23-1	10,000	10,000																				
o-Xylene	95-47-6	10,000	10,000																				
Tetrachloroethene	127-18-4	5	5	0.1	0.3	**12**	**8.5**	**14**	0.2 U	0.2 U	2 U	2 U	**41**	**83**	**6.4**	2 U	2 U	2 U	2 U	**41**	**83**	**6.4**	2 U
Toluene	108-88-3	1,000	1,000																				
trans-1,2-Dichloroethene	156-60-5	100	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	79-01-6	**5**	**5**	0.5 U	4.8	**154**	**211**	**1370**	**33**	1.6	2 U	4.9	**1900**	**1500**	**3900**	**1000 E**	2.2	**69**	2 U	2 U	**35**	**440**	**390**

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-49	VP-50	VP-50	VP-50	VP-50	VP-50	VP-50	VP-51	VP-51	VP-51	VP-51	VP-51	VP-51	VP-51	VP-51	VP-52	VP-52	VP-52	VP-52	VP-52
			Sample ID	VP49-037.50	VP-5015A	VP-5020A	VP-5025A	VP-5030A	VP-5035A	VP-5040A	VP51-010.00	VP51-015.00	VP51-020.00	VP51-025.00	VP51-030.00	VP51-035.00	VP51-040.00	VP51-040.00-FD	VP52-015.00	VP52-020.00	VP52-025.00	VP52-030.00	VP52-035.00
			Sample Depth	37.5	15	20	25	30	35	40	10	15	20	25	30	35	40	40	15	20	25	30	35
			Sample Date & Time	8/29/2011 4:15:00 PM	8/26/2011 11:30:00 AM	8/26/2011 11:50:00 AM	8/26/2011 12:10:00 PM	8/26/2011 12:50:00 PM	8/26/2011 1:20:00 PM	8/26/2011 1:50:00 PM	9/2/2011	9/2/2011	9/2/2011	9/2/2011	9/2/2011	9/2/2011	9/2/2011	9/2/2011	8/30/2011 3:10:00 PM	8/30/2011 3:40:00 PM	8/30/2011 4:00:00 PM	8/30/2011 4:30:00 PM	8/30/2011 5:00:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N
			Field Duplicate Parent Sample															VP51-040.00					
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,1,1-Trichloroethane	71-55-6	200	200	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	75-35-4	7	7	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	71-43-2	5	5		1 U	1 U	1 U	1 U	1 U	1 U													
Chlorobenzene	108-90-7	100	100	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	2 U	6.3	5.7	2.9	2.4	4.8	0.5 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	100-41-4	700	700		1 U	1 U	1 U	1 U	1 U	1 U													
m,p-Xylene	179601-23-1	10,000	10,000		1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U													
o-Xylene	95-47-6	10,000	10,000		1 U	1 U	1 U	1 U	1 U	1 U													
Tetrachloroethene	127-18-4	5	5	2 U	1 U	1 U	1 U	1 U	1 U	1.4	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	108-88-3	1,000	1,000		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U													
trans-1,2-Dichloroethene	156-60-5	100	100	2 U	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	79-01-6	**5**	**5**	**49**	**950**	**790**	**400**	**130**	**18**	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-52	VP-52	VP-53	VP-53	VP-53	VP-53	VP-53	VP-53	VP-53	VP-55	VP-55	VP-55	VP-55	VP-56	VP-56	VP-56	VP-56	VP-56	VP-56	VP-56
			Sample ID	VP52-040.00	VP52-045.00	VP-5315A	VP-5320A	VP-5325A	VP-5330A	VP-5335A	VP-5340A	VP-5342A	VP-5515A	VP-5520A	VP-5525A	VP-5530A	DUP06-1004A	VP-5610A	VP-5615A	VP-5620A	VP-5625A	VP-5630A	VP-5635A
			Sample Depth	40	45	15	20	25	30	35	40	42	15	20	25	30	30	10	15	20	25	30	35
			Sample Date & Time	8/30/2011 5:30:00 PM	8/30/2011 6:00:00 PM	8/24/2011 11:25:00 AM	8/24/2011 11:50:00 AM	8/24/2011 12:20:00 PM	8/24/2011 1:00:00 PM	8/24/2011 1:30:00 PM	8/24/2011 2:20:00 PM	8/24/2011 3:10:00 PM	10/4/2011 8:55:00 AM	10/4/2011 9:25:00 AM	10/4/2011 10:00:00 AM	10/4/2011 10:30:00 AM	10/4/2011 2:10:00 PM	10/4/2011 12:00:00 PM	10/4/2011 12:20:00 PM	10/4/2011 12:45:00 PM	10/4/2011 1:20:00 PM	10/4/2011 2:05:00 PM	10/4/2011 3:15:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
			Field Duplicate Parent Sample														VP-5630A						
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,1,1-Trichloroethane	71-55-6	200	200	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	7	7	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U
Benzene	71-43-2	5	5			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U
Chlorobenzene	108-90-7	100	100	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	2 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
Ethylbenzene	100-41-4	700	700			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U
m,p-Xylene	179601-23-1	10,000	10,000			1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 UJ	1.5 U	1.5 U	1.5 U	1.5 U	1.5 UJ	1.5 U	1.5 U	1.5 U
o-Xylene	95-47-6	10,000	10,000			1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U
Tetrachloroethene	127-18-4	5	5	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U
Toluene	108-88-3	1,000	1,000			0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	156-60-5	100	100	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U
Trichloroethene	79-01-6	**5**	**5**	2 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	**310**	1 U	1 U	1 UJ	**5.3**	**430**	1 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-57	VP-57	VP-57	VP-57	VP-57	VP-57	VP-57	VP-57	VP-58	VP-58	VP-58	VP-58	VP-58	VP-58	WP-01	WP-01	WP-01	WP-01	WP-01
			Sample ID	DUP07-1005A	VP-5710A	VP-5715A	VP-5720A	VP-5725A	VP-5730A	VP-5735A	VP-5740A	VP-5810A	VP-5815A	VP-5820A	VP-5825A	VP-5830A	VP-5833A	WP-01-010.00	WP-01-015.00	WP-01-020.00	WP-01-025.00	WP-01-030.00
			Sample Depth	20	10	15	20	25	30	35	40	10	15	20	25	30	33					
				20	10	15	20	25	30	35	40	10	15	20	25	30	33	10	15	20	25	30
			Sample Date & Time	10/5/2011 9:35:00 AM	10/5/2011 8:55:00 AM	10/5/2011 9:10:00 AM	10/5/2011 9:30:00 AM	10/5/2011 10:00:00 AM	10/5/2011 10:00:00 AM	10/5/2011 10:55:00 AM	10/5/2011 11:35:00 AM	10/5/2011 1:15:00 PM	10/5/2011 1:35:00 PM	10/5/2011 2:00:00 PM	10/5/2011 3:00:00 PM	10/5/2011 3:25:00 PM	10/5/2011 3:50:00 PM	8/31/2011 8:36:00 AM	8/31/2011 9:06:00 AM	8/31/2011 9:56:00 AM	8/31/2011 10:26:00 AM	8/31/2011 10:57:00 AM
			Sample Type	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample	VP-5720A																		
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																			
1,1,1-Trichloroethane	71-55-6	200	200	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	75-35-4	7	7	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	2 U	2 U	2 U	2 U	1.3 J
Benzene	71-43-2	5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ					
Chlorobenzene	108-90-7	100	100	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	0.5 U	0.5 U	0.5 U	0.5 U	6.7	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	2 U	2 U	2 U	2	55
Ethylbenzene	100-41-4	700	700	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ					
m,p-Xylene	179601-23-1	10,000	10,000	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 UJ	1.5 UJ					
o-Xylene	95-47-6	10,000	10,000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ					
Tetrachloroethene	127-18-4	5	5	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	2 U	2 U	2 U	2 U	1.2 J
Toluene	108-88-3	1,000	1,000	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ					
trans-1,2-Dichloroethene	156-60-5	100	100	1 U	1 U	1 U	1 U	1 U	1.5	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	2 U	2 U	2 U	2 U	1.6 J
Trichloroethene	79-01-6	**5**	**5**	2.6	1 U	1 U	1.3	**320**	**640**	**13**	1 U	1 U	1 U	1 U	1 U	1 UJ	1 UJ	2 U	2 U	**41**	**74**	**7200**

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
VT GWPR - Vermont Ground Water Protection Rule
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VALUE Indicates exceedance of a screening
VALUE Values in italics exceed all screening
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N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

			Sample Location	WP-01	WP-01	WP-02	WP-02	WP-02	WP-02	WP-02	WP-02	WP-03	WP-03	WP-03	WP-03	WP-03	WP-04	WP-04	WP-04	WP-04	WP-04	WP-05
			Sample ID	WP-01-035.00	WP-01-039.70	WP-02-010.05	WP-02-014.81	WP-02-019.74	WP-02-024.80	WP-02-029.72	WP-02-034.80	WP-03-010.00	WP-03-015.00	WP-03-020.00	WP-03-025.00	WP-03-041.20	WP-04-009.93	WP-04-014.90	WP-04-019.95	WP-04-025.20	WP-04-030.30	WP-05-005.15
			Sample Depth	35	39.7	10.05	14.81	19.74	24.8	29.72	34.8	10	15	20	25	41.2	9.93	14.9	19.95	25.2	30.3	
			Sample Date & Time	8/31/2011 11:31:00 AM	8/31/2011 12:28:00 PM	8/31/2011 9:20:00 AM	8/31/2011 9:49:00 AM	8/31/2011 10:15:00 AM	8/31/2011 10:49:00 AM	8/31/2011 11:23:00 AM	8/31/2011 12:05:00 PM	8/31/2011 1:59:00 PM	8/31/2011 2:38:00 PM	8/31/2011 3:17:00 PM	8/31/2011 3:57:00 PM	8/31/2011 5:14:00 PM	8/31/2011 2:59:00 PM	8/31/2011 3:33:00 PM	8/31/2011 3:57:00 PM	8/31/2011 4:41:00 PM	8/31/2011 5:36:00 PM	9/1/2011 10:37:00 AM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																			
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																			
1,1,1-Trichloroethane	71-55-6	200	200	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	75-35-4	7	7	5.3	0.7 J	2 U	1.6 J	**9.7**	**50**	**120**	**7.8**	2 U	2 U	0.51 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	71-43-2	5	5																			
Chlorobenzene	108-90-7	100	100	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	**110**	10	0.94 J	**430**	**3400**	**17000**	**31000**	**2800**	2 U	0.43 J	3.6	2 U	2 U	2 J	1.1 J	0.45 J	1 J	0.61 J	2 U
Ethylbenzene	100-41-4	700	700																			
m,p-Xylene	179601-23-1	10,000	10,000																			
o-Xylene	95-47-6	10,000	10,000																			
Tetrachloroethene	127-18-4	5	5	**9.6**	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	108-88-3	1,000	1,000																			
trans-1,2-Dichloroethene	156-60-5	100	100	3.9	2 U	2 U	4.7	26	**120**	**200 E**	9.9	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	79-01-6	**5**	**5**	**58000**	**3700**	2.6	4.4	3.2	1 J	**940**	**59**	2 U	**14**	**1300**	**7.3**	2 U	2 U	1.2 J	1.1 J	**110**	**67**	2 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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VALUE Values in italics exceed all screening
U - data qualifier indicates that the result is below the detection limit shown
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FD - Sample type indicates "field duplicate"

Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	WP-05	WP-05	WP-05	WP-05	WP-05	WP-06	WP-06	WP-06	WP-06	WP-06	WP-06	WP-06	WP-06	WP-07	WP-07	WP-07	WP-07	WP-07	WP-07
			Sample ID	WP-05-010.00	WP-05-015.00	WP-05-020.00	WP-05-025.00	WP-05-030.00	WP-06-005.22	WP-06-010.25	WP-06-015.15	WP-06-015.15-FD	WP-06-020.08	WP-06-024.85	WP-06-030.20	WP-06-035.11	WP-07-005.20	WP-07-010.20	WP-07-015.00	WP-07-015.00-FD	WP-07-019.90	WP-07-025.00
			Sample Depth						5.22	10.25	15.15	15.15	20.08	24.85	30.2	35.11	5.2	10.2	15	15	19.9	25
			Sample Date & Time	9/1/2011 11:13:00 AM	9/1/2011 11:40:00 AM	9/1/2011 12:16:00 PM	9/1/2011 12:49:00 PM	9/1/2011 1:31:00 PM	9/1/2011 10:45:00 AM	9/1/2011 10:53:00 AM	9/1/2011 11:25:00 AM	9/1/2011 11:25:00 AM	9/1/2011 12:06:00 PM	9/1/2011 12:43:00 PM	9/1/2011 1:12:00 PM	9/1/2011 1:53:00 PM	9/1/2011 2:56:00 PM	9/1/2011 3:28:00 PM	9/1/2011 3:56:00 PM	9/1/2011 3:28:00 PM	9/1/2011 4:23:00 PM	9/1/2011 5:04:00 PM
			Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	FD	N	N
			Field Duplicate Parent Sample									WP-06-015.15								WP-07-015.00		
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																			
1,1,1-Trichloroethane	71-55-6	200	200	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	75-35-4	7	7	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1.2 J	0.46 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Benzene	71-43-2	5	5																			
Chlorobenzene	108-90-7	100	100	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	2 U	2 U	2 U	2 U	0.81 J	2 U	2 U	1.7 J	1.7 J	5.8	2.7	1.3 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Ethylbenzene	100-41-4	700	700																			
m,p-Xylene	179601-23-1	10,000	10,000																			
o-Xylene	95-47-6	10,000	10,000																			
Tetrachloroethene	127-18-4	5	5	2 U	2 U	2 U	2 U	2 U	2 U	2 U	**25**	**27**	**60**	0.86 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Toluene	108-88-3	1,000	1,000																			
trans-1,2-Dichloroethene	156-60-5	100	100	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	79-01-6	**5**	**5**	2 U	0.71 J	0.57 J	**58**	**160**	2 U	2 U	**590**	**590**	**13000**	**2100**	**630**	0.78 J	2 U	2 U	2 U	2 U	2 U	2 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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Appendix D-1
Analytical Data Summary
2010 Groundwater Sample VOC Results - Profiling Locations (Screening)
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	WP-07	WP-08	WP-08	WP-08	WP-08	WP-08	WP-08	WP-08
			Sample ID	WP-07-029.10	WP-08-005.20	WP-08-010.10	WP-08-014.94	WP-08-020.20	WP-08-025.17	WP-08-030.10	WP-08-030.10-FD
			Sample Depth	29.1	5.2	10.1	14.94	20.2	25.17	30.1	30.1
			Sample Date & Time	9/1/2011 6:21:00 PM	9/1/2011 3:13:00 PM	9/1/2011 3:44:00 PM	9/1/2011 4:14:00 PM	9/1/2011 4:44:00 PM	9/1/2011 5:29:00 PM	9/1/2011 6:04:00 PM	9/1/2011 6:04:00 PM
			Sample Type	N	N	N	N	N	N	N	FD
			Field Duplicate Parent Sample								WP-08-030.10
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**								
1,1,1-Trichloroethane	71-55-6	200	200	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
1,1-Dichloroethene	75-35-4	7	7	2 U	2 U	2 U	2 U	2 U	0.62 J	2 U	2 U
Benzene	71-43-2	5	5								
Chlorobenzene	108-90-7	100	100	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene	156-59-2	**70**	**70**	2 U	2 U	2 U	2 U	2 U	5.7	2 U	2 U
Ethylbenzene	100-41-4	700	700								
m,p-Xylene	179601-23-1	10,000	10,000								
o-Xylene	95-47-6	10,000	10,000								
Tetrachloroethene	127-18-4	5	5	2 U	2 U	2 U	2 U	1.2 J	2 U	2 U	2 U
Toluene	108-88-3	1,000	1,000								
trans-1,2-Dichloroethene	156-60-5	100	100	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	79-01-6	**5**	**5**	2 U	2 U	2 U	0.82 J	**10**	**3900**	3.1	2.4

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
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Appendix D-2
Analytical Data Summary
Groundwater Sample Total Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	AIP-01	AIP-01	AL-1	AL-12	AL-12	AL-14	AL-14	AL-14	AL-15	AL-15	AL-2	AL-2	ARC-3	ARC-3	ARC-3	ASI-02D2
			Sample ID	AIP-001-0519108A	AIP-001-1110A	AL-001-121708A	AL-012-052010A	AL-012-1110A	AL-014-121608A	AL-014-051810A	AL-014-1110A	AL-015-051910A	AL-015-1110A	AL-002-051910A	AL-002-1110A	ARC-003-121708A	ARC-003-051910A	ARC-003-1110A	ASI-002D2-121808A
			Top Depth (feet below grade)																
			Bottom Depth (feet below grade)	35			35			30		30		35			35		
			Sample Date & Time	5/19/2010 11:45:00 AM	12/2/2010 3:15:00 PM	12/17/2008 10:55:00 AM	5/20/2010 9:35:00 AM	12/1/2010 10:35:00 AM	12/16/2008 2:40:00 PM	5/18/2010 4:40:00 PM	11/30/2010 9:55:00 AM	5/19/2010 4:20:00 PM	12/1/2010 2:05:00 PM	5/19/2010 4:20:00 PM	12/1/2010 12:55:00 PM	12/17/2008 10:40:00 AM	5/19/2010 3:25:00 PM	12/1/2010 1:10:00 PM	12/18/2008 3:15:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Aluminum	7429-90-5	--	--	200 U	200 U	222 U	195 J	102 J	22	50.7 J	200 U	148 J	93 J	200 U	200 U	177	443	116 J	27
Antimony	7440-36-0	6	--	0.36 J	2 U	2 U	0.7 J	2 U	2 U	0.31 J	2 U	0.39 J	2 U	0.3 J	2 U	2 U	0.35 J	2 U	2 U
Arsenic	7440-38-2	**10**	**10**	4.4 J	8.4 J	4.6	10 U	10 U	11.1 U	10 U	3.8 J	10 U	10 U	10 U	10 U	11.1 U	10 U	10 U	11.1 U
Barium	7440-39-3	**2000**	**200**	50.8 J	52 J	60.5	61.3 J	104 J	46.5	35.2 J	32.7 J	**324**	130 J	62.6 J	52.2 J	13.1	13 J	7.5 J	114
Beryllium	7440-41-7	4	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.065 J	1 U	1 U	1 U	1 U	0.035 J	1 U	1 U
Cadmium	7440-43-9	**5**	**5**	5 U	5 U	5.6 U	0.34 J	5 U	5.6 U	5 U	5 U	5 U	5 U	**45.8**	**45.5**	5.6 U	5 U	5 U	5.6 U
Calcium	7440-70-2	--	--	57146	60600	81100	24203	42700	21900	18022	21900	24322	12800	28693	25300	8070	9657	6820	108000
Chromium	7440-47-3	**100**	**100**	10 U	10 U	11.1 U	2.1 J	10 U	11.1 U	0.29 J	10 U	10 U	10 U	0.85 J	10 U	11.1 U	0.75 J	10 U	0.4
Cobalt	7440-48-4	--	--	50 U	50 U	55.6 U	6.1 J	7.1 J	55.6 U	50 U	50 U	2.2 J	50 U	2 J	50 U	55.6 U	50 U	50 U	55.6 U
Copper	7440-50-8	1300	1300	25 U	25 U	27.8 U	20.7 J	13.3 J	6.6	4.5 J	3.3 J	1.3 J	25 U	1.4 J	25 U	27.8 U	1 J	25 U	27.8 U
Iron	7439-89-6	--	--	7462	7920	3620	2694	1380	129	430	47.4 J	114	198	317	32.8 J	116	460	68.3 J	11400
Lead	7439-92-1	**15**	**15**	10 U	10 U	11.1 U	10 U	10 U	11.1 U	10 U	10 U	10 U	10 U	10 U	10 U	11.1 U	10 U	10 U	11.1 U
Magnesium	7439-95-4	--	--	13124	14600	12600	5978	12300	3460	2710 J	2800 J	7536	4020 J	8188	7030	792	1069 J	828 J	18200
Manganese	7439-96-5	--	**840**	442	476	724	**982**	**1230**	47.2	55.1	53.9	268	216	**4793**	**4320**	29.5	79	28	523
Mercury	7439-97-6	**2**	--	0.12 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	7440-02-0	--	**100**	40 U	40 U	44.4 U	4.3 J	6.3 J	44.4 U	40 U	40 U	2 J	3.2 J	2.6 J	3.8 J	44.4 U	0.56 J	40 U	0.9
Potassium	7440-09-7	--	--	1485 J	1940 J	1650	5427	8630	2190	2024 J	3150 J	957 J	242 J	1446 J	2060 J	212	376 J	347 J	2010
Selenium	7782-49-2	50	50	35 U	35 U	38.9 U	35 U	35 U	38.9 U	35 U	35 U	35 U	35 U	35 U	35 U	38.9 U	35 U	35 U	38.9 U
Silver	7440-22-4	--	--	10 U	10 U	11.1 U	10 U	10 U	11.1 U	10 U	10 U	10 U	10 U	0.41 J	10 U	11.1 U	10 U	10 U	4.1
Sodium	7440-23-5	--	--	47115	53600	46800	88522	188000	54800	39643	42000	132795	67100	98002	111000	2190	3882 J	1920 J	173000
Thallium	7440-28-0	2	--	0.022 J	1 U	1 U	0.08 J	0.032 J	0.029	0.29 J	1 U	0.096 J	1 U	0.15 J	1 U	1 U	0.03 J	1 U	0.11
Vanadium	7440-62-2	--	--	50 U	50 U	55.6 U	50 U	50 U	55.6 U	50 U	50 U	50 U	50 U	50 U	50 U	55.6 U	50 U	50 U	55.6 U
Zinc	7440-66-6	--	--	60 U	60 U	2.4	4.7 J	3.8 J	3.3	0.75 J	3 J	0.7 J	3.7 J	3.2 J	1.4 J	66.7 U	2.6 J	1.7 J	5.2

Notes:

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N - Sample type indicates "normal"
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Appendix D-2
Analytical Data Summary
Groundwater Sample Total Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-02D2	ASI-02D2	ASI-02D2	ASI-02D2	ASI-02D2	ASI-03D2	ASI-03D2	ASI-04D2	ASI-04D2	ASI-04D2	ASI-04D2	ASI-05D2	ASI-05D2	ASI-05D2	ASI-05D2	ASI-05D2
			Sample ID	ASI-002D2-121808AD	ASI-002D2-051810A	ASI-002D2-051810D	ASI-002D2-1110A	DUP-1110B	ASI-003D2-051810A	ASI-003D2-1110A	ASI-004D2-121808A	ASI-004D2-051710A	ASI-004D2-1110A	ASI-04D2-0612A	ASI-005D2-121808A	ASI-005D2-052010A	ASI-005D2-052010D	ASI-005D2-1110A	ASI-05D2-0612A
			Top Depth (feet below grade)																
			Bottom Depth (feet below grade)		35	35			35							35	35		
			Sample Date & Time	12/18/2008 3:30:00 PM	5/18/2010 9:05:00 AM	5/18/2010 9:10:00 AM	11/29/2010 3:05:00 PM	11/29/2010 3:10:00 PM	5/18/2010 1:55:00 PM	11/29/2010 3:20:00 PM	12/18/2008 11:35:00 AM	5/17/2010 4:40:00 PM	11/30/2010 11:45:00 AM	6/7/2012 9:00:00 AM	12/18/2008 3:25:00 PM	5/20/2010 3:20:00 PM	5/20/2010 3:30:00 PM	12/2/2010 10:40:00 AM	6/6/2012 2:30:00 PM
			Sample Type	FD	N	FD	N	FD	N	N	N	N	N	N	N	N	FD	N	N
			Field Duplicate Parent Sample	ASI-002D2-121808A		ASI-002D2-051810A		ASI-002D2-1110A									ASI-005D2-052010A		
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Aluminum	7429-90-5	--	--	222 U	200 U	200 U	200 U	200 U	28.2 J	200 U	222 U	200 U	200 U	200 U	222 U	200 U	200 U	200 U	200 U
Antimony	7440-36-0	6	--	2 U	0.42 J	0.3 J	2 U	2 U	0.28 J	2 U	2 U	0.37 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Arsenic	7440-38-2	**10**	**10**	2.5	10 U	10 U	4.4 J	5.7 J	7.7 J	**12.3**	**10.2**	9.9 J	**11**	**12.2**	8.3	**10.4**	**10.8**	**11.7**	9.2
Barium	7440-39-3	**2000**	**200**	114	169 J	175 J	198 J	194 J	102 J	114 J	37.8	36.8 J	34.2 J	200 U	80.6	105 J	106 J	97.6 J	94 J
Beryllium	7440-41-7	4	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	7440-43-9	**5**	**5**	5.6 U	0.3 J	0.26 J	5 U	5 U	5 U	5 U	5.6 U	5 U	5 U	1 U	5.6 U	0.22 J	0.21 J	5 U	1 U
Calcium	7440-70-2	--	--	107000	135405	139910	135000	134000	154980	165000	63400	63284	62100	71400	76100	85667	86844	72400	86900
Chromium	7440-47-3	**100**	**100**	0.49	10 U	0.35 J	10 U	10 U	0.55 J	10 U	0.53	10 U	10 U	10 U	0.47	0.63 J	0.38 J	10 U	10 U
Cobalt	7440-48-4	--	--	55.6 U	50 U	50 U	50 U	50 U	50 U	50 U	55.6 U	50 U	50 U	1 U	55.6 U	50 U	50 U	50 U	1 U
Copper	7440-50-8	1300	1300	27.8 U	25 U	25 U	25 U	25 U	25 U	25 U	27.8 U	25 U	25 U	25 U	27.8 U	0.85 J	0.91 J	25 U	25 U
Iron	7439-89-6	--	--	11400	15028	15487	15600	15500	6167	7090	1920	1668	1780	1990	5790	6923	6987	4410	5690
Lead	7439-92-1	**15**	**15**	11.1 U	1.3 J	1.2 J	10 U	10 U	1.5 J	10 U	11.1 U	10 U	10 U	10 U	11.1 U	1.3 J	1.6 J	10 U	10 U
Magnesium	7439-95-4	--	--	17900	24358	25078	25500	25200	20738	22700	16700	16323	16600	17300	20300	21988	22037	19100	20400
Manganese	7439-96-5	--	**840**	521	669	689	621	619	**1511**	**1480**	573	583	563	642	**918**	**1155**	**1163**	**961**	**957**
Mercury	7439-97-6	**2**	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	**2.3**	0.2 U	0.02 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	7440-02-0	--	**100**	44.4 U	40 U	40 U	1 J	1.1 J	40 U	1.3 J	44.4 U	40 U	40 U	40 U	44.4 U	40 U	40 U	1.1 J	40 U
Potassium	7440-09-7	--	--	2020	2397 J	2466 J	4190 J	4080 J	1780 J	2560 J	1010	1057 J	1290 J	1280 J	2220	2621 J	2627 J	2920 J	2780 J
Selenium	7782-49-2	50	50	38.9 U	35 U	35 U	35 U	35 U	35 U	35 U	38.9 U	35 U	35 U	5 U	2.6	35 U	35 U	35 U	5 U
Silver	7440-22-4	--	--	4	10 U	10 U	10 U	10 U	10 U	10 U	3.1	10 U	10 U	10 U	3.8	10 U	10 U	10 U	10 U
Sodium	7440-23-5	--	--	170000	230585	239760	398000	361000	90181	119000	41300	46916	51400	52300	75400	101755	103085	91900	82100
Thallium	7440-28-0	2	--	0.037	0.086 J	0.043 J	1 U	1 U	0.027 J	1 U	0.026	1 U	1 U	1 U	0.025	0.028 J	1 U	1 U	1 U
Vanadium	7440-62-2	--	--	55.6 U	50 U	50 U	50 U	50 U	50 U	50 U	55.6 U	50 U	50 U	5 U	55.6 U	50 U	50 U	50 U	5 U
Zinc	7440-66-6	--	--	66.7 U	60 U	60 U	5.4 J	60 U	0.31 J	60 U	66.7 U	2.3 J	4.7 J	60 U	66.7 U	1.8 J	1.1 J	60 U	60 U

Notes:

EPA-RSL-GW-MCL- EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
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-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
Groundwater Sample Total Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-11D2	ASI-11D2	ASI-11D2	ASI-14D2	ASI-14D2	ASI-14D2	ASI-14D2	ASI-14S	ASI-14S	ASI-14S	ASI-15D2	ASI-15D2	ASI-15D2	ASI-16D2	ASI-16D2	ASI-23D2
			Sample ID	ASI-011D2-121908A	ASI-011D2-051710A	ASI-011D2-1110A	ASI-014D2-121608A	ASI-014D2-121608AD	ASI-014D2-051810A	ASI-014D2-1110A	ASI-014S-121608A	ASI-014S-051810A	ASI-014S-1110A	ASI-015D2-121808A	ASI-015D2-052010A	ASI-015D2-1110A	ASI-016D2-051910A	ASI-016D2-1110A	ASI-023D2-121608A
			Top Depth (feet below grade)																
			Bottom Depth (feet below grade)		35				35			10			35		35		
			Sample Date & Time	12/19/2008 9:55:00 AM	5/17/2010 4:50:00 PM	11/30/2010 2:15:00 PM	12/16/2008 11:20:00 AM	12/16/2008 11:55:00 AM	5/18/2010 9:00:00 AM	11/30/2010 3:40:00 PM	12/16/2008 10:25:00 AM	5/18/2010 11:45:00 AM	11/30/2010 3:30:00 PM	12/18/2008 10:00:00 AM	5/20/2010 12:00:00 PM	12/1/2010 3:10:00 PM	5/19/2010 1:30:00 PM	12/1/2010 12:35:00 PM	12/16/2008 3:05:00 PM
			Sample Type	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample					ASI-014D2-121608A											
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Aluminum	7429-90-5	--	--	222 U	200 U	200 U	222 U	19.7	200 U	200 U	32.6	573	200 U	52.7	200 U	200 U	200 U	200 U	41.7
Antimony	7440-36-0	6	--	2 U	0.28 J	2 U	2 U	2 U	0.48 J	2 U	2 U	0.25 J	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Arsenic	7440-38-2	**10**	**10**	3.3	4.6 J	6.3 J	11.1 U	11.1 U	10 U	4.9 J	11.1 U	10 U	10 U	5.3	5 J	5.7 J	4.8 J	3.5 J	11.1 U
Barium	7440-39-3	**2000**	**200**	45.8	133 J	**227**	47.1	47.4	38.2 J	40.7 J	56.2	86.8 J	156 J	86.4	140 J	110 J	63.6 J	62.1 J	22
Beryllium	7440-41-7	4	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.062 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	7440-43-9	**5**	**5**	5.6 U	0.5 J	5 U	5.6 U	5.6 U	5 U	5 U	5.6 U	0.26 J	5 U	5.6 U	0.65 J	5 U	0.075 J	5 U	5.6 U
Calcium	7440-70-2	--	--	50800	81982	125000	80800	80800	76410	80700	3030	4387 J	6930	69500	93041	79700	79535	80900	106000
Chromium	7440-47-3	**100**	**100**	0.68	10 U	10 U	11.1 U	11.1 U	10 U	10 U	11.1 U	0.96 J	10 U	1.4	0.42 J	10 U	0.31 J	10 U	5.6
Cobalt	7440-48-4	--	--	55.6 U	50 U	50 U	55.6 U	55.6 U	50 U	50 U	55.6 U	50 U	50 U	55.6 U	50 U	50 U	50 U	50 U	1.1
Copper	7440-50-8	1300	1300	27.8 U	25 U	25 U	27.8 U	27.8 U	25 U	25 U	27.8 U	1.3 J	25 U	27.8 U	25 U	25 U	1.1 J	25 U	27.8 U
Iron	7439-89-6	--	--	9310	21697	32300	6710	6710	6019	6300	13200	18055	13300	13800	18604	17600	2976	4150	1180
Lead	7439-92-1	**15**	**15**	11.1 U	2.1 J	10 U	11.1 U	11.1 U	10 U	10 U	11.1 U	10 U	10 U	1.3	3.5 J	10 U	10 U	10 U	11.1 U
Magnesium	7439-95-4	--	--	9780	15276	24600	17700	17700	16747	17900	1160	1413 J	1660 J	12500	15969	14200	12420	13200	27400
Manganese	7439-96-5	--	**840**	744	**1274**	**1760**	634	629	585	569	375	281	279	**1270**	**1785**	**1430**	808	759	270
Mercury	7439-97-6	**2**	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	7440-02-0	--	**100**	44.4 U	40 U	1.5 J	44.4 U	44.4 U	40 U	1.1 J	44.4 U	2.4 J	1.7 J	44.4 U	40 U	40 U	40 U	40 U	17.9
Potassium	7440-09-7	--	--	1570	2644 J	5000 J	1310	1220	1305 J	1730 J	268	523 J	801 J	1890	2377 J	2800 J	1600 J	2080 J	1350
Selenium	7782-49-2	50	50	38.9 U	35 U	35 U	4.3	4.1	35 U	35 U	3.5	35 U	35 U	38.9 U	35 U	35 U	35 U	35 U	4
Silver	7440-22-4	--	--	3.2	10 U	10 U	11.1 U	11.1 U	10 U	10 U	11.1 U	10 U	10 U	4.8	10 U	10 U	10 U	10 U	11.1 U
Sodium	7440-23-5	--	--	55700	157605	299000	59800	59200	58553	68900	15100	21105	54900	93700	153660	137000	56366	66100	73300
Thallium	7440-28-0	2	--	1 U	0.018 J	1 U	0.031	0.027	1 U	1 U	0.048	1 U	1 U	1 U	1 U	1 U	0.05 J	1 U	0.028
Vanadium	7440-62-2	--	--	55.6 U	50 U	50 U	55.6 U	55.6 U	50 U	50 U	55.6 U	2.2 J	50 U	55.6 U	50 U	50 U	50 U	50 U	55.6 U
Zinc	7440-66-6	--	--	3.8	7.5 J	3.8 J	66.7 U	66.7 U	0.69 J	60 U	66.7 U	4.6 J	60 U	66.7 U	0.81 J	3.6 J	4.4 J	60 U	4.1

Notes:

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VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is
N - Sample type indicates "normal"
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Appendix D-2
Analytical Data Summary
Groundwater Sample Total Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-23D2	ASI-23D2	ASI-23S	ASI-23S	ASI-23S	BF-4	BF-4	BM-3D	BM-3D	BM-3D	BM-3S	BM-3S	BR-1	BR-1	BR-1	BR-1
			Sample ID	ASI-023D2-051810A	ASI-023D2-1110A	ASI-023S-121608A	ASI-023S-051810A	ASI-023S-1110A	BF-004-052010A	BF-004-1110A	BM-03D-121708A	BM-003D-051910A	BM-003D-1110A	BM-003S-051910A	BM-003S-1110A	BR-001-121708A	BR-001-052110A	BR-001-1110A	BR-01-0612A
			Top Depth (feet below grade)																
			Bottom Depth (feet below grade)	35			20		96			35		35			96		
			Sample Date & Time	5/18/2010 10:55:00 AM	12/1/2010 10:05:00 AM	12/16/2008 4:25:00 PM	5/18/2010 1:10:00 PM	12/1/2010 9:45:00 AM	5/20/2010 3:40:00 PM	12/1/2010 1:25:00 PM	12/17/2008 10:40:00 AM	5/19/2010 11:05:00 AM	11/29/2010 3:25:00 PM	5/19/2010 1:50:00 PM	11/29/2010 3:10:00 PM	12/17/2008 1:15:00 PM	5/21/2010 8:15:00 AM	12/2/2010 9:45:00 AM	6/6/2012 7:50:00 AM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Aluminum	7429-90-5	--	--	200 U	200 U	37.5	200 U	200 U	1985	262	222 U	121 J	94.9 J	48.7 J	200 U	303	122 J	114 J	200 U
Antimony	7440-36-0	6	--	0.32 J	2 U	2 U	0.49 J	1.4 J	2 U	2 U	2 U	0.38 J	2 U	0.25 J	2 U	0.38	0.53 J	2 U	2 U
Arsenic	7440-38-2	**10**	**10**	10 U	10 U	11.1 U	10 U	10 U	9.6 J	**11.8**	11.1 U	3.4 J	5.4 J	10 U	10 U	11.1 U	10 U	10 U	0.74 J
Barium	7440-39-3	**2000**	**200**	19.8 J	18 J	141	64.6 J	46.4 J	22 J	23.1 J	76.2	59.7 J	57.4 J	24 J	31.2 J	**4600**	**2893**	**3150**	**4030**
Beryllium	7440-41-7	4	--	1 U	1 U	1 U	0.03 J	1 U	0.051 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	7440-43-9	**5**	**5**	5 U	5 U	5.6 U	0.13 J	5 U	0.34 J	5 U	5.6 U	1.4 J	5 U	5 U	5 U	5.6 U	5 U	5 U	1 U
Calcium	7440-70-2	--	--	94302	115000	14700	10583	10600	25364	41100	66300	63709	61600	29571	33100	567000	359555	428000	508000
Chromium	7440-47-3	**100**	**100**	0.28 J	10 U	11.1 U	10 U	10 U	3.5 J	10 U	11.1 U	0.51 J	10 U	0.69 J	10 U	11.1 U	0.7 J	10 U	10 U
Cobalt	7440-48-4	--	--	0.8 J	2.1 J	55.6 U	50 U	50 U	2.5 J	2.4 J	55.6 U	2 J	50 U	0.95 J	50 U	55.6 U	50 U	50 U	0.36 J
Copper	7440-50-8	1300	1300	25 U	13.5 J	27.8 U	25 U	25 U	5 J	25 U	27.8 U	25 U	25 U	2.2 J	25 U	27.8 U	2.8 J	8 J	10.2 J
Iron	7439-89-6	--	--	1186	1970	6700	12963	34400	10760	21200	55900	49698	53700	785	131	77.6	43.3 J	31 J	100 U
Lead	7439-92-1	**15**	**15**	1.8 J	10 U	11.1 U	10 U	10 U	1.9 J	10 U	11.1 U	10 U	10 U	10 U	10 U	11.1 U	2.3 J	10 U	10 U
Magnesium	7439-95-4	--	--	24800	31100	4410	2548 J	2460 J	6873	10600	8690	8316	8480	10772	11600	1360	706 J	358 J	5000 U
Manganese	7439-96-5	--	**840**	343	375	**4420**	**2206**	**1780**	270	**861**	**1070**	**1177**	**1010**	85.2	17.4	1.8	1.8 J	5.7 J	15 U
Mercury	7439-97-6	**2**	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.064 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	7440-02-0	--	**100**	15.9 J	50.6	44.4 U	0.86 J	1.5 J	4.8 J	1.6 J	44.4 U	1.7 J	1.7 J	1 J	1.3 J	6.7	3.7 J	3 J	40 U
Potassium	7440-09-7	--	--	1406 J	1880 J	1230	817 J	891 J	1086 J	2000 J	2890	2333 J	2920 J	351 J	802 J	65000	35558	36300 J	26900
Selenium	7782-49-2	50	50	35 U	35 U	38.9 U	35 U	35 U	35 U	35 U	5.8	35 U	35 U	35 U	35 U	3.9	35 U	35 U	5 U
Silver	7440-22-4	--	--	10 U	10 U	11.1 U	10 U	10 U	10 U	10 U	11.1 U	10 U	10 U	10 U	10 U	11.1 U	10 U	10 U	10 U
Sodium	7440-23-5	--	--	102130	92500	112000	57122	43000	5227	25700	114000	107615	110000	62438	136000	63200	41217	46000	35300
Thallium	7440-28-0	2	--	1 U	1 U	1 U	0.027 J	1 U	0.03 J	1 U	1 U	0.018 J	1 U	1 U	1 U	1 U	0.03 J	1 U	1 U
Vanadium	7440-62-2	--	--	50 U	50 U	55.6 U	50 U	50 U	2.7 J	50 U	55.6 U	50 U	50 U	50 U	50 U	55.6 U	50 U	50 U	5 U
Zinc	7440-66-6	--	--	1.3 J	6.8 J	2.4	60 U	6 J	6.6 J	2.3 J	66.7 U	3.4 J	2.9 J	2.5 J	1.9 J	3.2	2.3 J	3.3 J	60 U

Notes:

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Appendix D-2
Analytical Data Summary
Groundwater Sample Total Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	BW-13S	BW-13S	BW-13S	MI-01	MI-01	MI-01	MI-02	MI-02	MI-02	MI-08	MI-08	MI-08	MW-01D	MW-01D	MW-02M	MW-03D
			Sample ID	BW-013S-121808A	BW-013S-052010A	BW-013S-1110A	MI-001-121508A	MI-001-051910A	MI-001-1110A	MI-002-121508A	MI-002-051810A	MI-002-1110A	MI-008-121908A	MI-008-052010A	MI-008-1110A	MW-001D-1110A	MW-01D-0612A	MW-002M-1110A	MW-003D-1110A
			Top Depth (feet below grade)																
			Bottom Depth (feet below grade)		96			20			20			20					
			Sample Date & Time	12/18/2008 2:30:00 PM	5/20/2010 9:40:00 AM	12/2/2010 1:00:00 PM	12/15/2008 3:20:00 PM	5/19/2010 9:45:00 AM	11/29/2010 11:20:00 AM	12/15/2008 4:25:00 PM	5/18/2010 3:25:00 PM	11/29/2010 11:55:00 AM	12/19/2008 10:20:00 AM	5/20/2010 9:50:00 AM	12/2/2010 2:15:00 PM	12/1/2010 10:40:00 AM	6/7/2012 10:50:00 AM	11/29/2010 3:25:00 PM	11/29/2010 11:45:00 AM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Aluminum	7429-90-5	--	--	45.8	23.2 J	177 J	65.9	200 U	48.5 J	94.4	70.1 J	200 U	133	54.6 J	200 U	3160	647	1920	6140
Antimony	7440-36-0	6	--	2 U	0.36 J	2 U	0.37	0.36 J	2 U	2 U	0.41 J	2 U	2 U	0.34 J	2 U	2 U	2 U	2 U	0.3 J
Arsenic	7440-38-2	**10**	**10**	11.1 U	10 U	10 U	11.1 U	10 U	10 U	11.1 U	10 U	10 U	2	10 U	10 U	9.1 J	7.7	3.3 J	6.9 J
Barium	7440-39-3	**2000**	**200**	66.9	52 J	14.5 J	26.8	53.2 J	172 J	25.2	17.9 J	44.8 J	**319**	32.2 J	55.1 J	45.6 J	70.3 J	101 J	43 J
Beryllium	7440-41-7	4	--	1 U	1 U	1 U	0.036	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.097 J	1 U	1 U	0.16 J
Cadmium	7440-43-9	**5**	**5**	1	0.15 J	5 U	5.6 U	5 U	5 U	5.6 U	5 U	5 U	**54.3**	**11.3**	**13.6**	5 U	1 U	5 U	5 U
Calcium	7440-70-2	--	--	41300	23360	22800	8080	18203	35500	17900	18578	28500	27300	5173	8960	76600	96200	49300	45300
Chromium	7440-47-3	**100**	**100**	0.62	0.3 J	10 U	11.1 U	0.38 J	10 U	6.3	1.6 J	10 U	18	27.1	11.9	14.6	9 J	5.7 J	34.7
Cobalt	7440-48-4	--	--	55.6 U	50 U	50 U	55.6 U	50 U	50 U	55.6 U	50 U	50 U	5.6	1.4 J	2.6 J	4.3 J	2.7	82.2	7.4 J
Copper	7440-50-8	1300	1300	27.8 U	1.3 J	25 U	27.8 U	25 U	25 U	27.8 U	25 U	25 U	4	2.2 J	25 U	27.2	12.9 J	6.5 J	39.4
Iron	7439-89-6	--	--	121	42 J	648	114	16.6 J	61.4 J	162	109	29.6 J	17.5	12.2 J	100 U	19100	12900	15900	29000
Lead	7439-92-1	**15**	**15**	11.1 U	10 U	10 U	11.1 U	10 U	10 U	2.2	10 U	10 U	11.1 U	10 U	10 U	10 U	10 U	10 U	5.9 J
Magnesium	7439-95-4	--	--	10000	5956	5380	1390	3190 J	5740	3150	2495 J	4330 J	8620	1665 J	3190 J	19900	21700	15400	12700
Manganese	7439-96-5	--	**840**	733	30.8	37.2	5.3	15 U	5.4 J	3.4	2.3 J	1.7 J	215	99.9	165	**864**	756	739	**958**
Mercury	7439-97-6	**2**	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.02	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.031 J	0.2 U	0.2 U
Nickel	7440-02-0	--	**100**	9.6	3.1 J	1.3 J	44.4 U	40 U	40 U	44.4 U	0.89 J	40 U	13.2	2.6 J	3.7 J	17.2 J	40 U	**122**	26.2 J
Potassium	7440-09-7	--	--	784	832 J	734 J	1270	1818 J	4320 J	722	875 J	1650 J	2130	684 J	1030 J	3150 J	1980 J	6710	4330 J
Selenium	7782-49-2	50	50	38.9 U	35 U	35 U	4.2	35 U	35 U	38.9 U	35 U	35 U	38.9 U	35 U	35 U	35 U	5 U	35 U	35 U
Silver	7440-22-4	--	--	5.7	10 U	10 U	11.1 U	10 U	10 U	11.1 U	10 U	10 U	2.2	10 U	10 U	10 U	10 U	10 U	10 U
Sodium	7440-23-5	--	--	128000	126725	87100	57900	76907	205000	29500	19709	58000	125000	26185	31400	59100	60700	95000	77500
Thallium	7440-28-0	2	--	0.034	1 U	1 U	0.17	0.22 J	1 U	0.082	1 U	1 U	0.041	0.068 J	1 U	1 U	1 U	1 U	1 U
Vanadium	7440-62-2	--	--	55.6 U	50 U	50 U	55.6 U	50 U	50 U	55.6 U	50 U	50 U	55.6 U	50 U	50 U	5.5 J	1.7 J	4.5 J	11.6 J
Zinc	7440-66-6	--	--	66.7 U	2.1 J	1.4 J	66.7 U	0.72 J	4.4 J	66.7 U	1.5 J	2.9 J	38.4	4.6 J	6.2 J	19 J	90.7	25.5 J	28.4 J

Notes:

EPA-RSL-GW-MCL- EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
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VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is
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Appendix D-2
Analytical Data Summary
Groundwater Sample Total Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MW-03D	MW-04D	MW-04D	MW-04D	MW-05D	MW-05D	MW-05D2	MW-05D2	MW-06D	MW-06D	MW-06M	MW-06M	MW-07M	MW-07M	MW-08M	MW-08M
			Sample ID	MW-03D-0612A	DUP-1110C	MW-004D-1110A	MW-04D-0612A	MW-005D-1110A	MW-05D-0612A	MW-005D2-1110A	MW-05D2-0612A	MW-006D-1110A	MW-06D-0612A	MW-006M-1110A	MW-06M-0612A	MW-007M-1110A	MW-07M-0612A	MW-008M-1110A	MW-08M-0612A
			Top Depth (feet below grade)																
			Bottom Depth (feet below grade)																
			Sample Date & Time	6/7/2012 4:50:00 PM	12/2/2010 11:20:00 AM	12/2/2010 11:15:00 AM	6/6/2012 1:50:00 PM	11/30/2010 11:00:00 AM	6/6/2012 3:15:00 PM	11/30/2010 10:15:00 AM	6/5/2012 3:40:00 PM	11/30/2010 10:20:00 AM	6/6/2012 12:25:00 PM	11/30/2010 10:15:00 AM	6/6/2012 9:45:00 AM	12/2/2010 10:10:00 AM	6/5/2012 5:05:00 PM	11/30/2010 1:15:00 PM	6/6/2012 10:25:00 AM
			Sample Type	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample		MW-004D-1110A														
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Aluminum	7429-90-5	--	--	946	3340	3500	1030	5230	1850	3400	7220	7310	1640	12300	267	19800	4000	1470	124 J
Antimony	7440-36-0	6	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.39 J	2 U
Arsenic	7440-38-2	**10**	**10**	5.8	4.3 J	7.8 J	**14.7**	8.6 J	**11.7**	**15.7**	**25**	**21.1**	**27.2**	**17.2**	**14.6**	**23.7**	**24.3**	3.1 J	1.4
Barium	7440-39-3	**2000**	**200**	200 U	67.5 J	65.9 J	95.4 J	101 J	172 J	27.6 J	133 J	56.1 J	61.2 J	102 J	159 J	123 J	116 J	19.4 J	200 U
Beryllium	7440-41-7	4	--	1 U	0.079 J	0.053 J	1 U	0.11 J	1 U	0.1 J	0.7 J	0.1 J	1 U	0.2 J	1 U	0.37 J	1 U	0.051 J	1 U
Cadmium	7440-43-9	**5**	**5**	1 U	5 U	5 U	1 U	5 U	1 U	5 U	0.81 J	5 U	1 U	5 U	1 U	5 U	0.46 J	5 U	1 U
Calcium	7440-70-2	--	--	53200	138000	132000	133000	95300	97900	65400	145000	92100	96800	135000	148000	113000	143000	50400	45100
Chromium	7440-47-3	**100**	**100**	17.4	18	18.2	22	36.5	48.5	9.3 J	31.9	26	26.1	21.7	2.4 J	49.9	16.7	5.4 J	10 U
Cobalt	7440-48-4	--	--	2.9	3.9 J	3.8 J	3.4	6.8 J	6.1	5.4 J	29.5	6.6 J	4.7	13.2 J	1.8	20.2 J	12.5	5.2 J	1.6
Copper	7440-50-8	1300	1300	18.6 J	18.5 J	18.3 J	20.1 J	26.8	35.5	11.7 J	52.9	22.4 J	15.7 J	27.5	25 U	60.4	34.5	6.7 J	25 U
Iron	7439-89-6	--	--	20800	19000	19000	16200	36200	33300	10500	36700	19000	11900	39200	16600	44400	20500	8510	4650
Lead	7439-92-1	**15**	**15**	4.6 J	10 U	10 U	6 J	10 U	8.7 J	10 U	**23.6**	10 U	5.4 J	8.3 J	10 U	13.8	**18.3**	10 U	10 U
Magnesium	7439-95-4	--	--	10700	33700	32300	27700	15700	13600	12000	20900	21200	16900	28600	23100	29400	21700	12900	12100
Manganese	7439-96-5	--	**840**	692	**1700**	**1640**	**1950**	**1180**	**1230**	**849**	**3270**	**1650**	**1970**	**2950**	**2820**	**1940**	**2280**	**1020**	584
Mercury	7439-97-6	**2**	--	0.034 J	0.2 U	0.2 U	0.016 J	0.2 U	0.017 J	0.2 U	0.026 J	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	7440-02-0	--	**100**	10.1 J	15.1 J	14.9 J	13.6 J	22.3 J	18.3 J	15.4 J	73.3	23.4 J	15.1 J	38.7 J	40 U	58.5	35.8 J	28.2 J	34.6 J
Potassium	7440-09-7	--	--	1970 J	3960 J	3880 J	2310 J	6140	4020 J	2110 J	1640 J	2810 J	1610 J	4550 J	3610 J	5830	2020 J	1770 J	1330 J
Selenium	7782-49-2	50	50	5 U	35 U	35 U	5 U	35 U	5 U	35 U	5 U	35 U	5 U	35 U	5 U	35 U	5 U	35 U	5 U
Silver	7440-22-4	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Sodium	7440-23-5	--	--	60800	34000	33100	34400	101000	102000	33200	24300	28300	28600	62800	103000	115000	120000	50100	39100
Thallium	7440-28-0	2	--	1 U	0.028 J	1 U	1 U	1 U	1 U	1 U	1 U	0.02 J	1 U	0.046 J	1 U	0.11 J	1 U	0.18 J	1 U
Vanadium	7440-62-2	--	--	2.6 J	5.2 J	5.4 J	2.9 J	8.1 J	4 J	5.9 J	21.6	11 J	4.2 J	18.2 J	1.4 J	28.9 J	9.9	3.1 J	5 U
Zinc	7440-66-6	--	--	60 U	21.8 J	16.3 J	21 J	29.2 J	21.3 J	21.2 J	94.7	45 J	104	63.9	100	91.7	51.5 J	12.2 J	60 U

Notes:

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Appendix D-2
Analytical Data Summary
Groundwater Sample Total Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MW-08S	MW-08S	MW-09D	MW-09D	MW-09M	MW-09M	MW-10D	MW-10D	MW-10D	MW-11S	MW-11S	OE-2A	OE-2A	OE-2A	OE-2B	OE-2B
			Sample ID	MW-008S-1110A	MW-08S-0612A	MW-009D-1110A	MW-09D-0612A	MW-009M-1110A	MW-09M-0612A	MW-010D-1110A	MW-10D-0612A	MW-DUP01-0612A	MW-011S-1110A	MW-11S-0612A	OE-02A-121708A	OE-02A-052010A	OE-002A-1110A	OE-02B-121708A	OE-02B-052010A
			Top Depth (feet below grade)													35			35
			Bottom Depth (feet below grade)																
			Sample Date & Time	11/30/2010 1:15:00 PM	6/7/2012 9:20:00 AM	12/2/2010 10:55:00 AM	6/5/2012 10:25:00 AM	12/1/2010 3:55:00 PM	6/5/2012 11:20:00 AM	12/2/2010 1:25:00 PM	6/5/2012 2:55:00 PM	6/5/2012 3:00:00 PM	12/1/2010 10:20:00 AM	6/6/2012 2:55:00 PM	12/17/2008 2:20:00 PM	5/20/2010 12:05:00 PM	11/30/2010 1:55:00 PM	12/17/2008 2:35:00 PM	5/20/2010 12:05:00 PM
			Sample Type	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N
			Field Duplicate Parent Sample									MW-10D-0612A							
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Aluminum	7429-90-5	--	--	226	200 U	15000	1510	402	111 J	28000	1820	1900	203	200 U	88.9	404	1180	167	258
Antimony	7440-36-0	6	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.45 J	2 U	2 U	0.27 J
Arsenic	7440-38-2	**10**	**10**	10 U	0.82 J	**13**	8.1	10 U	1.9	**22.3**	4.1	4.4	2.8 J	0.71 J	7.4	**11.7**	**15.9**	11.1 U	10 U
Barium	7440-39-3	**2000**	**200**	144 J	101 J	60.7 J	200 U	70.1 J	83.4 J	110 J	50.3 J	52 J	45.4 J	119 J	70.9	113 J	69.8 J	42.1	50.3 J
Beryllium	7440-41-7	4	--	1 U	1 U	0.29 J	1 U	1 U	1 U	0.63 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.039	0.048 J
Cadmium	7440-43-9	**5**	**5**	5 U	1 U	5 U	1 U	5 U	1 U	5 U	1 U	1 U	5 U	1 U	5.6 U	0.12 J	5 U	0.16	5 U
Calcium	7440-70-2	--	--	44700	42700	63900	75900	50700	59900	90100	87900	86800	29700	63800	112000	136115	106000	4010	2634 J
Chromium	7440-47-3	**100**	**100**	10 U	10 U	54.6	24.9	10 U	2.6 J	62.3	8.2 J	8.6 J	10 U	3.2 J	11.1 U	1.5 J	2.3 J	11.1 U	10 U
Cobalt	7440-48-4	--	--	4.4 J	0.5 J	17 J	4.7	2 J	2.1	31.9 J	8.1	7.8	50 U	0.34 J	55.6 U	50 U	50 U	1	1.4 J
Copper	7440-50-8	1300	1300	25 U	25 U	51.2	19.7 J	2.5 J	25 U	92.8	22.5 J	23.5 J	2.8 J	25 U	27.8 U	2.7 J	5.2 J	27.8 U	1.4 J
Iron	7439-89-6	--	--	645	215	37800	9560	8040	5440	64500	8520	9060	471	180	986	2000	3660	476	467
Lead	7439-92-1	**15**	**15**	10 U	10 U	10.9	6.9 J	10 U	10 U	**25.1**	8.5 J	9.6 J	10 U	10 U	11.1 U	2.5 J	10 U	11.1 U	10 U
Magnesium	7439-95-4	--	--	12100	14700	16700	10400	18400	16400	31400	17100	16800	4650 J	8400	19500	23949	19300	719	769 J
Manganese	7439-96-5	--	**840**	706	80.4	**1440**	**1120**	**1210**	**994**	**2100**	**1140**	**1130**	35	5.9 J	**851**	**1138**	**874**	50.7	38.7
Mercury	7439-97-6	**2**	--	0.2 U	0.022 J	0.2 U	0.023 J	0.2 U	0.2 U	0.2 U	0.021 J	0.2 U	0.2 U	0.2 U	0.2 U	0.088 J	0.2 U	0.2 U	0.2 U
Nickel	7440-02-0	--	**100**	35.3 J	10.9 J	51	15.2 J	7 J	40 U	90.3	20.3 J	21.3 J	3.8 J	37.3 J	44.4 U	1.5 J	5.5 J	1.9	1.6 J
Potassium	7440-09-7	--	--	4300 J	2350 J	4390 J	1430 J	3510 J	2520 J	5530	1940 J	2000 J	2370 J	3070 J	1700	2348 J	2660 J	603	1540 J
Selenium	7782-49-2	50	50	35 U	5 U	35 U	5 U	35 U	5 U	35 U	5 U	5 U	35 U	5 U	38.9 U	35 U	35 U	38.9 U	35 U
Silver	7440-22-4	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	11.1 U	10 U	10 U	11.1 U	10 U
Sodium	7440-23-5	--	--	90700	74000	12100	19100	333000	310000	44400	38300	38800	199000	349000	245000	386415	249000	12400	7740
Thallium	7440-28-0	2	--	1 U	1 U	0.077 J	1 U	1 U	1 U	0.19 J	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.021	0.22 J
Vanadium	7440-62-2	--	--	50 U	5 U	22.9 J	3.6 J	0.62 J	5 U	43.5 J	5.1	5.1	50 U	5 U	55.6 U	50 U	1.5 J	55.6 U	50 U
Zinc	7440-66-6	--	--	7.3 J	60 U	71.2	18.4 J	5.5 J	60 U	134	275	289	5.7 J	60 U	66.7 U	7 J	9.4 J	66.7 U	2.6 J

Notes:

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Appendix D-2
Analytical Data Summary
Groundwater Sample Total Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	OE-2B	OE-2B	VP-03	VP-03	VP-03	VP-08	VP-08	VP-08	VP-10	VP-10	VP-10	VP-10	VP-14	VP-14	VP-14	VP-14
			Sample ID	DUP-1110A	OE-002B-1110A	VP-0315-071510AX	VP-0325-071510AX	VP-0338-071510AX	VP-0815-071210AX	VP-0840-071210AX	VP-0825-071210AX	VP-1015-071510AX	VP-1025-071510AD	VP-1025-071510AX	VP-1040-071510AX	VP-1415-071910AX	VP-1425-071910AD	VP-1425-071910AX	VP-1440-071910AX
			Top Depth (feet below grade)																
			Bottom Depth (feet below grade)			15	25	38	15	40	25	15	25	25	40	15	25	25	40
			Sample Date & Time	11/30/2010 2:10:00 PM	11/30/2010 2:05:00 PM	7/15/2010 8:35:00 AM	7/15/2010 9:05:00 AM	7/15/2010 10:00:00 AM	7/12/2010 1:20:00 PM	7/12/2010 3:20:00 PM	7/13/2010 2:25:00 PM	7/15/2010 2:55:00 PM	7/15/2010 3:40:00 PM	7/15/2010 3:35:00 PM	7/15/2010 4:45:00 PM	7/19/2010 4:25:00 PM	7/19/2010 5:05:00 PM	7/19/2010 5:00:00 PM	7/19/2010 6:05:00 PM
			Sample Type	FD	N	N	N	N	N	N	N	N	FD	N	N	N	FD	N	N
			Field Duplicate Parent Sample	OE-002B-1110A									VP-1025-071510AX				VP-1425-071910AX		
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Aluminum	7429-90-5	--	--	149 J	169 J	1850	9866	7024	4709	8644	1277	17521	77554	65671	18986	9820	13920	14294	41470
Antimony	7440-36-0	6	--	2 U	2 U	0.17 J	0.47 J	0.43 J	0.49 J	0.71 J	0.44 J	0.51 J	0.81 J	0.91 J	0.43 J	0.26 J	0.38 J	0.45 J	0.41 J
Arsenic	7440-38-2	**10**	**10**	10 U	3.2 J	10 U	**15.1**	**11.4**	8.7 J	**17.6**	5.8 J	**23.9**	**48.1**	**45.8**	**17.4**	**12**	**13**	**11.9**	**42.7**
Barium	7440-39-3	**2000**	**200**	30.6 J	29.4 J	31.3 J	114 J	70.2 J	54.4 J	70.8 J	**221**	97.3 J	**390**	**405**	112 J	128 J	136 J	138 J	189 J
Beryllium	7440-41-7	4	--	1 U	1 U	0.11 J	0.3 J	0.21 J	0.2 J	0.36 J	0.2 J	0.57 J	1.9	2.5	0.45 J	0.22 J	0.33 J	0.36 J	1.2
Cadmium	7440-43-9	**5**	**5**	5 U	5 U	5 U	5 U	5 U	5 U	0.25 J	5 U	1.5 J	4.3 J	**5.3**	0.38 J	5 U	5 U	5 U	5 U
Calcium	7440-70-2	--	--	4450 J	4160 J	39156	36093	61842	29637	73601	42009	31542	117306	158687	66497	35773	35998	42365	256883
Chromium	7440-47-3	**100**	**100**	10 U	10 U	11.5	**101**	**112**	42.7	95.1	9.9 J	**145**	**270**	**276**	**162**	58.3	**168**	**168**	**114**
Cobalt	7440-48-4	--	--	3.6 J	4.3 J	1.3 J	18.1 J	7.3 J	4.4 J	14.4 J	9.3 J	24.6 J	229	251	22.8 J	22.5 J	29 J	30.6 J	75.8
Copper	7440-50-8	1300	1300	25 U	25 U	25 U	53.9	42.4	49	90.2	18.8 J	72.1	513	605	87.1	28.6	47	52.9	151
Iron	7439-89-6	--	--	1030	1260	4436	28455	47794	13784	58943	4937	46083	156999	124495	96691	29994	39494	40091	146283
Lead	7439-92-1	**15**	**15**	10 U	10 U	4.6 J	14.4	15	8.1 J	**19.8**	3.9 J	**21.7**	**126**	**150**	**22.9**	7 J	14.9	**16.9**	**77**
Magnesium	7439-95-4	--	--	892 J	877 J	7143	12026	16985	6053	18872	8156	9924	51638	41888	18480	10633	13541	13742	48661
Manganese	7439-96-5	--	**840**	285	332	70.7	365	**979**	193	**1788**	160	**1158**	**2195**	**1947**	**2414**	**3042**	**1883**	**1918**	**6639**
Mercury	7439-97-6	**2**	--	0.2 U	0.2 U	0.2 U	0.2 U	**3.4**	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	7440-02-0	--	**100**	2.9 J	3.7 J	16.9 J	75.3	43.7	39.7 J	78.7	37.6 J	93.9	**677**	**737**	96.3	50.1	**107**	**108**	**221**
Potassium	7440-09-7	--	--	771 J	768 J	2205 J	3747 J	3583 J	3573 J	3311 J	4922 J	3445 J	10610	9328	4970 J	2903 J	6076	6076	6421
Selenium	7782-49-2	50	50	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	3.7 J	35 U
Silver	7440-22-4	--	--	10 U	10 U	10 U	10 U	10 U	0.45 J	0.46 J	10 U	10 U	10 U	10 U	10 U	0.53 J	10 U	0.54 J	0.49 J
Sodium	7440-23-5	--	--	11100	10200	99050	78744	52108	206749	53887	486871	45594	384633	366295	77557	289082	351186	349267	59943
Thallium	7440-28-0	2	--	1 U	1 U	1 U	0.11 J	0.087 J	0.12 J	0.11 J	0.17 J	0.12 J	0.91 J	0.98 J	0.15 J	0.1 J	0.12 J	0.15 J	0.47 J
Vanadium	7440-62-2	--	--	50 U	50 U	3.4 J	23.3 J	14.2 J	11.9 J	20.4 J	7.5 J	31.2 J	171	161	37.5 J	18.2 J	25.3 J	26.3 J	75.3
Zinc	7440-66-6	--	--	2.6 J	4.7 J	27.5 J	198	184	853	1527	301	143	593	577	327	88.5	137	141	334

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Groundwater Sample Total Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-20	VP-20	VP-20	VP-22	VP-22	VP-23	VP-25	VP-25	VP-25	VP-25	VP-27	VP-27	VP-27	VP-33	VP-34	VP-35
			Sample ID	VP-2015-072010AX	VP-2025-072010AX	VP-2038-072010AX	VP-2215-072110AX	VP-2225-072110AX	VP-2335-072110AX	VP-2515-072310AX	VP-2525-072310AD	VP-2525-072310AX	VP-2540-072310AX	VP-2715-072410AX	VP-2725-072410AX	VP-2740-072410AX	VP-3320A	VP-3425A	VP-3525A
			Top Depth (feet below grade)														20	25	25
			Bottom Depth (feet below grade)	15	25	38	15	25	35	15	25	25	40	15	25	40	20	25	25
			Sample Date & Time	7/20/2010 4:10:00 PM	7/20/2010 5:05:00 PM	7/20/2010 6:55:00 PM	7/21/2010 8:40:00 AM	7/21/2010 9:55:00 AM	7/21/2010 4:30:00 PM	7/23/2010 10:30:00 AM	7/23/2010 11:25:00 AM	7/23/2010 11:20:00 AM	7/23/2010 1:00:00 PM	7/24/2010 10:55:00 AM	7/24/2010 11:45:00 AM	7/24/2010 1:05:00 PM	8/18/2011 9:25:00 AM	8/25/2011 1:25:00 PM	8/25/2011 9:25:00 AM
			Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample								VP-2525-072310AX								
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Aluminum	7429-90-5	--	--	19281	83823	161731	11871	124979	164483	1238	26107	30267	48215	1707	24865	58727	41000	12000	28000
Antimony	7440-36-0	6	--	0.3 J	0.43 J	0.35 J	0.21 J	0.35 J	0.32 J	2 U	0.29 J	0.33 J	0.26 J	2 U	0.26 J	0.34 J	20 U	20 U	20 U
Arsenic	7440-38-2	**10**	**10**	**28.8**	**106**	**145**	**27.9**	**117**	**156**	10 U	**25.7**	**28.5**	**34**	3.6 J	**27.8**	**51.9**	**25**	20 U	**20**
Barium	7440-39-3	**2000**	**200**	113 J	**415**	**1254**	**311**	**638**	**983**	12.8 J	107 J	117 J	158 J	45.1 J	98 J	195 J	190	130	130
Beryllium	7440-41-7	4	--	0.51 J	1.7	3	0.39 J	2.3	2.1	1 U	0.8 J	0.86 J	0.73 J	1 U	0.62 J	0.96 J	8 U	8 U	8 U
Cadmium	7440-43-9	**5**	**5**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U
Calcium	7440-70-2	--	--	48604	393928	1171926	120412	801559	1138366	32575	76304	85780	117637	38835	87373	195974	28000	67000	180000
Chromium	7440-47-3	**100**	**100**	64.2	**209**	**322**	47.2	**254**	**330**	8 J	71.7	80.5	99.7	10.5	54.8	**190**	**190**	46	66
Cobalt	7440-48-4	--	--	28.9 J	168	310	10.9 J	246	278	1.5 J	59.1	68.6	59.1	3.2 J	46.5 J	79.8	39	48	34
Copper	7440-50-8	1300	1300	71.5	364	703	47.9	498	693	25 U	94.6	104	136	25 U	82.2	190	130	34	73
Iron	7439-89-6	--	--	51939	274568	419627	38557	371000	412060	3447	165061	189371	126919	5624	99344	152797	86000	22000	90000
Lead	7439-92-1	**15**	**15**	**24**	**139**	**270**	**21**	**185**	**222**	2.3 J	**52.2**	**55.1**	**51.8**	2.7 J	**41.4**	**67.8**	**32**	20 U	**24**
Magnesium	7439-95-4	--	--	13249	85826	166435	22359	142283	155920	13369	28848	32478	42406	12988	37410	53922	24000	33000	47000
Manganese	7439-96-5	--	**840**	**1763**	**10691**	**34136**	724	**21665**	**30798**	234	**7898**	**8936**	**4204**	**6870**	**5129**	**5962**	**2000**	**1300**	**3900**
Mercury	7439-97-6	**2**	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U			
Nickel	7440-02-0	--	**100**	81.7	**464**	**820**	46.1	**617**	**756**	7.2 J	**156**	**179**	**161**	15.7 J	**138**	**237**	**160**	100	98
Potassium	7440-09-7	--	--	3798 J	10452	17111	6285	12837	15668	2157 J	5133	5400	6270	1555 J	4399 J	7151			
Selenium	7782-49-2	50	50	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	4 J	35 U	3.3 J	35 U	20 U	20 U	20 U
Silver	7440-22-4	--	--	0.7 J	1.4 J	1.3 J	10 U	10 U	0.34 J	10 U	0.67 J	1.2 J	10 U	10 U	10 U	0.35 J	10 U	10 U	10 U
Sodium	7440-23-5	--	--	104287	101322	31163	341180	153634	38710	30162	150183	147824	39759	189129	162759	15625			
Thallium	7440-28-0	2	--	0.14 J	0.66 J	1.4	0.073 J	0.96 J	1.1	1 U	0.22 J	0.25 J	0.27 J	1 U	0.21 J	0.36 J	20 U	20 U	20 U
Vanadium	7440-62-2	--	--	32.4 J	146	257	22.2 J	186	250	2.1 J	52.6	59.7	75.8	3.2 J	45.6 J	97.6	93	44	62
Zinc	7440-66-6	--	--	130	586	1226	122	787	1233	50.3 J	203	237	304	49.2 J	202	519	220	73	140

Notes:

EPA-RSL-GW-MCL- EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
Groundwater Sample Total Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	VP-36	VP-37	VP-38	VP-38	VP-39	VP-40	VP-42	VP-43	VP-45	VP-45	VP-49	VP-53	VP-54
			Sample ID	VP-3625A	VP-3725A	DUP04-0823A	VP-3830A	VP-3930A	VP-4025A	VP-4235A	VP-4330A	VP-4505A	VP-4530A	VP-4925A	VP-5325A	VP-5430A
			Top Depth (feet below grade)	25	25	30	30	30	25	35	30	5	30	25	25	30
			Bottom Depth (feet below grade)	25	25	30	30	30	25	35	30	5	30	25	25	30
			Sample Date & Time	8/22/2011 8:55:00 AM	8/23/2011 2:00:00 PM	8/23/2011 9:55:00 AM	8/23/2011 9:50:00 AM	8/19/2011	8/24/2011 9:20:00 AM	8/16/2011 3:45:00 PM	8/16/2011 9:40:00 AM	8/17/2011 4:40:00 PM	8/17/2011 9:50:00 AM	8/29/2011 2:35:00 PM	8/24/2011 12:20:00 PM	8/22/2011 1:30:00 PM
			Sample Type	N	N	FD	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample			VP-3830A										
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**													
Aluminum	7429-90-5	--	--	57000	61000 J	62000	60000	17000	63000	8100	4000	12000	430000	810 J	4600	61000
Antimony	7440-36-0	6	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Arsenic	7440-38-2	**10**	**10**	**40**	**36 J**	**55**	**59**	20 U	**50**	20 U	20 U	20 U	**240**	20 U	20 U	**42**
Barium	7440-39-3	**2000**	**200**	**210**	**260**	200	200	72	**230**	52	26	46	**780**	**210**	26	**210**
Beryllium	7440-41-7	4	--	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U
Cadmium	7440-43-9	**5**	**5**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**27**	10 U	10 U	10 U
Calcium	7440-70-2	--	--	200000	260000	220000	220000	120000	260000	93000	26000	13000	600000	160000	10000	190000
Chromium	7440-47-3	**100**	**100**	**170**	**130 J**	**140**	**140**	44	**130**	67	26	32	**740**	20 U	29	**170**
Cobalt	7440-48-4	--	--	64	66 J	72	71	20 U	72	20 U	20 U	20 U	390	20 U	20 U	63
Copper	7440-50-8	1300	1300	150	150 J	140	130	40	160	32	20 U	44	1000	20 U	20 U	150
Iron	7439-89-6	--	--	180000	160000 J	160000	150000	51000	150000	23000	11000	24000	990000	15000	10000	160000
Lead	7439-92-1	**15**	**15**	**45**	**45 J**	**47**	**49**	20 U	**51**	20 U	20 U	20 U	**250**	20 U	20 U	**41**
Magnesium	7439-95-4	--	--	51000	64000 J	55000	54000	29000	64000	18000	11000	6700	310000	27000	6000	62000
Manganese	7439-96-5	--	**840**	**6400**	**7400**	**6100**	**6100**	**2100**	**5800**	**1100**	380	**870**	**24000**	**2300**	670	**5200**
Mercury	7439-97-6	**2**	--													
Nickel	7440-02-0	--	**100**	**200**	**200 J**	**210**	**200**	52	**210**	29	63	34	**1100**	20 U	26	**190**
Potassium	7440-09-7	--	--													
Selenium	7782-49-2	50	50	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	43	20 U	20 U	20 U
Silver	7440-22-4	--	--	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	50 U	10 U	10 U	10 U
Sodium	7440-23-5	--	--													
Thallium	7440-28-0	2	--	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Vanadium	7440-62-2	--	--	120	130 J	130	130	38	140	20 U	20 U	35	700	20 U	20 U	130
Zinc	7440-66-6	--	--	300	300 J	300	290	78	320	99	55	42	1900	35 B	23	330

Notes:

EPA-RSL-GW-MCL- EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
Groundwater Sample Dissolved Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	AL-1	AL-14	ARC-3	ASI-02D2	ASI-02D2	ASI-04D2	ASI-05D2	ASI-11D2	ASI-14D2	ASI-14D2	ASI-14S	ASI-15D2	ASI-23D2	ASI-23S	BM-3D	BR-1	BW-13S	MI-01	MI-02	MI-08	OE-2A	OE-2B
			Sample ID	AL-001-121708A	AL-014-121608A	ARC-003-121708A	ASI-002D2-121808A	ASI-002D2-121808AD	ASI-004D2-121808A	ASI-005D2-121808A	ASI-011D2-121908A	ASI-014D2-121608A	ASI-014D2-121608AD	ASI-014S-121608A	ASI-015D2-121808A	ASI-023D2-121608A	ASI-023S-121608A	BM-03D-121708A	BR-001-121708A	BW-013S-121808A	MI-001-121508A	MI-002-121508A	MI-008-121908A	OE-02A-121708A	OE-02B-121708A
			Sample Date & Time	12/17/2008 10:55:00 AM	12/16/2008 2:40:00 PM	12/17/2008 10:40:00 AM	12/18/2008 3:15:00 PM	12/18/2008 3:30:00 PM	12/18/2008 11:35:00 AM	12/18/2008 3:25:00 PM	12/19/2008 9:55:00 AM	12/16/2008 11:20:00 AM	12/16/2008 11:55:00 AM	12/16/2008 10:25:00 AM	12/18/2008 10:00:00 AM	12/16/2008 3:05:00 PM	12/16/2008 4:25:00 PM	12/17/2008 10:40:00 AM	12/17/2008 1:15:00 PM	12/18/2008 2:30:00 PM	12/15/2008 3:20:00 PM	12/15/2008 4:25:00 PM	12/19/2008 10:20:00 AM	12/17/2008 2:20:00 PM	12/17/2008 2:35:00 PM
			Sample Type	N	N	N	N	FD	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample					ASI-002D2-121808A					ASI-014D2-121608A												
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																						
Aluminum	7429-90-5	--	--	31.4	45.5	46.5	23.1	222 U	22.3	222 U	222 U	222 U	222 U	222 U	22.2	29.7	86.3	222 U	170	22.3	222 U	222 U	113	222 U	138
Antimony	7440-36-0	6	--	0.13	0.39	0.37	0.44	0.22	0.12	0.12	0.1	0.17	0.14	0.15	0.1	0.29	0.15	0.14	0.34	0.11	0.22	0.18	0.17	0.29	0.15
Arsenic	7440-38-2	10	10	2.1	11.1 U	11.1 U	11.1 U	11.1 U	8.2	5.7	3.1	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	5.5	11.1 U
Barium	7440-39-3	**2000**	**200**	61.1	44.7	13.5	120	120	40.1	84.8	47.6	47	47.3	54.4	89.1	22.4	185	74.4	**4330**	69.1	26.3	24.8	**332**	68.2	43.4
Beryllium	7440-41-7	4	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cadmium	7440-43-9	**5**	**5**	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	0.74	5.6 U	5.6 U	**54.3**	5.6 U	5.6 U
Calcium	7440-70-2	--	--	79200	21900	8220	110000	111000	65000	75000	50900	81500	81800	3020	69300	108000	14900	66900	539000	39000	8060	18300	27900	113000	4310
Chromium	7440-47-3	100	100	0.48	0.84	0.49	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	0.51	0.53	0.53	11.1 U	0.59	0.98	1.1	0.53	11.1 U	1	1.6	17.4	0.47	0.53
Cobalt	7440-48-4	--	--	55.6 U	55.6 U	0.56	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	1.2	55.6 U	2.1	55.6 U	55.6 U	0.96	0.82	55.6 U	55.6 U	5.7	55.6 U	1.1
Copper	7440-50-8	1300	1300	27.8 U	5.2	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	3.2	27.8 U	27.8 U	27.8 U	7.4	27.8 U	27.8 U
Iron	7439-89-6	--	--	3570	151	9	11500	11600	1910	5760	9110	6580	6700	13200	13400	1170	5040	53500	111 U	102	111 U	111 U	24.4	673	39
Lead	7439-92-1	15	15	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	1.9	11.1 U	11.1 U	1.3	1.5	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U
Magnesium	7439-95-4	--	--	12400	3420	792	18200	18200	17000	20000	9620	17900	18000	1120	12300	28100	5160	8760	5560 U	9390	1350	3220	8700	19900	763
Manganese	7439-96-5	--	**840**	706	50.2	11.9	544	547	600	**936**	757	630	622	371	**1290**	276	**5970**	**1050**	0.97	720	2.1	1.2	222	724	45.2
Mercury	7439-97-6	2	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	7440-02-0	--	100	44.4 U	1	0.94	44.4 U	44.4 U	44.4 U	44.4 U	44.4 U	44.4 U	44.4 U	0.93	44.4 U	16.5	1.1	44.4 U	4.3	8.6	44.4 U	44.4 U	14.2	44.4 U	1
Potassium	7440-09-7	--	--	1590	2230	306	2090	2060	1040	2340	1550	1390	1370	474	1990	1420	1470	2810	61000	658	1410	837	2200	1790	830
Selenium	7782-49-2	50	50	38.9 U	38.9 U	38.9 U	6.2	38.9 U	38.9 U	4.9	38.9 U	38.9 U	38.9 U	38.9 U	38.9 U	38.9 U	38.9 U	38.9 U	38.9 U	38.9 U	38.9 U	38.9 U	38.9 U	38.9 U	38.9 U
Silver	7440-22-4	--	--	2.3	1.3	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	2.3	2.5	11.1 U	11.1 U	4.2	3.3	4.1	3.7	11.1 U	0.58	0.77	11.1 U	5.6	11.1 U
Sodium	7440-23-5	--	--	46500	51800	2530	175000	172000	43500	80000	56800	59500	60300	15800	96800	73400	152000	113000	59500	128000	57400	29600	127000	246000	13000
Thallium	7440-28-0	2	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vanadium	7440-62-2	--	--	55.6 U	55.6 U	55.6 U	1.9	1.4	0.75	0.87	1.5	55.6 U	55.6 U	55.6 U	2.6	55.6 U	55.6 U	1.4	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U	55.6 U
Zinc	7440-66-6	--	--	66.7 U	3.9	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	5.2	66.7 U	66.7 U	66.7 U	66.7 U	4.2	4.3	66.7 U	66.7 U	3.1	66.7 U	66.7 U	40.5	2.3	2.5

Notes:

EPA-RSL-GW-MCL- EPA Maximum Contaminant

VT GWPR - Vermont Ground Water

All criteria and results are reported in micrograms per liter (µg/L)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2013 Groundwater Sample Chromium Speciation Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	MW-05D	MW-10D	MI-08	MI-08
				Sample ID	MW-05D-1213A	MW-10D-1213A	MI-08-1213A	FD-02-1213A
				Sample Date & Time	12/11/2013	12/11/2013	12/11/2013	12/11/2013
				Sample Type	N	N	N	FD
				Field Duplicate Parent Sample				MI-08-1213A
Analyte	**CAS Number**	**VT GWES**	**VT PAL**	**Reg 3**				
Chromium	7440-47-3	100	50	--	53 J	24 J	130 J	23 J
Chromium (VI)	18540-29-9	--	--	0.03	ND (<2)	ND (<2)	19	19

Notes:

VT GWPR - Vermont Ground Water Protection Rule
VT PAL - Vermont Preventative Action Level
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
J - data qualifier indicates that the result is estimated
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2010 Groundwater Sample 1,4-Dioxane Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	AIP-01	AL-12	AL-14	AL-15	AL-2	ARC-3	ASI-02D2	ASI-02D2	ASI-03D2	ASI-04D2	ASI-05D2	ASI-11D2	ASI-14D2	ASI-14S	ASI-15D2	ASI-16D2	ASI-23D2	ASI-23S	BF-4
			Sample ID	AIP-001-1110A	AL-012-1110A	AL-014-1110A	AL-015-1110A	AL-002-1110A	ARC-003-1110A	ASI-002D2-1110A	DUP-1110B	ASI-003D2-1110A	ASI-004D2-1110A	ASI-005D2-1110A	ASI-011D2-1110A	ASI-014D2-1110A	ASI-014S-1110A	ASI-015D2-1110A	ASI-016D2-1110A	ASI-023D2-1110A	ASI-023S-1110A	BF-004-1110A
			Sample Date & Time	12/2/2010	12/1/2010 10:35:00 AM	11/30/2010 9:55:00 AM	12/1/2010 2:05:00 PM	12/1/2010 12:55:00 PM	12/1/2010 1:10:00 PM	11/29/2010 3:05:00 PM	11/29/2010 3:10:00 PM	11/29/2010 3:20:00 PM	11/30/2010 11:45:00 AM	12/2/2010 10:40:00 AM	11/30/2010 2:15:00 PM	11/30/2010 3:40:00 PM	11/30/2010 3:30:00 PM	12/1/2010 3:10:00 PM	12/1/2010 12:35:00 PM	12/1/2010 10:05:00 AM	12/1/2010 9:45:00 AM	12/1/2010 1:25:00 PM
			Sample Type	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample								ASI-002D2-1110A											
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																			
1,4-Dioxane	123-91-1	--	--	2 U	2 U	2 U	2 U	2 U	2 U	20 U	20 U	500 U	2 U	2 U	100 U	2 U	2 U	200 U	400 U	50 U	2 U	2 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012

VT GWPR - Vermont Ground Water Protection Rule

All criteria and results are reported in micrograms per liter (µg/L)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2010 Groundwater Sample 1,4-Dioxane Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	BM-3D	BM-3S	BR-1	BW-13S	MI-01	MI-02	MI-08	MW-01D	MW-02M	MW-03D	MW-04D	MW-04D	MW-05D	MW-05D2	MW-07M	MW-08M	MW-08S	MW-09D	MW-09M	MW-10D
			Sample ID	BM-003D-1110A	BM-003S-1110A	BR-001-1110A	BW-013S-1110A	MI-001-1110A	MI-002-1110A	MI-008-1110A	MW-001D-1110A	MW-002M-1110A	MW-003D-1110A	DUP-1110C	MW-004D-1110A	MW-005D-1110A	MW-005D2-1110A	MW-007M-1110A	MW-008M-1110A	MW-008S-1110A	MW-009D-1110A	MW-009M-1110A	MW-010D-1110A
			Sample Date & Time	11/29/2010 3:25:00 PM	11/29/2010 3:10:00 PM	12/2/2010 9:45:00 AM	12/2/2010 1:00:00 PM	11/29/2010 11:20:00 AM	11/29/2010 11:55:00 AM	12/2/2010 2:15:00 PM	12/1/2010 10:40:00 AM	11/29/2010 3:25:00 PM	11/29/2010 11:45:00 AM	12/2/2010 11:20:00 AM	12/2/2010 11:15:00 AM	11/30/2010 11:00:00 AM	11/30/2010 10:15:00 AM	12/2/2010 10:10:00 AM	11/30/2010 1:15:00 PM	11/30/2010 1:15:00 PM	12/2/2010 10:55:00 AM	12/1/2010 3:55:00 PM	12/2/2010 1:25:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample											MW-004D-1110A									
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,4-Dioxane	123-91-1	--	--	10 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	20 U	4000 U	4000 U	1000 U	500 U	20 U	400 U	200 U	2 U	2 U	2 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012

VT GWPR - Vermont Ground Water Protection Rule

All criteria and results are reported in micrograms per liter (µg/L)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

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N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2010 Groundwater Sample 1,4-Dioxane Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MW-11S	OE-2A	OE-2B	OE-2B	VP-33	VP-34	VP-35	VP-36	VP-37	VP-38	VP-38	VP-39	VP-40	VP-42	VP-43	VP-45	VP-47	VP-49	VP-53	VP-54
			Sample ID	MW-011S-1110A	OE-002A-1110A	DUP-1110A	OE-002B-1110A	VP-3320A	VP-3425A	VP-3525A	VP-3625A	VP-3725A	DUP04-0823A	VP-3830A	VP-3930A	VP-4025A	VP-4235A	VP-4330A	VP-4530A	VP-4740A	VP-4925A	VP-5325A	VP-5430A
			Sample Date & Time	12/1/2010 10:20:00 AM	11/30/2010 1:55:00 PM	11/30/2010 2:10:00 PM	11/30/2010 2:05:00 PM	8/18/2011 9:25:00 AM	8/25/2011 1:25:00 PM	8/25/2011 9:25:00 AM	8/22/2011 8:55:00 AM	8/23/2011 2:00:00 PM	8/23/2011 9:55:00 AM	8/23/2011 9:50:00 AM	8/19/2011	8/24/2011 9:20:00 AM	8/16/2011 3:45:00 PM	8/16/2011 9:40:00 AM	8/17/2011 9:50:00 AM	8/17/2011 2:40:00 PM	8/29/2011 2:35:00 PM	8/24/2011 12:20:00 PM	8/22/2011 1:30:00 PM
			Sample Type	N	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample			OE-002B-1110A							VP-3830A										
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																				
1,4-Dioxane	123-91-1	--	--	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012

VT GWPR - Vermont Ground Water Protection Rule

All criteria and results are reported in micrograms per liter (µg/L)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2010 Groundwater Sample Other VOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	AIP-01	AL-12	AL-14	AL-15	AL-2	ARC-3	ASI-02D2	ASI-02D2	ASI-03D2	ASI-04D2	ASI-05D2	ASI-05D2	ASI-11D2	ASI-14D2	ASI-14S
			Sample ID	AIP-001-0519108A	AL-012-052010A	AL-014-051810A	AL-015-051910A	AL-002-051910A	ARC-003-051910A	ASI-002D2-051810A	ASI-002D2-051810D	ASI-003D2-051810A	ASI-004D2-051710A	ASI-005D2-052010A	ASI-005D2-052010D	ASI-011D2-051710A	ASI-014D2-051810A	ASI-014S-051810A
			Sample Date & Time	5/19/2010 11:45:00 AM	5/20/2010 9:35:00 AM	5/18/2010 4:40:00 PM	5/19/2010 4:20:00 PM	5/19/2010 4:20:00 PM	5/19/2010 3:25:00 PM	5/18/2010 9:05:00 AM	5/18/2010 9:10:00 AM	5/18/2010 1:55:00 PM	5/17/2010 4:40:00 PM	5/20/2010 3:20:00 PM	5/20/2010 3:30:00 PM	5/17/2010 4:50:00 PM	5/18/2010 9:00:00 AM	5/18/2010 11:45:00 AM
			Sample Type	N	N	N	N	N	N	N	FD	N	N	N	FD	N	N	N
			Field Duplicate Parent Sample								ASI-002D2-051810A				ASI-005D2-052010A			
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**															
1,2-Dibromo-3-Chloropropane	96-12-8	0.2	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.5 U	0.5 U	5 U	0.05 U	0.05 U	0.05 U	1 U	1 U	0.05 U
1,2-Dibromoethane	106-93-4	0.05	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.5 U	0.5 U	5 U	0.05 U	0.05 U	0.05 U	1 U	1 U	0.05 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2010 Groundwater Sample Other VOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-15D2	ASI-16D2	ASI-23D2	ASI-23S	BF-4	BM-3D	BM-3S	BR-1	BW-13S	MI-01	MI-02	MI-08	OE-2A	OE-2B
			Sample ID	ASI-015D2-052010A	ASI-016D2-051910A	ASI-023D2-051810A	ASI-023S-051810A	BF-004-052010A	BM-003D-051910A	BM-003S-051910A	BR-001-052110A	BW-013S-052010A	MI-001-051910A	MI-002-051810A	MI-008-052010A	OE-02A-052010A	OE-02B-052010A
			Sample Date & Time	5/20/2010 12:00:00 PM	5/19/2010 1:30:00 PM	5/18/2010 10:55:00 AM	5/18/2010 1:10:00 PM	5/20/2010 3:40:00 PM	5/19/2010 11:05:00 AM	5/19/2010 1:50:00 PM	5/21/2010 8:15:00 AM	5/20/2010 9:40:00 AM	5/19/2010 9:45:00 AM	5/18/2010 3:25:00 PM	5/20/2010 9:50:00 AM	5/20/2010 12:05:00 PM	5/20/2010 12:05:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample														
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**														
1,2-Dibromo-3-Chloropropane	96-12-8	0.2	--	2.5 U	2.5 U	2 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dibromoethane	106-93-4	0.05	--	2.5 U	2.5 U	2 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2008, 2010 Groundwater Sample SVOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	AIP-01	AIP-01	AL-1	AL-12	AL-12	AL-14	AL-14	AL-14	AL-15	AL-15	AL-2	AL-2	ARC-3	ARC-3	ARC-3	ASI-02D2
			Sample ID	AIP-001-0519108A	AIP-001-1110A	AL-001-121708A	AL-012-052010A	AL-012-1110A	AL-014-121608A	AL-014-051810A	AL-014-1110A	AL-015-051910A	AL-015-1110A	AL-002-051910A	AL-002-1110A	ARC-003-121708A	ARC-003-051910A	ARC-003-1110A	ASI-002D2-121808A
			Sample Date & Time	5/19/2010 11:45:00 AM	12/2/2010 3:15:00 PM	12/17/2008 10:55:00 AM	5/20/2010 9:35:00 AM	12/1/2010 10:35:00 AM	12/16/2008 2:40:00 PM	5/18/2010 4:40:00 PM	11/30/2010 9:55:00 AM	5/19/2010 4:20:00 PM	12/1/2010 2:05:00 PM	5/19/2010 4:20:00 PM	12/1/2010 12:55:00 PM	12/17/2008 10:40:00 AM	5/19/2010 3:25:00 PM	12/1/2010 1:10:00 PM	12/18/2008 3:15:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
1,1'-Biphenyl	92-52-4	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2,2'-Oxybis(1-Chloropropane)	108-60-1	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2,4,5-Trichlorophenol	95-95-4	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2,4,6-Trichlorophenol	88-06-2	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2,4-Dichlorophenol	120-83-2	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2,4-Dimethylphenol	105-67-9	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2,4-Dinitrophenol	51-28-5	--	--	10 U	10 U	10 U	10 U	9.3 U	10 U	10 U	9.1 U	10 U	9.3 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U
2,4-Dinitrotoluene	121-14-2	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2,6-Dinitrotoluene	606-20-2	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2-Chloronaphthalene	91-58-7	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2-Chlorophenol	95-57-8	--	--	5 U	5 U	0.49	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2-Methylnaphthalene	91-57-6	--	--	5 U	5 U	0.93	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2-Methylphenol	95-48-7	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
2-Nitroaniline	88-74-4	--	--	10 U	10 U	10 U	10 U	9.3 U	10 U	10 U	9.1 U	10 U	9.3 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U
2-Nitrophenol	88-75-5	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
3,3'-Dichlorobenzidine	91-94-1	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
3-Nitroaniline	99-09-2	--	--	10 U	10 U	10 U	10 U	9.3 U	10 U	10 U	9.1 U	10 U	9.3 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U
4,6-Dinitro-2-Methylphenol	534-52-1	--	--	10 U	10 U	10 U	10 U	9.3 U	10 U	10 U	9.1 U	10 U	9.3 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U
4-Bromophenyl-Phenylether	101-55-3	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
4-Chloro-3-Methylphenol	59-50-7	--	--	5 U	5 U	0.58	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
4-Chloroaniline	106-47-8	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
4-Chlorophenyl-Phenylether	7005-72-3	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
4-Methylphenol	106-44-5	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
4-Nitroaniline	100-01-6	--	--	10 U	10 U	10 U	10 U	9.3 U	10 U	10 U	9.1 U	10 U	9.3 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U
4-Nitrophenol	100-02-7	--	--	10 U	10 U	10 U	10 U	9.3 U	10 U	10 U	9.1 U	10 U	9.3 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U
Acenaphthene	83-32-9	--	--	5 U	5 U	0.43	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Acenaphthylene	208-96-8	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Acetophenone	98-86-2	--	--	0.39 J	5 U	5 U	0.21 J	4.6 U	5 U	0.25 J	4.5 U	0.4 J	4.6 U	0.41 J	4.6 U	5 U	0.51 J	4.8 U	5 U
Anthracene	120-12-7	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Atrazine	1912-24-9	3	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Benzaldehyde	100-52-7	--	--	0.35 J	5 U	5 U	0.2 J	4.6 U	5 U	0.19 J	4.5 U	0.38 J	4.6 U	0.46 J	4.6 U	5 U	0.52 J	4.8 U	5 U
Benzo(A)Anthracene	56-55-3	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Benzo(A)Pyrene	50-32-8	0.2	--	5 U	5 U	5 U	5 U	4.6 U	5 U	0.15 J	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Benzo(B)Fluoranthene	205-99-2	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Benzo(G,H,I)Perylene	191-24-2	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Benzo(K)Fluoranthene	207-08-9	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Bis(2-Chloroethoxy)Methane	111-91-1	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Bis(2-Chloroethyl)Ether	111-44-4	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Bis(2-Ethylhexyl)Phthalate	117-81-7	**6**	--	1 J	2.5 J	5 U	1.2 J	4.6 U	0.32	0.67 J	4.5 U	0.59 J	4.6 U	**12**	4.6 U	0.34	1.5 J	4.8 U	0.95
Butylbenzylphthalate	85-68-7	--	--	5 U	5 U	5 U	0.29 J	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Caprolactam	105-60-2	--	--	5 U	5 U	5 U	0.22 J	4.6 U	5 U	0.49 J	4.5 U	5 U	4.6 U	0.58 J	4.6 U	5 U	5 U	4.8 U	5 U
Carbazole	86-74-8	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Chrysene	218-01-9	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Dibenz(A,H)Anthracene	53-70-3	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Dibenzofuran	132-64-9	--	--	5 U	5 U	0.18	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Diethylphthalate	84-66-2	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Dimethylphthalate	131-11-3	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Di-N-Butyl Phthalate	84-74-2	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U

Appendix D-2
Analytical Data Summary
2008, 2010 Groundwater Sample SVOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	AIP-01	AIP-01	AL-1	AL-12	AL-12	AL-14	AL-14	AL-14	AL-15	AL-15	AL-2	AL-2	ARC-3	ARC-3	ARC-3	ASI-02D2
			Sample ID	AIP-001-0519108A	AIP-001-1110A	AL-001-121708A	AL-012-052010A	AL-012-1110A	AL-014-121608A	AL-014-051810A	AL-014-1110A	AL-015-051910A	AL-015-1110A	AL-002-051910A	AL-002-1110A	ARC-003-121708A	ARC-003-051910A	ARC-003-1110A	ASI-002D2-121808A
			Sample Date & Time	5/19/2010 11:45:00 AM	12/2/2010 3:15:00 PM	12/17/2008 10:55:00 AM	5/20/2010 9:35:00 AM	12/1/2010 10:35:00 AM	12/16/2008 2:40:00 PM	5/18/2010 4:40:00 PM	11/30/2010 9:55:00 AM	5/19/2010 4:20:00 PM	12/1/2010 2:05:00 PM	5/19/2010 4:20:00 PM	12/1/2010 12:55:00 PM	12/17/2008 10:40:00 AM	5/19/2010 3:25:00 PM	12/1/2010 1:10:00 PM	12/18/2008 3:15:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Di-N-Octyl Phthalate	117-84-0	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Fluoranthene	206-44-0	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Fluorene	86-73-7	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Hexachlorobenzene	118-74-1	1	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Hexachlorobutadiene	87-68-3	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Hexachlorocyclopentadiene	77-47-4	50	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Hexachloroethane	67-72-1	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Indeno(1,2,3-Cd)Pyrene	193-39-5	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Isophorone	78-59-1	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Naphthalene	91-20-3	--	--	5 U	5 U	13	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	0.53	5 U	4.8 U	5 U
Nitrobenzene	98-95-3	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
N-Nitroso-Di-N-Propylamine	621-64-7	--	--	5 U	5 U	0.33	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
N-Nitrosodiphenylamine	86-30-6	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Pentachlorophenol	87-86-5	1	--	10 U	10 U	10 U	10 U	9.3 U	10 U	10 U	9.1 U	10 U	9.3 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U
Phenanthrene	85-01-8	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Phenol	108-95-2	--	--	5 U	5 U	0.56	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U
Pyrene	129-00-0	--	--	5 U	5 U	5 U	5 U	4.6 U	5 U	5 U	4.5 U	5 U	4.6 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2008, 2010 Groundwater Sample SVOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-02D2	ASI-02D2	ASI-02D2	ASI-02D2	ASI-02D2	ASI-03D2	ASI-03D2	ASI-04D2	ASI-04D2	ASI-04D2	ASI-05D2	ASI-05D2	ASI-05D2	ASI-05D2	ASI-11D2	ASI-11D2
			Sample ID	ASI-002D2-121808AD	ASI-002D2-051810A	ASI-002D2-051810D	ASI-002D2-1110A	DUP-1110B	ASI-003D2-051810A	ASI-003D2-1110A	ASI-004D2-121808A	ASI-004D2-051710A	ASI-004D2-1110A	ASI-005D2-121808A	ASI-005D2-052010A	ASI-005D2-052010D	ASI-005D2-1110A	ASI-011D2-121908A	ASI-011D2-051710A
			Sample Date & Time	12/18/2008 3:30:00 PM	5/18/2010 9:05:00 AM	5/18/2010 9:10:00 AM	11/29/2010 3:05:00 PM	11/29/2010 3:10:00 PM	5/18/2010 1:55:00 PM	11/29/2010 3:20:00 PM	12/18/2008 11:35:00 AM	5/17/2010 4:40:00 PM	11/30/2010 11:45:00 AM	12/18/2008 3:25:00 PM	5/20/2010 3:20:00 PM	5/20/2010 3:30:00 PM	12/2/2010 10:40:00 AM	12/19/2008 9:55:00 AM	5/17/2010 4:50:00 PM
			Sample Type	FD	N	FD	N	FD	N	N	N	N	N	N	N	FD	N	N	N
			Field Duplicate Parent Sample	ASI-002D2-121808A		ASI-002D2-051810A		ASI-002D2-1110A								ASI-005D2-052010A			
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
1,1'-Biphenyl	92-52-4	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2,2'-Oxybis(1-Chloropropane)	108-60-1	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,5-Trichlorophenol	95-95-4	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4,6-Trichlorophenol	88-06-2	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dichlorophenol	120-83-2	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dimethylphenol	105-67-9	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2,4-Dinitrophenol	51-28-5	--	--	10 U	10 U	10 U	9.1 U	9.1 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene	121-14-2	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	606-20-2	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chloronaphthalene	91-58-7	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Chlorophenol	95-57-8	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Methylnaphthalene	91-57-6	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Methylphenol	95-48-7	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Nitroaniline	88-74-4	--	--	10 U	10 U	10 U	9.1 U	9.1 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	88-75-5	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	91-94-1	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
3-Nitroaniline	99-09-2	--	--	10 U	10 U	10 U	9.1 U	9.1 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U
4,6-Dinitro-2-Methylphenol	534-52-1	--	--	10 U	10 U	10 U	9.1 U	9.1 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-Phenylether	101-55-3	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloro-3-Methylphenol	59-50-7	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chloroaniline	106-47-8	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Chlorophenyl-Phenylether	7005-72-3	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methylphenol	106-44-5	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Nitroaniline	100-01-6	--	--	10 U	10 U	10 U	9.1 U	9.1 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitrophenol	100-02-7	--	--	10 U	10 U	10 U	9.1 U	9.1 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	83-32-9	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Acenaphthylene	208-96-8	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetophenone	98-86-2	--	--	5 U	0.32 J	0.31 J	4.5 U	4.5 U	0.46 J	4.6 U	5 U	0.24 J	4.8 U	5 U	0.52 J	0.37 J	5 U	5 U	0.36 J
Anthracene	120-12-7	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Atrazine	1912-24-9	3	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzaldehyde	100-52-7	--	--	5 U	0.35 J	0.37 J	4.5 U	4.5 U	0.44 J	4.6 U	5 U	0.26 J	4.8 U	5 U	0.54 J	0.33 J	5 U	5 U	0.44 J
Benzo(A)Anthracene	56-55-3	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzo(A)Pyrene	50-32-8	0.2	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzo(B)Fluoranthene	205-99-2	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzo(G,H,I)Perylene	191-24-2	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzo(K)Fluoranthene	207-08-9	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Bis(2-Chloroethoxy)Methane	111-91-1	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Bis(2-Chloroethyl)Ether	111-44-4	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Bis(2-Ethylhexyl)Phthalate	117-81-7	**6**	--	1	0.83 J	0.88 J	4.5 U	4.5 U	1.2 J	4.6 U	1.9	1 J	4.8 U	4	0.27 J	0.76 J	5 U	0.68	0.59 J
Butylbenzylphthalate	85-68-7	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Caprolactam	105-60-2	--	--	5 U	0.18 J	5 U	4.5 U	4.5 U	0.26 J	4.6 U	5 U	0.18 J	4.8 U	5 U	5 U	0.22 J	5 U	5 U	0.38 J
Carbazole	86-74-8	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Chrysene	218-01-9	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibenz(A,H)Anthracene	53-70-3	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibenzofuran	132-64-9	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Diethylphthalate	84-66-2	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Dimethylphthalate	131-11-3	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Di-N-Butyl Phthalate	84-74-2	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U

Appendix D-2
Analytical Data Summary
2008, 2010 Groundwater Sample SVOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-02D2	ASI-02D2	ASI-02D2	ASI-02D2	ASI-02D2	ASI-03D2	ASI-03D2	ASI-04D2	ASI-04D2	ASI-04D2	ASI-05D2	ASI-05D2	ASI-05D2	ASI-05D2	ASI-11D2	ASI-11D2
			Sample ID	ASI-002D2-121808AD	ASI-002D2-051810A	ASI-002D2-051810D	ASI-002D2-1110A	DUP-1110B	ASI-003D2-051810A	ASI-003D2-1110A	ASI-004D2-121808A	ASI-004D2-051710A	ASI-004D2-1110A	ASI-005D2-121808A	ASI-005D2-052010A	ASI-005D2-052010D	ASI-005D2-1110A	ASI-011D2-121908A	ASI-011D2-051710A
			Sample Date & Time	12/18/2008 3:30:00 PM	5/18/2010 9:05:00 AM	5/18/2010 9:10:00 AM	11/29/2010 3:05:00 PM	11/29/2010 3:10:00 PM	5/18/2010 1:55:00 PM	11/29/2010 3:20:00 PM	12/18/2008 11:35:00 AM	5/17/2010 4:40:00 PM	11/30/2010 11:45:00 AM	12/18/2008 3:25:00 PM	5/20/2010 3:20:00 PM	5/20/2010 3:30:00 PM	12/2/2010 10:40:00 AM	12/19/2008 9:55:00 AM	5/17/2010 4:50:00 PM
			Sample Type	FD	N	FD	N	FD	N	N	N	N	N	N	N	FD	N	N	N
			Field Duplicate Parent Sample	ASI-002D2-121808A		ASI-002D2-051810A		ASI-002D2-1110A								ASI-005D2-052010A			
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Di-N-Octyl Phthalate	117-84-0	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Fluoranthene	206-44-0	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Fluorene	86-73-7	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorobenzene	118-74-1	1	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorobutadiene	87-68-3	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachlorocyclopentadiene	77-47-4	50	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Hexachloroethane	67-72-1	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Indeno(1,2,3-Cd)Pyrene	193-39-5	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Isophorone	78-59-1	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Naphthalene	91-20-3	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	0.3	5 U	5 U	5 U	5 U	5 U
Nitrobenzene	98-95-3	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitroso-Di-N-Propylamine	621-64-7	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
N-Nitrosodiphenylamine	86-30-6	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Pentachlorophenol	87-86-5	1	--	10 U	10 U	10 U	9.1 U	9.1 U	10 U	9.3 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenanthrene	85-01-8	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Phenol	108-95-2	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U
Pyrene	129-00-0	--	--	5 U	5 U	5 U	4.5 U	4.5 U	5 U	4.6 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2008, 2010 Groundwater Sample SVOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-11D2	ASI-14D2	ASI-14D2	ASI-14D2	ASI-14D2	ASI-14S	ASI-14S	ASI-14S	ASI-15D2	ASI-15D2	ASI-15D2	ASI-16D2	ASI-16D2	ASI-23D2	ASI-23D2	ASI-23D2
			Sample ID	ASI-011D2-1110A	ASI-014D2-121608A	ASI-014D2-121608AD	ASI-014D2-051810A	ASI-014D2-1110A	ASI-014S-121608A	ASI-014S-051810A	ASI-014S-1110A	ASI-015D2-121808A	ASI-015D2-052010A	ASI-015D2-1110A	ASI-016D2-051910A	ASI-016D2-1110A	ASI-023D2-121608A	ASI-023D2-051810A	ASI-023D2-1110A
			Sample Date & Time	11/30/2010 2:15:00 PM	12/16/2008 11:20:00 AM	12/16/2008 11:55:00 AM	5/18/2010 9:00:00 AM	11/30/2010 3:40:00 PM	12/16/2008 10:25:00 AM	5/18/2010 11:45:00 AM	11/30/2010 3:30:00 PM	12/18/2008 10:00:00 AM	5/20/2010 12:00:00 PM	12/1/2010 3:10:00 PM	5/19/2010 1:30:00 PM	12/1/2010 12:35:00 PM	12/16/2008 3:05:00 PM	5/18/2010 10:55:00 AM	12/1/2010 10:05:00 AM
			Sample Type	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample			ASI-014D2-121608A													
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
1,1'-Biphenyl	92-52-4	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2,2'-Oxybis(1-Chloropropane)	108-60-1	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2,4,5-Trichlorophenol	95-95-4	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2,4,6-Trichlorophenol	88-06-2	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2,4-Dichlorophenol	120-83-2	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2,4-Dimethylphenol	105-67-9	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2,4-Dinitrophenol	51-28-5	--	--	9.1 U	10 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	9.3 U	10 U	9.1 U	10 U	10 U	10 U
2,4-Dinitrotoluene	121-14-2	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2,6-Dinitrotoluene	606-20-2	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2-Chloronaphthalene	91-58-7	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2-Chlorophenol	95-57-8	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2-Methylnaphthalene	91-57-6	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2-Methylphenol	95-48-7	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
2-Nitroaniline	88-74-4	--	--	9.1 U	10 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	9.3 U	10 U	9.1 U	10 U	10 U	10 U
2-Nitrophenol	88-75-5	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
3,3'-Dichlorobenzidine	91-94-1	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
3-Nitroaniline	99-09-2	--	--	9.1 U	10 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	9.3 U	10 U	9.1 U	10 U	10 U	10 U
4,6-Dinitro-2-Methylphenol	534-52-1	--	--	9.1 U	10 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	9.3 U	10 U	9.1 U	10 U	10 U	10 U
4-Bromophenyl-Phenylether	101-55-3	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
4-Chloro-3-Methylphenol	59-50-7	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
4-Chloroaniline	106-47-8	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
4-Chlorophenyl-Phenylether	7005-72-3	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
4-Methylphenol	106-44-5	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
4-Nitroaniline	100-01-6	--	--	9.1 U	10 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	9.3 U	10 U	9.1 U	10 U	10 U	10 U
4-Nitrophenol	100-02-7	--	--	9.1 U	10 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	9.3 U	10 U	9.1 U	10 U	10 U	10 U
Acenaphthene	83-32-9	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Acenaphthylene	208-96-8	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Acetophenone	98-86-2	--	--	4.5 U	5 U	5 U	0.26 J	4.8 U	5 U	0.28 J	5 U	5 U	0.43 J	4.6 U	0.25 J	4.5 U	5 U	0.3 J	5 U
Anthracene	120-12-7	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Atrazine	1912-24-9	3	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Benzaldehyde	100-52-7	--	--	4.5 U	5 U	5 U	0.32 J	4.8 U	5 U	0.23 J	5 U	5 U	0.33 J	4.6 U	0.22 J	4.5 U	5 U	0.27 J	5 U
Benzo(A)Anthracene	56-55-3	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Benzo(A)Pyrene	50-32-8	0.2	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Benzo(B)Fluoranthene	205-99-2	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Benzo(G,H,I)Perylene	191-24-2	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Benzo(K)Fluoranthene	207-08-9	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Bis(2-Chloroethoxy)Methane	111-91-1	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Bis(2-Chloroethyl)Ether	111-44-4	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Bis(2-Ethylhexyl)Phthalate	117-81-7	**6**	--	4.5 U	0.37	0.3	1 J	4.8 U	0.33	0.53 J	5 U	0.64	0.33 J	4.6 U	1.9 J	4.5 U	0.46	0.83 J	5 U
Butylbenzylphthalate	85-68-7	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Caprolactam	105-60-2	--	--	4.5 U	5 U	5 U	0.22 J	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Carbazole	86-74-8	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Chrysene	218-01-9	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Dibenz(A,H)Anthracene	53-70-3	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Dibenzofuran	132-64-9	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Diethylphthalate	84-66-2	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Dimethylphthalate	131-11-3	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Di-N-Butyl Phthalate	84-74-2	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U

Appendix D-2
Analytical Data Summary
2008, 2010 Groundwater Sample SVOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-11D2	ASI-14D2	ASI-14D2	ASI-14D2	ASI-14D2	ASI-14S	ASI-14S	ASI-14S	ASI-15D2	ASI-15D2	ASI-15D2	ASI-16D2	ASI-16D2	ASI-23D2	ASI-23D2	ASI-23D2
			Sample ID	ASI-011D2-1110A	ASI-014D2-121608A	ASI-014D2-121608AD	ASI-014D2-051810A	ASI-014D2-1110A	ASI-014S-121608A	ASI-014S-051810A	ASI-014S-1110A	ASI-015D2-121808A	ASI-015D2-052010A	ASI-015D2-1110A	ASI-016D2-051910A	ASI-016D2-1110A	ASI-023D2-121608A	ASI-023D2-051810A	ASI-023D2-1110A
			Sample Date & Time	11/30/2010 2:15:00 PM	12/16/2008 11:20:00 AM	12/16/2008 11:55:00 AM	5/18/2010 9:00:00 AM	11/30/2010 3:40:00 PM	12/16/2008 10:25:00 AM	5/18/2010 11:45:00 AM	11/30/2010 3:30:00 PM	12/18/2008 10:00:00 AM	5/20/2010 12:00:00 PM	12/1/2010 3:10:00 PM	5/19/2010 1:30:00 PM	12/1/2010 12:35:00 PM	12/16/2008 3:05:00 PM	5/18/2010 10:55:00 AM	12/1/2010 10:05:00 AM
			Sample Type	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample			ASI-014D2-121608A													
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Di-N-Octyl Phthalate	117-84-0	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Fluoranthene	206-44-0	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Fluorene	86-73-7	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Hexachlorobenzene	118-74-1	1	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Hexachlorobutadiene	87-68-3	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Hexachlorocyclopentadiene	77-47-4	50	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Hexachloroethane	67-72-1	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Indeno(1,2,3-Cd)Pyrene	193-39-5	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Isophorone	78-59-1	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Naphthalene	91-20-3	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Nitrobenzene	98-95-3	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
N-Nitroso-Di-N-Propylamine	621-64-7	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
N-Nitrosodiphenylamine	86-30-6	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Pentachlorophenol	87-86-5	1	--	9.1 U	10 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	9.3 U	10 U	9.1 U	10 U	10 U	10 U
Phenanthrene	85-01-8	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Phenol	108-95-2	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U
Pyrene	129-00-0	--	--	4.5 U	5 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	4.6 U	5 U	4.5 U	5 U	5 U	5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
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All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2008, 2010 Groundwater Sample SVOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-23S	ASI-23S	ASI-23S	BF-4	BF-4	BM-3D	BM-3D	BM-3D	BM-3S	BM-3S	BR-1	BR-1	BR-1	BW-13S	BW-13S	BW-13S
			Sample ID	ASI-023S-121608A	ASI-023S-051810A	ASI-023S-1110A	BF-004-052010A	BF-004-1110A	BM-03D-121708A	BM-003D-051910A	BM-003D-1110A	BM-003S-051910A	BM-003S-1110A	BR-001-121708A	BR-001-052110A	BR-001-1110A	BW-013S-121808A	BW-013S-052010A	BW-013S-1110A
			Sample Date & Time	12/16/2008 4:25:00 PM	5/18/2010 1:10:00 PM	12/1/2010 9:45:00 AM	5/20/2010 3:40:00 PM	12/1/2010 1:25:00 PM	12/17/2008 10:40:00 AM	5/19/2010 11:05:00 AM	11/29/2010 3:25:00 PM	5/19/2010 1:50:00 PM	11/29/2010 3:10:00 PM	12/17/2008 1:15:00 PM	5/21/2010 8:15:00 AM	12/2/2010 9:45:00 AM	12/18/2008 2:30:00 PM	5/20/2010 9:40:00 AM	12/2/2010 1:00:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
1,1'-Biphenyl	92-52-4	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	0.16	5 U	5 U	5 U	5 U	4.6 U
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
2,2'-Oxybis(1-Chloropropane)	108-60-1	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
2,4,5-Trichlorophenol	95-95-4	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
2,4,6-Trichlorophenol	88-06-2	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
2,4-Dichlorophenol	120-83-2	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
2,4-Dimethylphenol	105-67-9	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
2,4-Dinitrophenol	51-28-5	--	--	10 U	10 U	9.1 U	10 U	9.7 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.3 U
2,4-Dinitrotoluene	121-14-2	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
2,6-Dinitrotoluene	606-20-2	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
2-Chloronaphthalene	91-58-7	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
2-Chlorophenol	95-57-8	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
2-Methylnaphthalene	91-57-6	--	--	5 U	5 U	4.5 U	5 U	4.9 U	0.16	5 U	4.8 U	5 U	5 U	1.8	5 U	5 U	5 U	5 U	4.6 U
2-Methylphenol	95-48-7	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
2-Nitroaniline	88-74-4	--	--	10 U	10 U	9.1 U	10 U	9.7 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.3 U
2-Nitrophenol	88-75-5	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
3,3'-Dichlorobenzidine	91-94-1	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
3-Nitroaniline	99-09-2	--	--	10 U	10 U	9.1 U	10 U	9.7 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.3 U
4,6-Dinitro-2-Methylphenol	534-52-1	--	--	10 U	10 U	9.1 U	10 U	9.7 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.3 U
4-Bromophenyl-Phenylether	101-55-3	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
4-Chloro-3-Methylphenol	59-50-7	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
4-Chloroaniline	106-47-8	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
4-Chlorophenyl-Phenylether	7005-72-3	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
4-Methylphenol	106-44-5	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	1.3	0.32 J	5 U	5 U	5 U	4.6 U
4-Nitroaniline	100-01-6	--	--	10 U	10 U	9.1 U	10 U	9.7 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.3 U
4-Nitrophenol	100-02-7	--	--	10 U	10 U	9.1 U	10 U	9.7 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.3 U
Acenaphthene	83-32-9	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	0.26	5 U	5 U	5 U	5 U	4.6 U
Acenaphthylene	208-96-8	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Acetophenone	98-86-2	--	--	5 U	0.3 J	4.5 U	0.4 J	4.9 U	5 U	0.42 J	4.8 U	0.75 J	5 U	0.19	1.2 J	5 U	5 U	0.81 J	4.6 U
Anthracene	120-12-7	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Atrazine	1912-24-9	3	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Benzaldehyde	100-52-7	--	--	5 U	0.3 J	4.5 U	0.36 J	4.9 U	5 U	0.25 J	4.8 U	0.94 J	5 U	5 U	1.4 J	5 U	5 U	0.46 J	4.6 U
Benzo(A)Anthracene	56-55-3	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Benzo(A)Pyrene	50-32-8	0.2	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Benzo(B)Fluoranthene	205-99-2	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Benzo(G,H,I)Perylene	191-24-2	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Benzo(K)Fluoranthene	207-08-9	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Bis(2-Chloroethoxy)Methane	111-91-1	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Bis(2-Chloroethyl)Ether	111-44-4	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Bis(2-Ethylhexyl)Phthalate	117-81-7	**6**	--	0.44	1.6 J	4.5 U	0.76 J	4.9 U	5 U	0.93 J	4.8 U	0.75 J	5 U	0.35	0.31 J	5 U	0.81	1.1 J	4.6 U
Butylbenzylphthalate	85-68-7	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	0.21 J	4.6 U
Caprolactam	105-60-2	--	--	5 U	0.41 J	4.5 U	0.16 J	4.9 U	5 U	5 U	4.8 U	0.15 J	5 U	5 U	0.43 J	5 U	5 U	0.51 J	4.6 U
Carbazole	86-74-8	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Chrysene	218-01-9	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Dibenz(A,H)Anthracene	53-70-3	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Dibenzofuran	132-64-9	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Diethylphthalate	84-66-2	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Dimethylphthalate	131-11-3	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Di-N-Butyl Phthalate	84-74-2	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	0.22 J	4.6 U

Appendix D-2
Analytical Data Summary
2008, 2010 Groundwater Sample SVOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-23S	ASI-23S	ASI-23S	BF-4	BF-4	BM-3D	BM-3D	BM-3D	BM-3S	BM-3S	BR-1	BR-1	BR-1	BW-13S	BW-13S	BW-13S
			Sample ID	ASI-023S-121608A	ASI-023S-051810A	ASI-023S-1110A	BF-004-052010A	BF-004-1110A	BM-03D-121708A	BM-003D-051910A	BM-003D-1110A	BM-003S-051910A	BM-003S-1110A	BR-001-121708A	BR-001-052110A	BR-001-1110A	BW-013S-121808A	BW-013S-052010A	BW-013S-1110A
			Sample Date & Time	12/16/2008 4:25:00 PM	5/18/2010 1:10:00 PM	12/1/2010 9:45:00 AM	5/20/2010 3:40:00 PM	12/1/2010 1:25:00 PM	12/17/2008 10:40:00 AM	5/19/2010 11:05:00 AM	11/29/2010 3:25:00 PM	5/19/2010 1:50:00 PM	11/29/2010 3:10:00 PM	12/17/2008 1:15:00 PM	5/21/2010 8:15:00 AM	12/2/2010 9:45:00 AM	12/18/2008 2:30:00 PM	5/20/2010 9:40:00 AM	12/2/2010 1:00:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample																
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Di-N-Octyl Phthalate	117-84-0	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Fluoranthene	206-44-0	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Fluorene	86-73-7	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Hexachlorobenzene	118-74-1	1	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Hexachlorobutadiene	87-68-3	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Hexachlorocyclopentadiene	77-47-4	50	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Hexachloroethane	67-72-1	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Indeno(1,2,3-Cd)Pyrene	193-39-5	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Isophorone	78-59-1	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Naphthalene	91-20-3	--	--	5 U	5 U	4.5 U	5 U	1.8 J	1.6	5 U	4.8 U	5 U	5 U	23	5 U	5 U	5 U	5 U	4.6 U
Nitrobenzene	98-95-3	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
N-Nitroso-Di-N-Propylamine	621-64-7	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
N-Nitrosodiphenylamine	86-30-6	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Pentachlorophenol	87-86-5	1	--	10 U	10 U	9.1 U	10 U	9.7 U	10 U	10 U	9.5 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	9.3 U
Phenanthrene	85-01-8	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U
Phenol	108-95-2	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	3.4	2.1 J	2 J	5 U	0.21 J	4.6 U
Pyrene	129-00-0	--	--	5 U	5 U	4.5 U	5 U	4.9 U	5 U	5 U	4.8 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	4.6 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2008, 2010 Groundwater Sample SVOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MI-01	MI-01	MI-01	MI-02	MI-02	MI-02	MI-08	MI-08	MI-08	MW-01D	MW-02M	MW-03D	MW-04D	MW-04D	MW-05D	MW-05D2
			Sample ID	MI-001-121508A	MI-001-051910A	MI-001-1110A	MI-002-121508A	MI-002-051810A	MI-002-1110A	MI-008-121908A	MI-008-052010A	MI-008-1110A	MW-001D-1110A	MW-002M-1110A	MW-003D-1110A	DUP-1110C	MW-004D-1110A	MW-005D-1110A	MW-005D2-1110A
			Sample Date & Time	12/15/2008 3:20:00 PM	5/19/2010 9:45:00 AM	11/29/2010 11:20:00 AM	12/15/2008 4:25:00 PM	5/18/2010 3:25:00 PM	11/29/2010 11:55:00 AM	12/19/2008 10:20:00 AM	5/20/2010 9:50:00 AM	12/2/2010 2:15:00 PM	12/1/2010 10:40:00 AM	11/29/2010 3:25:00 PM	11/29/2010 11:45:00 AM	12/2/2010 11:20:00 AM	12/2/2010 11:15:00 AM	11/30/2010 11:00:00 AM	11/30/2010 10:15:00 AM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N
			Field Duplicate Parent Sample													MW-004D-1110A			
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
1,1'-Biphenyl	92-52-4	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2,2'-Oxybis(1-Chloropropane)	108-60-1	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2,4,5-Trichlorophenol	95-95-4	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2,4,6-Trichlorophenol	88-06-2	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2,4-Dichlorophenol	120-83-2	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2,4-Dimethylphenol	105-67-9	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2,4-Dinitrophenol	51-28-5	--	--	10 U	10 U	9.5 U	10 U	10 U	9.5 U	10 U	10 U	9.3 U	9.7 U	9.1 U	9.7 U	9.5 U	9.6 U	9.5 U	10 U
2,4-Dinitrotoluene	121-14-2	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2,6-Dinitrotoluene	606-20-2	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2-Chloronaphthalene	91-58-7	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2-Chlorophenol	95-57-8	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2-Methylnaphthalene	91-57-6	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2-Methylphenol	95-48-7	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
2-Nitroaniline	88-74-4	--	--	10 U	10 U	9.5 U	10 U	10 U	9.5 U	10 U	10 U	9.3 U	9.7 U	9.1 U	9.7 U	9.5 U	9.6 U	9.5 U	10 U
2-Nitrophenol	88-75-5	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
3,3'-Dichlorobenzidine	91-94-1	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
3-Nitroaniline	99-09-2	--	--	10 U	10 U	9.5 U	10 U	10 U	9.5 U	10 U	10 U	9.3 U	9.7 U	9.1 U	9.7 U	9.5 U	9.6 U	9.5 U	10 U
4,6-Dinitro-2-Methylphenol	534-52-1	--	--	10 U	10 U	9.5 U	10 U	10 U	9.5 U	10 U	10 U	9.3 U	9.7 U	9.1 U	9.7 U	9.5 U	9.6 U	9.5 U	10 U
4-Bromophenyl-Phenylether	101-55-3	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
4-Chloro-3-Methylphenol	59-50-7	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
4-Chloroaniline	106-47-8	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
4-Chlorophenyl-Phenylether	7005-72-3	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
4-Methylphenol	106-44-5	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
4-Nitroaniline	100-01-6	--	--	10 U	10 U	9.5 U	10 U	10 U	9.5 U	10 U	10 U	9.3 U	9.7 U	9.1 U	9.7 U	9.5 U	9.6 U	9.5 U	10 U
4-Nitrophenol	100-02-7	--	--	10 U	10 U	9.5 U	10 U	10 U	9.5 U	10 U	10 U	9.3 U	9.7 U	9.1 U	9.7 U	9.5 U	9.6 U	9.5 U	10 U
Acenaphthene	83-32-9	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Acenaphthylene	208-96-8	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Acetophenone	98-86-2	--	--	5 U	0.35 J	4.8 U	5 U	0.27 J	4.8 U	5 U	1.1 J	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Anthracene	120-12-7	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Atrazine	1912-24-9	3	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Benzaldehyde	100-52-7	--	--	5 U	0.38 J	4.8 U	5 U	0.31 J	4.8 U	5 U	1.4 J	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Benzo(A)Anthracene	56-55-3	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Benzo(A)Pyrene	50-32-8	0.2	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Benzo(B)Fluoranthene	205-99-2	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Benzo(G,H,I)Perylene	191-24-2	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Benzo(K)Fluoranthene	207-08-9	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Bis(2-Chloroethoxy)Methane	111-91-1	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Bis(2-Chloroethyl)Ether	111-44-4	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Bis(2-Ethylhexyl)Phthalate	117-81-7	**6**	--	0.31	2 J	4.8 U	0.48	0.73 J	4.8 U	0.52	1.1 J	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Butylbenzylphthalate	85-68-7	--	--	0.3	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Caprolactam	105-60-2	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Carbazole	86-74-8	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Chrysene	218-01-9	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Dibenz(A,H)Anthracene	53-70-3	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Dibenzofuran	132-64-9	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Diethylphthalate	84-66-2	--	--	1.2	5 U	4.8 U	0.2	5 U	4.8 U	0.17	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Dimethylphthalate	131-11-3	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Di-N-Butyl Phthalate	84-74-2	--	--	0.29	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U

Appendix D-2
Analytical Data Summary
2008, 2010 Groundwater Sample SVOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MI-01	MI-01	MI-01	MI-02	MI-02	MI-02	MI-08	MI-08	MI-08	MW-01D	MW-02M	MW-03D	MW-04D	MW-04D	MW-05D	MW-05D2
			Sample ID	MI-001-121508A	MI-001-051910A	MI-001-1110A	MI-002-121508A	MI-002-051810A	MI-002-1110A	MI-008-121908A	MI-008-052010A	MI-008-1110A	MW-001D-1110A	MW-002M-1110A	MW-003D-1110A	DUP-1110C	MW-004D-1110A	MW-005D-1110A	MW-005D2-1110A
			Sample Date & Time	12/15/2008 3:20:00 PM	5/19/2010 9:45:00 AM	11/29/2010 11:20:00 AM	12/15/2008 4:25:00 PM	5/18/2010 3:25:00 PM	11/29/2010 11:55:00 AM	12/19/2008 10:20:00 AM	5/20/2010 9:50:00 AM	12/2/2010 2:15:00 PM	12/1/2010 10:40:00 AM	11/29/2010 3:25:00 PM	11/29/2010 11:45:00 AM	12/2/2010 11:20:00 AM	12/2/2010 11:15:00 AM	11/30/2010 11:00:00 AM	11/30/2010 10:15:00 AM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N
			Field Duplicate Parent Sample													MW-004D-1110A			
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Di-N-Octyl Phthalate	117-84-0	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Fluoranthene	206-44-0	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Fluorene	86-73-7	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Hexachlorobenzene	118-74-1	1	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Hexachlorobutadiene	87-68-3	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Hexachlorocyclopentadiene	77-47-4	50	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Hexachloroethane	67-72-1	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Indeno(1,2,3-Cd)Pyrene	193-39-5	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Isophorone	78-59-1	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Naphthalene	91-20-3	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Nitrobenzene	98-95-3	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
N-Nitroso-Di-N-Propylamine	621-64-7	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
N-Nitrosodiphenylamine	86-30-6	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Pentachlorophenol	87-86-5	1	--	10 U	10 U	9.5 U	10 U	10 U	9.5 U	10 U	10 U	9.3 U	9.7 U	9.1 U	9.7 U	9.5 U	9.6 U	9.5 U	10 U
Phenanthrene	85-01-8	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Phenol	108-95-2	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	0.15 J	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U
Pyrene	129-00-0	--	--	5 U	5 U	4.8 U	5 U	5 U	4.8 U	5 U	5 U	4.6 U	4.9 U	4.5 U	4.9 U	4.8 U	4.8 U	4.8 U	5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2008, 2010 Groundwater Sample SVOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MW-06D	MW-06M	MW-07M	MW-08M	MW-08S	MW-09D	MW-09M	MW-10D	MW-11S	OE-2A	OE-2A	OE-2A	OE-2B	OE-2B	OE-2B	OE-2B
			Sample ID	MW-006D-1110A	MW-006M-1110A	MW-007M-1110A	MW-008M-1110A	MW-008S-1110A	MW-009D-1110A	MW-009M-1110A	MW-010D-1110A	MW-011S-1110A	OE-02A-121708A	OE-02A-052010A	OE-002A-1110A	OE-02B-121708A	OE-02B-052010A	DUP-1110A	OE-002B-1110A
			Sample Date & Time	11/30/2010 10:20:00 AM	11/30/2010 10:15:00 AM	12/2/2010 10:10:00 AM	11/30/2010 1:15:00 PM	11/30/2010 1:15:00 PM	12/2/2010 10:55:00 AM	12/1/2010 3:55:00 PM	12/2/2010 1:25:00 PM	12/1/2010 10:20:00 AM	12/17/2008 2:20:00 PM	5/20/2010 12:05:00 PM	11/30/2010 1:55:00 PM	12/17/2008 2:35:00 PM	5/20/2010 12:05:00 PM	11/30/2010 2:10:00 PM	11/30/2010 2:05:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
			Field Duplicate Parent Sample															OE-002B-1110A	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
1,1'-Biphenyl	92-52-4	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
1,2,4,5-Tetrachlorobenzene	95-94-3	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2,2'-Oxybis(1-Chloropropane)	108-60-1	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2,3,4,6-Tetrachlorophenol	58-90-2	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2,4,5-Trichlorophenol	95-95-4	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2,4,6-Trichlorophenol	88-06-2	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2,4-Dichlorophenol	120-83-2	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2,4-Dimethylphenol	105-67-9	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2,4-Dinitrophenol	51-28-5	--	--	9.1 U	9.1 U	10 U	10 U	9.3 U	9.1 U	9.1 U	9.7 U	9.3 U	10 U	10 U	9.1 U	10 U	10 U	9.1 U	9.3 U
2,4-Dinitrotoluene	121-14-2	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2,6-Dinitrotoluene	606-20-2	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2-Chloronaphthalene	91-58-7	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2-Chlorophenol	95-57-8	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2-Methylnaphthalene	91-57-6	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2-Methylphenol	95-48-7	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
2-Nitroaniline	88-74-4	--	--	9.1 U	9.1 U	10 U	10 U	9.3 U	9.1 U	9.1 U	9.7 U	9.3 U	10 U	10 U	9.1 U	10 U	10 U	9.1 U	9.3 U
2-Nitrophenol	88-75-5	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
3,3'-Dichlorobenzidine	91-94-1	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
3-Nitroaniline	99-09-2	--	--	9.1 U	9.1 U	10 U	10 U	9.3 U	9.1 U	9.1 U	9.7 U	9.3 U	10 U	10 U	9.1 U	10 U	10 U	9.1 U	9.3 U
4,6-Dinitro-2-Methylphenol	534-52-1	--	--	9.1 U	9.1 U	10 U	10 U	9.3 U	9.1 U	9.1 U	9.7 U	9.3 U	10 U	10 U	2.8 J	10 U	10 U	9.1 U	9.3 U
4-Bromophenyl-Phenylether	101-55-3	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
4-Chloro-3-Methylphenol	59-50-7	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
4-Chloroaniline	106-47-8	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
4-Chlorophenyl-Phenylether	7005-72-3	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
4-Methylphenol	106-44-5	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
4-Nitroaniline	100-01-6	--	--	9.1 U	9.1 U	10 U	10 U	9.3 U	9.1 U	9.1 U	9.7 U	9.3 U	10 U	10 U	9.1 U	10 U	10 U	9.1 U	9.3 U
4-Nitrophenol	100-02-7	--	--	9.1 U	9.1 U	10 U	10 U	9.3 U	9.1 U	9.1 U	9.7 U	9.3 U	10 U	10 U	9.1 U	10 U	10 U	9.1 U	9.3 U
Acenaphthene	83-32-9	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Acenaphthylene	208-96-8	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Acetophenone	98-86-2	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	0.29 J	4.5 U	5 U	0.27 J	4.5 U	4.6 U
Anthracene	120-12-7	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Atrazine	1912-24-9	3	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Benzaldehyde	100-52-7	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	0.33 J	4.5 U	5 U	0.29 J	4.5 U	4.6 U
Benzo(A)Anthracene	56-55-3	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Benzo(A)Pyrene	50-32-8	0.2	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Benzo(B)Fluoranthene	205-99-2	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Benzo(G,H,I)Perylene	191-24-2	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Benzo(K)Fluoranthene	207-08-9	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Bis(2-Chloroethoxy)Methane	111-91-1	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Bis(2-Chloroethyl)Ether	111-44-4	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Bis(2-Ethylhexyl)Phthalate	117-81-7	**6**	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	0.3	1.2 J	4.5 U	0.28	0.89 J	4.5 U	4.6 U
Butylbenzylphthalate	85-68-7	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Caprolactam	105-60-2	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	0.56 J	4.5 U	5 U	5 U	4.5 U	4.6 U
Carbazole	86-74-8	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Chrysene	218-01-9	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Dibenz(A,H)Anthracene	53-70-3	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Dibenzofuran	132-64-9	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Diethylphthalate	84-66-2	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Dimethylphthalate	131-11-3	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Di-N-Butyl Phthalate	84-74-2	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U

Appendix D-2
Analytical Data Summary
2008, 2010 Groundwater Sample SVOC Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	MW-06D	MW-06M	MW-07M	MW-08M	MW-08S	MW-09D	MW-09M	MW-10D	MW-11S	OE-2A	OE-2A	OE-2A	OE-2B	OE-2B	OE-2B	OE-2B
			Sample ID	MW-006D-1110A	MW-006M-1110A	MW-007M-1110A	MW-008M-1110A	MW-008S-1110A	MW-009D-1110A	MW-009M-1110A	MW-010D-1110A	MW-011S-1110A	OE-02A-121708A	OE-02A-052010A	OE-002A-1110A	OE-02B-121708A	OE-02B-052010A	DUP-1110A	OE-002B-1110A
			Sample Date & Time	11/30/2010 10:20:00 AM	11/30/2010 10:15:00 AM	12/2/2010 10:10:00 AM	11/30/2010 1:15:00 PM	11/30/2010 1:15:00 PM	12/2/2010 10:55:00 AM	12/1/2010 3:55:00 PM	12/2/2010 1:25:00 PM	12/1/2010 10:20:00 AM	12/17/2008 2:20:00 PM	5/20/2010 12:05:00 PM	11/30/2010 1:55:00 PM	12/17/2008 2:35:00 PM	5/20/2010 12:05:00 PM	11/30/2010 2:10:00 PM	11/30/2010 2:05:00 PM
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
			Field Duplicate Parent Sample															OE-002B-1110A	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**																
Di-N-Octyl Phthalate	117-84-0	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Fluoranthene	206-44-0	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Fluorene	86-73-7	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Hexachlorobenzene	118-74-1	1	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Hexachlorobutadiene	87-68-3	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Hexachlorocyclopentadiene	77-47-4	50	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Hexachloroethane	67-72-1	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Indeno(1,2,3-Cd)Pyrene	193-39-5	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Isophorone	78-59-1	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Naphthalene	91-20-3	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Nitrobenzene	98-95-3	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
N-Nitroso-Di-N-Propylamine	621-64-7	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
N-Nitrosodiphenylamine	86-30-6	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Pentachlorophenol	87-86-5	1	--	9.1 U	9.1 U	10 U	10 U	9.3 U	9.1 U	9.1 U	9.7 U	9.3 U	10 U	10 U	9.1 U	10 U	10 U	9.1 U	9.3 U
Phenanthrene	85-01-8	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Phenol	108-95-2	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U
Pyrene	129-00-0	--	--	4.5 U	4.5 U	5 U	5 U	4.6 U	4.5 U	4.5 U	4.9 U	4.6 U	5 U	5 U	4.5 U	5 U	5 U	4.5 U	4.6 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2008 Groundwater Sample PCB Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	AL-1	AL-14	ARC-3	ASI-04D2	ASI-14D2	ASI-14D2	ASI-14S	ASI-15D2
			Sample ID	AL-001-121708A	AL-014-121608A	ARC-003-121708A	ASI-004D2-121808A	ASI-014D2-121608A	ASI-014D2-121608AD	ASI-014S-121608A	ASI-015D2-121808A
			Sample Date & Time	12/17/2008 10:55:00 AM	12/16/2008 2:40:00 PM	12/17/2008 10:40:00 AM	12/18/2008 11:35:00 AM	12/16/2008 11:20:00 AM	12/16/2008 11:55:00 AM	12/16/2008 10:25:00 AM	12/18/2008 10:00:00 AM
			Sample Type	N	N	N	N	N	FD	N	N
			Field Duplicate Parent Sample						ASI-014D2-121608A		
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**								
Aroclor 1016	12674-11-2	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1221	11104-28-2	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1232	11141-16-5	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1242	53469-21-9	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1248	12672-29-6	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1254	11097-69-1	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1260	11096-82-5	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1262	37324-23-5	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1268	11100-14-4	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Notes:

EPA-RSL-GW- EPA Maximum Contaminant Levels established
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2008 Groundwater Sample PCB Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-23D2	ASI-23S	BM-3D	BR-1	MI-01	MI-02	OE-2A	OE-2B
			Sample ID	ASI-023D2-121608A	ASI-023S-121608A	BM-03D-121708A	BR-001-121708A	MI-001-121508A	MI-002-121508A	OE-02A-121708A	OE-02B-121708A
			Sample Date & Time	12/16/2008 3:05:00 PM	12/16/2008 4:25:00 PM	12/17/2008 10:40:00 AM	12/17/2008 1:15:00 PM	12/15/2008 3:20:00 PM	12/15/2008 4:25:00 PM	12/17/2008 2:20:00 PM	12/17/2008 2:35:00 PM
			Sample Type	N	N	N	N	N	N	N	N
			Field Duplicate Parent Sample								
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**								
Aroclor 1016	12674-11-2	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1221	11104-28-2	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1232	11141-16-5	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1242	53469-21-9	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1248	12672-29-6	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1254	11097-69-1	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1260	11096-82-5	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1262	37324-23-5	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Aroclor 1268	11100-14-4	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Notes:

EPA-RSL-GW- EPA Maximum Contaminant Levels established
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2008 Groundwater Sample Dioxin/Furan Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	AL-1	AL-14	ARC-3	ASI-04D2	ASI-14D2	ASI-14D2	ASI-14S	ASI-15D2	ASI-23D2
			Sample ID	AL-001-121708A	AL-014-121608A	ARC-003-121708A	ASI-004D2-121808A	ASI-014D2-121608A	ASI-014D2-121608AD	ASI-014S-121608A	ASI-015D2-121808A	ASI-023D2-121608A
			Sample Date & Time	12/17/2008 10:55:00 AM	12/16/2008 2:40:00 PM	12/17/2008 10:40:00 AM	12/18/2008 11:35:00 AM	12/16/2008 11:20:00 AM	12/16/2008 11:55:00 AM	12/16/2008 10:25:00 AM	12/18/2008 10:00:00 AM	12/16/2008 3:05:00 PM
			Sample Type	N	N	N	N	N	FD	N	N	N
			Field Duplicate Parent Sample						ASI-014D2-121608A			
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**									
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	--	--	2.91 U	2.18 U	5.3 U	23 U	7.39 UEMC	3.72 UEMC	4 UEMC	2.83 U	63.4 J
1,2,3,4,6,7,8,9-Octachlorodibenzo-P-Dioxin	3268-87-9	--	--	9.48 U	8.22 UEMC	4.01 U	6.09 U	7.03 UEMC	4.78 UEMC	7.63 UEMC	4.73 UEMC	7.58 UEMC
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	--	--	2.38 U	2.13 U	2.43 U	1.49 U	1.59 U	1.6 U	1.04 U	1.75 U	5.28 UEMC
1,2,3,4,6,7,8-Heptachlorodibenzo-P-Dioxin	35822-46-9	--	--	2.19 U	2.2 U	2.4 U	1.61 U	3.19 UEMC	2.39 UEMC	1.42 U	1.73 U	2.31 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	--	--	2.46 U	2.21 U	2.99 U	2.22 U	2.14 UEMC	1.83 U	1.26 UEMC	1.63 U	2.22 U
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	--	--	1.76 U	0.887 U	1.49 U	1.32 U	1.38 UEMC	0.922 U	0.987 U	1.93 U	1.13 U
1,2,3,4,7,8-Hexachlorodibenzo-P-Dioxin	39227-28-6	--	--	2.02 U	1.58 U	2.22 U	2.2 U	1.25 U	1.51 U	1.14 U	2.03 U	1.84 U
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	--	--	2.03 U	0.98 U	1.67 U	1.46 U	1.21 UEMC	1.01 U	0.897 U	1.7 U	1.47 UEMC
1,2,3,6,7,8-Hexachlorodibenzo-P-Dioxin	57653-85-7	--	--	2.3 U	1.99 U	2.18 U	1.87 U	1.58 U	1.45 U	1.29 U	2.53 U	1.71 U
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	--	--	2.65 U	1.09 U	1.92 U	1.84 U	1.13 U	1.31 U	1.22 UEMC	1.98 U	1.86 UEMC
1,2,3,7,8,9-Hexachlorodibenzo-P-Dioxin	19408-74-3	--	--	2.11 U	2.5 U	2.2 U	2.45 U	1.64 U	1.34 U	1.15 U	2.52 U	2.39 UEMC
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	--	--	1.82 U	1.46 U	1.67 U	1.54 U	1.22 U	1.32 U	1.09 U	1.37 U	1.34 U
1,2,3,7,8-Pentachlorodibenzo-P-Dioxin	40321-76-4	--	--	2.88 U	1.62 U	1.97 U	1.58 U	1.48 U	1.53 U	1.59 U	2.27 U	1.92 U
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	--	--	1.9 U	1.68 U	1.43 U	1.77 U	1.54 UEMC	1.15 U	0.659 U	1.72 U	2.15 UEMC
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	--	--	1.41 U	1.3 U	1.3 U	1.19 U	1.17 U	1.01 U	0.838 U	1.48 U	1.08 U
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	--	--	3.63 U	2.65 U	2.76 U	2.2 U	2.04 U	2.25 U	2.36 U	2.95 U	2.07 U
2,3,7,8-Tetrachlorodibenzo-P-Dioxin	1746-01-6	30	--	3.77 U	2.54 U	3.58 U	3.28 U	2.69 U	2.43 U	2.91 U	4.21 U	3.02 U
Dioxin/Furan - Toxic Equivalent	DF-TEQ	30	--	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.019 J
Heptachlorodibenzofuran (total)	38998-75-3	--	--	2.38 UJ	2.13 UJ	2.43 UJ	1.49 UJ	3.73 UJ	1.6 UJ	1.26 UJ	1.63 UJ	5.28 UJ
Heptachlorodibenzo-p-dioxin (total)	37871-00-4	--	--	2.19 UJ	2.2 UJ	2.4 UJ	1.61 UJ	4.99 UJ	2.39 UJ	1.42 UJ	1.73 UJ	2.31 UJ
Hexachlorodibenzofuran (total)	55684-94-1	--	--	1.76 UJ	1.68 UJ	1.43 UJ	1.32 UJ	4.13 UJ	0.922 UJ	1.22 UJ	1.7 UJ	5.48 UJ
Hexachlorodibenzo-p-dioxin (total)	34465-46-8	--	--	2.02 UJ	1.58 UJ	2.18 UJ	1.87 UJ	1.25 UJ	1.34 UJ	1.14 UJ	2.03 UJ	4.23 UJ
Pentachlorodibenzofuran (total)	30402-15-4	--	--	1.41 UJ	1.3 UJ	1.3 UJ	1.19 UJ	1.17 UJ	1.01 UJ	0.838 UJ	1.37 UJ	1.08 UJ
Pentachlorodibenzo-p-dioxin (total)	36088-22-9	--	--	2.88 UJ	1.62 UJ	1.97 UJ	1.58 UJ	1.48 UJ	1.53 UJ	1.59 UJ	2.27 UJ	1.92 UJ
Tetrachlorodibenzo(p)dioxin (total)	41903-57-5	--	--	3.77 UJ	2.54 UJ	3.58 UJ	3.28 UJ	2.69 UJ	2.43 UJ	2.91 UJ	4.21 UJ	3.02 UJ
Tetrachlorodibenzofuran (total)	55722-27-5	--	--	3.63 UJ	2.65 UJ	2.76 UJ	2.2 UJ	2.04 UJ	2.25 UJ	2.36 UJ	2.95 UJ	2.07 UJ

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in picograms per liter (pg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
J - data qualifier indicates that the result is estimated
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2008 Groundwater Sample Dioxin/Furan Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-23S	BM-3D	BR-1	MI-01	MI-02	OE-2A	OE-2B
			Sample ID	ASI-023S-121608A	BM-03D-121708A	BR-001-121708A	MI-001-121508A	MI-002-121508A	OE-02A-121708A	OE-02B-121708A
			Sample Date & Time	12/16/2008 4:25:00 PM	12/17/2008 10:40:00 AM	12/17/2008 1:15:00 PM	12/15/2008 3:20:00 PM	12/15/2008 4:25:00 PM	12/17/2008 2:20:00 PM	12/17/2008 2:35:00 PM
			Sample Type	N	N	N	N	N	N	N
			Field Duplicate Parent Sample							
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**							
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	--	--	6.32 UEMC	2.46 U	5.44 UEMC	22.5 J	5.92 U	33.6 UEMC	5.84 UEMC
1,2,3,4,6,7,8,9-Octachlorodibenzo-P-Dioxin	3268-87-9	--	--	18.1 U	6.03 U	37.6 U	10 UEMC	16.2 U	4.02 UEMC	6.59 UEMC
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	--	--	2.83 U	1.45 U	2.24 U	3.85 U	2.23 UEMC	2.03 U	2.9 U
1,2,3,4,6,7,8-Heptachlorodibenzo-P-Dioxin	35822-46-9	--	--	2.37 U	2.25 U	3.53 UEMC	3.41 U	5.17 U	1.48 U	2.57 U
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	--	--	2.81 U	1.85 U	2.37 U	5.22 U	2.74 UEMC	3.21 U	3.16 U
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	--	--	1.64 U	1.24 U	1.56 U	2.13 U	1.81 U	1.49 U	1.75 U
1,2,3,4,7,8-Hexachlorodibenzo-P-Dioxin	39227-28-6	--	--	1.65 U	2.23 U	2.02 U	2.59 U	1.1 U	1.47 U	1.79 U
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	--	--	1.27 U	1.34 U	1.66 U	1.45 U	1.57 UEMC	1.79 U	1.84 U
1,2,3,6,7,8-Hexachlorodibenzo-P-Dioxin	57653-85-7	--	--	2.21 U	1.93 U	2.07 U	3.68 U	1.01 U	1.74 U	1.87 U
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	--	--	1.92 U	1.87 U	2.39 U	2.15 U	2.1 UEMC	1.89 U	2.38 U
1,2,3,7,8,9-Hexachlorodibenzo-P-Dioxin	19408-74-3	--	--	1.94 U	1.81 U	2.01 U	2.67 U	1.29 U	1.76 U	2.09 U
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	--	--	1.74 U	2.13 U	1.56 U	1.65 U	1.56 U	1.51 U	1.92 U
1,2,3,7,8-Pentachlorodibenzo-P-Dioxin	40321-76-4	--	--	1.74 U	2.17 U	1.94 U	1.94 U	1.64 U	2.03 U	1.93 U
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	--	--	1.37 U	1.38 U	2.39 U	1.99 U	1.35 U	1.18 U	1.81 U
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	--	--	1.13 U	1.25 U	1.54 UEMC	2.08 EMPC	1.23 U	1.18 U	1.57 UEMC
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	--	--	2.89 U	2.67 U	3.96 U	2.43 U	2.33 U	3.83 U	3.36 U
2,3,7,8-Tetrachlorodibenzo-P-Dioxin	1746-01-6	30	--	3.09 U	3.45 U	3.35 U	2.2 U	2.74 U	3.38 U	3.31 U
Dioxin/Furan - Toxic Equivalent	DF-TEQ	30	--	0 U	0 U	0 U	0.63 J	0 U	0 U	0 U
Heptachlorodibenzofuran (total)	38998-75-3	--	--	2.81 UJ	1.45 UJ	2.24 UJ	3.85 UJ	4.98 UJ	2.03 UJ	2.9 UJ
Heptachlorodibenzo-p-dioxin (total)	37871-00-4	--	--	2.37 UJ	2.25 UJ	3.53 UJ	3.41 UJ	5.17 UJ	1.48 UJ	2.57 UJ
Hexachlorodibenzofuran (total)	55684-94-1	--	--	1.27 UJ	1.24 UJ	1.56 UJ	8.67 EMPC	6.83 UJ	1.18 UJ	1.75 UJ
Hexachlorodibenzo-p-dioxin (total)	34465-46-8	--	--	1.65 UJ	1.81 UJ	2.01 UJ	2.59 UJ	1.01 UJ	1.47 UJ	1.79 UJ
Pentachlorodibenzofuran (total)	30402-15-4	--	--	1.13 UJ	1.25 UJ	1.54 UJ	5.86 EMPC	1.96 UJ	1.18 UJ	1.25 UJ
Pentachlorodibenzo-p-dioxin (total)	36088-22-9	--	--	1.74 UJ	2.17 UJ	1.94 UJ	1.94 UJ	1.64 UJ	2.03 UJ	1.93 UJ
Tetrachlorodibenzo(p)dioxin (total)	41903-57-5	--	--	3.09 UJ	3.45 UJ	3.35 UJ	2.2 UJ	2.74 UJ	3.38 UJ	3.31 UJ
Tetrachlorodibenzofuran (total)	55722-27-5	--	--	2.89 UJ	2.67 UJ	3.96 UJ	7.55 EMPC	2.33 UJ	3.83 UJ	3.36 UJ

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in picograms per liter (pg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
J - data qualifier indicates that the result is estimated
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2012 Groundwater Sample Dissolved Gases Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-05D2	MW-04D	MW-06D	MW-06M	MW-08M	MW-08M	MW-11S
			Sample ID	ASI-05D2-0612A	MW-04D-0612B	MW-06D-0612A	MW-06M-0612A	MW-08M-0612B	MW-DUP02-0612B	MW-11S-0612A
			Sample Date & Time	6/6/2012 2:30:00 PM	6/6/2012 1:50:00 PM	6/6/2012 12:25:00 PM	6/6/2012 9:45:00 AM	6/6/2012 10:25:00 AM	6/6/2012 10:30:00 AM	6/6/2012 2:55:00 PM
			Sample Type	N	N	N	N	N	FD	N
			Field Duplicate Parent Sample						MW-08M-0612B	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**							
Carbon Dioxide	124-38-9	--	--	7040	7570	2820	8830	13400	11100	12400
Ethane	74-84-0	--	--	1.3 U	1.3 U	1.3 U	1.3 U	1.2 U	1.3 U	1.3 U
Ethylene	74-85-1	--	--	1.6 U	1.6 U	1.6 U	1.6 U	1.5 U	1.6 U	1.6 U
Methane	74-82-8	--	--	360	25	16	140	3.9	3.8	0.61 U

Notes:

EPA-RSL-GW-MCL- EPA Maximum Contaminant Levels established
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2012 Groundwater Sample Organic Acid Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-05D2	MW-04D	MW-06D	MW-06M	MW-08M	MW-08M	MW-11S
			Sample ID	ASI-05D2-0612A	MW-04D-0612B	MW-06D-0612A	MW-06M-0612A	MW-08M-0612B	MW-DUP02-0612B	MW-11S-0612A
			Sample Date & Time	6/6/2012 2:30:00 PM	6/6/2012 1:50:00 PM	6/6/2012 12:25:00 PM	6/6/2012 9:45:00 AM	6/6/2012 10:25:00 AM	6/6/2012 10:30:00 AM	6/6/2012 2:55:00 PM
			Sample Type	N	N	N	N	N	FD	N
			Field Duplicate Parent Sample						MW-08M-0612B	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**							
Acetic Acid	64-19-7	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Butyric Acid	107-92-6	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Lactic Acid	50-21-5	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Propionic Acid	79-09-4	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Pyruvic Acid	127-17-3	--	--	5 U	5 U	5 U	5 U	5 U	5 U	5 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012

VT GWPR - Vermont Ground Water Protection Rule

All criterea and results are reported in milligrams per liter (mg/L)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2012 Groundwater Sample Alkalinity Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-05D2	MW-04D	MW-06D	MW-06M	MW-08M	MW-08M	MW-11S
			Sample ID	ASI-05D2-0612A	MW-04D-0612B	MW-06D-0612A	MW-06M-0612A	MW-08M-0612B	MW-DUP02-0612B	MW-11S-0612A
			Sample Date & Time	6/6/2012 2:30:00 PM	6/6/2012 1:50:00 PM	6/6/2012 12:25:00 PM	6/6/2012 9:45:00 AM	6/6/2012 10:25:00 AM	6/6/2012 10:30:00 AM	6/6/2012 2:55:00 PM
			Sample Type	N	N	N	N	N	FD	N
			Field Duplicate Parent Sample						MW-08M-0612B	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**							
Alkalinity	ALKT	--	--	210 J	110 J	110 J	140 J	84 J	83 J	130 J

Notes:

EPA-RSL-GW-MCL- EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in milligrams per liter (mg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is estimated
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2012 Groundwater Sample Anions Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-05D2	MW-04D	MW-06D	MW-06M	MW-08M	MW-08M	MW-11S
			Sample ID	ASI-05D2-0612A	MW-04D-0612B	MW-06D-0612A	MW-06M-0612A	MW-08M-0612B	MW-DUP02-0612B	MW-11S-0612A
			Sample Date & Time	6/6/2012 2:30:00 PM	6/6/2012 1:50:00 PM	6/6/2012 12:25:00 PM	6/6/2012 9:45:00 AM	6/6/2012 10:25:00 AM	6/6/2012 10:30:00 AM	6/6/2012 2:55:00 PM
			Sample Type	N	N	N	N	N	FD	N
			Field Duplicate Parent Sample						MW-08M-0612B	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**							
Bromide	24959-67-9	--	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chloride	16887-00-6	--	--	160	240	137	360	82	78	640
Fluoride	16984-48-8	--	--	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nitrate	NO3	**10**	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	**18**
Nitrate as Nitrogen	NO3-N	--	--	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	4.06
Nitrite	NO2	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.5 UJ
Nitrite + Nitrate (as Nitrogen)	NO3NO2-N	--	--	0.03 U					0.03 U	
Nitrite as Nitrogen	NO2-N	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.3 U
o-Phosphate as Phosphorus	98059-61-1	--	--	0.01 U					0.01 U	
Sulfate	14808-79-8	--	--	36	41	50	71	41	41	23
Sulfide	18496-25-8	--	--	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in milligrams per liter (mg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is estimated
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-2
Analytical Data Summary
2012 Groundwater Sample Total Organic Carbon Results
Commerce Street Plume Superfund Site
Williston, Vermont

			Sample Location	ASI-05D2	MW-04D	MW-06D	MW-06M	MW-08M	MW-08M	MW-11S
			Sample ID	ASI-05D2-0612A	MW-04D-0612B	MW-06D-0612A	MW-06M-0612A	MW-08M-0612B	MW-DUP02-0612B	MW-11S-0612A
			Sample Date & Time	6/6/2012 2:30:00 PM	6/6/2012 1:50:00 PM	6/6/2012 12:25:00 PM	6/6/2012 9:45:00 AM	6/6/2012 10:25:00 AM	6/6/2012 10:30:00 AM	6/6/2012 2:55:00 PM
			Sample Type	N	N	N	N	N	FD	N
			Field Duplicate Parent Sample						MW-08M-0612B	
Chemical Name	**CAS Number**	**EPA-RSL-GW-MCL-MAY2012**	**VT GWPR**							
Total Organic Carbon (TOC)	TOC	--	--	2.9 J	10 U	10 U	10 U	10 U	10 U	10 U

Notes:

EPA-RSL-GW-MCL-MAY2012 - EPA Maximum Contaminant Levels established May 2012
VT GWPR - Vermont Ground Water Protection Rule
All criteria and results are reported in milligrams per liter (mg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening
U - data qualifier indicates that the result is
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-3
Analytical Data Summary
2010 Soil Sample Volatile Organic Compound Results (Screening Only)
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-01	SB-01	SB-01	SB-01	SB-01	SB-01	SB-01	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02
				Sample ID	SB1 0-1	SB1 3-3.5	SB1 8-8.5	SB1 12-12.5	SB1 17-17.5	SB1 22-22.5	SB1 44.5-45	SB02 0.5-1	SB02 2-2.5	SB02 7-7.5	SB02 12.5-13	SB02 17-17.5	SB02 22.5-23	SB02 29.5-30	SB02 30-30.5	SB02 37.5-38
				Top Depth (feet below grade)	0	3	8	12	17	22	44.5	0.5	2	7	12.5	17	22.5	29.5	30	37.5
				Bottom Depth (feet below grade)	1	3.5	8.5	12.5	17.5	22.5	45	1	2.5	7.5	13	17.5	23	30	30.5	38
				Sample Date & Time	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/26/2010	8/26/2010
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**																
cis-1,2-Dichloroethene	156-59-2	160,000	2,000,000	673,000	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U
Tetrachloroethene	127-18-4	22,000	110,000	800	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	79-01-6	**910**	***6,400***	**860**	4 U	4 U	4 U	4 U	4 U	6	66	4 U	4 U	4 U	4 U	4 U	2	740	**2460**	***12500***

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criteria and results are reported in micrograms per kilogram (µg/Kg)

-- - No standard value is available

VALUE Indicates exceedance of a screening value

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

Appendix D-3
Analytical Data Summary
2010 Soil Sample Volatile Organic Compound Results (Screening Only)
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-03	SB-03	SB-03	SB-03	SB-03	SB-03	SB-03	SB-03	SB-03	SB-04	SB-04	SB-04	SB-04	SB-04	SB-04	SB-04
				Sample ID	SB03 0.5-1	SB03 3-3.5	SB03 7-7.5	SB03 12-12.5	SB03 17-17.5	SB03 22-22.5	SB03 25-25.5	SB03 34.5-35	SB03 36.5-37	SB04 0.5-1	SB04 3.5-4	SB04 7-7.5	SB04 12-12.5	SB04 17-17.5	SB04 24.5-25	SB04 40.5-41
				Top Depth (feet below grade)	0.5	3	7	12	17	22	25	34.5	36.5	0.5	3.5	7	12	17	24.5	40.5
				Bottom Depth (feet below grade)	1	3.5	7.5	12.5	17.5	22.5	25.5	35	37	1	4	7.5	12.5	17.5	25	41
				Sample Date & Time	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**																
cis-1,2-Dichloroethene	156-59-2	160,000	2,000,000	673,000	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U
Tetrachloroethene	127-18-4	22,000	110,000	800	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	79-01-6	**910**	***6,400***	**860**	4 U	4 U	4 U	4 U	1	40	785	***7900***	**5700**	4 U	4 U	4 U	4 U	4 U	**1180**	**1710**

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criteria and results are reported in micrograms per kilogram (µg/Kg)

-- - No standard value is available

VALUE Indicates exceedance of a screening value

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

Appendix D-3
Analytical Data Summary
2010 Soil Sample Volatile Organic Compound Results (Screening Only)
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-05	SB-05	SB-05	SB-05	SB-05	SB-05	SB-06	SB-06	SB-06	SB-06	SB-06	SB-06	SB-06	SB-06	SB-06	SB-06
				Sample ID	SB05 0.5-1	SB05 3-3.5	SB05 7-7.5	SB05 13-13.5	SB05 17-17.5	SB05 25-35	SB06 1-2	SB06-3-3.5	SB06 7-7.5	SB06 13-13.5	SB06 18-18.5	SB06 23-23.5	SB06 27.5-28	SB06 32.5-33	SB06 37.5-38	SB06 42.5-43
				Top Depth (feet below grade)	0.5	3	7	13	17	25	1	3	7	13	18	23	27.5	32.5	37.5	42.5
				Bottom Depth (feet below grade)	1	3.5	7.5	13.5	17.5	35	2	3.5	7.5	13.5	18.5	23.5	28	33	38	43
				Sample Date & Time	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/26/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010	8/25/2010
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**																
cis-1,2-Dichloroethene	156-59-2	160,000	2,000,000	673,000	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U	80 U
Tetrachloroethene	127-18-4	22,000	110,000	800	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Trichloroethene	79-01-6	**910**	***6,400***	**860**	4 U	4 U	4 U	4 U	4 U	690	4 U	4 U	4 U	4 U	4 U	22	18	7	15	4 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criteria and results are reported in micrograms per kilogram (µg/Kg)

-- - No standard value is available

VALUE Indicates exceedance of a screening value

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

Appendix D-3
Analytical Data Summary
2012 Soil Sample Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-2	SB-12-2	SB-12-2	SB-12-2	SB-12-2	SB-12-2
				Sample ID	SB-12-1-5FT-0812	SB-12-1-10FT-0812	SB-12-1-15FT-0812	SB-12-1-20FT-0812	SB-12-1-25FT-0812	SB-12-1-30FT-0812	SB-12-1-35FT-0812	SB-12-1-48FT-0812	SB-12-2-5FT-0812	SB-12-2-10FT-0812	SB-12-2-15FT-0812	SB-12-2-20FT-0812	SB-12-2-25FT-0812	SB-DUP-01
				Top Depth (feet below grade)	3	5	10	15	20	25	30	35	3	5	10	15	20	20
				Bottom Depth (feet below grade)	5	10	15	20	25	30	35	48	5	10	15	20	25	25
				Sample Date & Time	8/6/2012 11:40:00 AM	8/6/2012 11:55:00 AM	8/6/2012 12:10:00 PM	8/6/2012 12:20:00 PM	8/6/2012 12:40:00 PM	8/6/2012 1:00:00 PM	8/6/2012 1:20:00 PM	8/6/2012 2:10:00 PM	8/7/2012 7:55:00 AM	8/7/2012 8:10:00 AM	8/7/2012 8:20:00 AM	8/7/2012 8:35:00 AM	8/7/2012 8:55:00 AM	8/7/2012 9:00:00 AM
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD
				Field Duplicate Parent Sample														SB-12-2-25FT-0812
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**														
1,1,1,2-Tetrachloroethane	630-20-6	1,900	9,300	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,1,1-Trichloroethane	71-55-6	8,700,000	38,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,1,2,2-Tetrachloroethane	79-34-5	560	2,800	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	43,000,000	180,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,1,2-Trichloroethane	79-00-5	1,100	5,300	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,1-Dichloroethane	75-34-3	3,300	17,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,1-Dichloroethene	75-35-4	240,000	1,100,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,1-Dichloropropene	563-58-6	--	--	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,2,3-Trichlorobenzene	87-61-6	49,000	490,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,2,3-Trichloropropane	96-18-4	5	95	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,2,4-Trichlorobenzene	120-82-1	22,000	99,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,2,4-Trimethylbenzene	95-63-6	62,000	260,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,2-Dibromo-3-Chloropropane	96-12-8	5.4	69	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,2-Dibromoethane	106-93-4	34	170	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,2-Dichlorobenzene	95-50-1	1,900,000	9,800,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,2-Dichloroethane	107-06-2	430	2,200	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,2-Dichloropropane	78-87-5	940	4,700	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,3,5-Trimethylbenzene	108-67-8	780,000	10,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,3-Dichlorobenzene	541-73-1	--	--	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,3-Dichloropropane	142-28-9	1,600,000	20,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
1,4-Dichlorobenzene	106-46-7	2,400	12,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
2,2-Dichloropropane	594-20-7	--	--	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
2-Butanone	78-93-3	28,000,000	200,000,000	40,400,000	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
2-Chlorotoluene	95-49-8	1,600,000	20,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
2-Hexanone	591-78-6	210,000	1,400,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
2-Methyl-2-phenylpropane	98-06-6	--	--	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
2-Phenylbutane	135-98-8	--	--	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
4-Chlorotoluene	106-43-4	1,600,000	20,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
4-Methyl-2-Pentanone	108-10-1	5,300,000	53,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Acetone	67-64-1	61,000,000	630,000,000	--	59 U	54 U	62 U	69 U	65 U	110	86.6	132.1	59 U	58 U	72	67 U	140	54 U
Acrylonitrile	107-13-1	240	1,200	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Benzene	71-43-2	1,100	5,400	6,240	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Bromobenzene	108-86-1	300,000	1,800,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Bromochloromethane	74-97-5	160,000	680,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Bromodichloromethane	75-27-4	270	1,400	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Bromoform	75-25-2	62,000	220,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Bromomethane	74-83-9	7,300	32,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Carbon Disulfide	75-15-0	820,000	3,700,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Carbon Tetrachloride	56-23-5	610	3,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Chlorobenzene	108-90-7	290,000	1,400,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Chloroethane	75-00-3	15,000,000	61,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Chloroform	67-66-3	290	1,500	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Chloromethane	74-87-3	120,000	500,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
cis-1,2-Dichloroethene	156-59-2	160,000	2,000,000	673,000	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
cis-1,3-Dichloropropene	10061-01-5	--	--	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Cymene	99-87-6	--	--	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Dibromochloromethane	124-48-1	680	3,300	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Dibromomethane	74-95-3	25,000	110,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Dichlorodifluoromethane	75-71-8	94,000	400,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Diethyl ether	60-29-7	16,000,000	200,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U

Appendix D-3
Analytical Data Summary
2012 Soil Sample Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-2	SB-12-2	SB-12-2	SB-12-2	SB-12-2	SB-12-2
				Sample ID	SB-12-1-5FT-0812	SB-12-1-10FT-0812	SB-12-1-15FT-0812	SB-12-1-20FT-0812	SB-12-1-25FT-0812	SB-12-1-30FT-0812	SB-12-1-35FT-0812	SB-12-1-48FT-0812	SB-12-2-5FT-0812	SB-12-2-10FT-0812	SB-12-2-15FT-0812	SB-12-2-20FT-0812	SB-12-2-25FT-0812	SB-DUP-01
				Top Depth (feet below grade)	3	5	10	15	20	25	30	35	3	5	10	15	20	20
				Bottom Depth (feet below grade)	5	10	15	20	25	30	35	48	5	10	15	20	25	25
				Sample Date & Time	8/6/2012 11:40:00 AM	8/6/2012 11:55:00 AM	8/6/2012 12:10:00 PM	8/6/2012 12:20:00 PM	8/6/2012 12:40:00 PM	8/6/2012 1:00:00 PM	8/6/2012 1:20:00 PM	8/6/2012 2:10:00 PM	8/7/2012 7:55:00 AM	8/7/2012 8:10:00 AM	8/7/2012 8:20:00 AM	8/7/2012 8:35:00 AM	8/7/2012 8:55:00 AM	8/7/2012 9:00:00 AM
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD
				Field Duplicate Parent Sample														SB-12-2-25FT-0812
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**														
Ethylbenzene	100-41-4	5,400	27,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Hexachlorobutadiene	87-68-3	6,200	22,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Isopropylbenzene	98-82-8	2,100,000	11,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
m,p-Xylene	179601-23-1	630,000	2,700,000	--	120 U	110 U	120 U	140 U	130 U	140 U	140 U	220 U	120 U	120 U	120 U	130 U	96 U	110 U
Methyl Tert-Butyl Ether	1634-04-4	43,000	220,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Methylene Chloride	75-09-2	56,000	960,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Naphthalene	91-20-3	3,600	18,000	1,070,000	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
n-Butylbenzene	104-51-8	3,900,000	51,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
n-Propylbenzene	103-65-1	3,400,000	21,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
o-Xylene	95-47-6	690,000	3,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Styrene	100-42-5	6,300,000	36,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Tetrachloroethene	127-18-4	22,000	110,000	800	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Tetrahydrofuran	109-99-9	18,000,000	95,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Toluene	108-88-3	5,000,000	45,000,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
trans-1,2-Dichloroethene	156-60-5	150,000	690,000	135,000	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
trans-1,3-Dichloropropene	10061-02-6	--	--	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Trichloroethene	79-01-6	**910**	6,400	**860**	59 U	54 U	92.7	130	95	110	70 U	110 U	59 U	58 U	61 U	110	**2100**	420.2
Trichlorofluoromethane	75-69-4	790,000	3,400,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Vinyl Acetate	108-05-4	970,000	4,100,000	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U
Vinyl Chloride	75-01-4	60	1,700	--	59 U	54 U	62 U	69 U	65 U	69 U	70 U	110 U	59 U	58 U	61 U	67 U	48 U	54 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criteria and results are reported in micrograms per kilogram (µg/Kg)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-3
Analytical Data Summary
2012 Soil Sample Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-2	SB-12-2	SB-12-2	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-4	SB-12-4
				Sample ID	SB-12-2-30FT-0812	SB-12-2-35FT-0812	SB-12-2-40FT-0812	SB-12-3-5FT-0812	SB-12-3-10FT-0812	SB-12-3-15FT-0812	SB-12-3-20FT-0812	SB-12-3-25FT-0812	SB-12-3-30FT-0812	SB-12-3-35FT-0812	SB-12-3-40FT-0812	SB-12-3-45FT-0812	SB-12-4-5FT-0812	SB-12-4-10FT-0812
				Top Depth (feet below grade)	25	30	35	3	5	10	15	20	25	30	35	40	0	5
				Bottom Depth (feet below grade)	30	35	40	5	10	15	20	25	30	35	40	45	5	10
				Sample Date & Time	8/7/2012 9:10:00 AM	8/7/2012 9:35:00 AM	8/7/2012 9:55:00 AM	8/7/2012 11:40:00 AM	8/7/2012 11:30:00 AM	8/7/2012 11:35:00 AM	8/7/2012 11:45:00 AM	8/7/2012 12:00:00 PM	8/7/2012 12:30:00 PM	8/7/2012 12:55:00 PM	8/7/2012 1:20:00 PM	8/7/2012 1:45:00 PM	8/7/2012 3:15:00 PM	8/7/2012 3:25:00 PM
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
				Field Duplicate Parent Sample														
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**														
1,1,1,2-Tetrachloroethane	630-20-6	1,900	9,300	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,1,1-Trichloroethane	71-55-6	8,700,000	38,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,1,2,2-Tetrachloroethane	79-34-5	560	2,800	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	43,000,000	180,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,1,2-Trichloroethane	79-00-5	1,100	5,300	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,1-Dichloroethane	75-34-3	3,300	17,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,1-Dichloroethene	75-35-4	240,000	1,100,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,1-Dichloropropene	563-58-6	--	--	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,2,3-Trichlorobenzene	87-61-6	49,000	490,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,2,3-Trichloropropane	96-18-4	5	95	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,2,4-Trichlorobenzene	120-82-1	22,000	99,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,2,4-Trimethylbenzene	95-63-6	62,000	260,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,2-Dibromo-3-Chloropropane	96-12-8	5.4	69	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,2-Dibromoethane	106-93-4	34	170	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,2-Dichlorobenzene	95-50-1	1,900,000	9,800,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,2-Dichloroethane	107-06-2	430	2,200	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,2-Dichloropropane	78-87-5	940	4,700	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,3,5-Trimethylbenzene	108-67-8	780,000	10,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,3-Dichlorobenzene	541-73-1	--	--	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,3-Dichloropropane	142-28-9	1,600,000	20,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
1,4-Dichlorobenzene	106-46-7	2,400	12,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
2,2-Dichloropropane	594-20-7	--	--	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
2-Butanone	78-93-3	28,000,000	200,000,000	40,400,000	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
2-Chlorotoluene	95-49-8	1,600,000	20,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
2-Hexanone	591-78-6	210,000	1,400,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
2-Methyl-2-phenylpropane	98-06-6	--	--	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
2-Phenylbutane	135-98-8	--	--	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
4-Chlorotoluene	106-43-4	1,600,000	20,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
4-Methyl-2-Pentanone	108-10-1	5,300,000	53,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Acetone	67-64-1	61,000,000	630,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Acrylonitrile	107-13-1	240	1,200	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Benzene	71-43-2	1,100	5,400	6,240	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Bromobenzene	108-86-1	300,000	1,800,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Bromochloromethane	74-97-5	160,000	680,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Bromodichloromethane	75-27-4	270	1,400	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Bromoform	75-25-2	62,000	220,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Bromomethane	74-83-9	7,300	32,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Carbon Disulfide	75-15-0	820,000	3,700,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Carbon Tetrachloride	56-23-5	610	3,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Chlorobenzene	108-90-7	290,000	1,400,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Chloroethane	75-00-3	15,000,000	61,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Chloroform	67-66-3	290	1,500	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Chloromethane	74-87-3	120,000	500,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
cis-1,2-Dichloroethene	156-59-2	160,000	2,000,000	673,000	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
cis-1,3-Dichloropropene	10061-01-5	--	--	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Cymene	99-87-6	--	--	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Dibromochloromethane	124-48-1	680	3,300	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Dibromomethane	74-95-3	25,000	110,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Dichlorodifluoromethane	75-71-8	94,000	400,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Diethyl ether	60-29-7	16,000,000	200,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U

Appendix D-3
Analytical Data Summary
2012 Soil Sample Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-2	SB-12-2	SB-12-2	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-4	SB-12-4
				Sample ID	SB-12-2-30FT-0812	SB-12-2-35FT-0812	SB-12-2-40FT-0812	SB-12-3-5FT-0812	SB-12-3-10FT-0812	SB-12-3-15FT-0812	SB-12-3-20FT-0812	SB-12-3-25FT-0812	SB-12-3-30FT-0812	SB-12-3-35FT-0812	SB-12-3-40FT-0812	SB-12-3-45FT-0812	SB-12-4-5FT-0812	SB-12-4-10FT-0812
				Top Depth (feet below grade)	25	30	35	3	5	10	15	20	25	30	35	40	0	5
				Bottom Depth (feet below grade)	30	35	40	5	10	15	20	25	30	35	40	45	5	10
				Sample Date & Time	8/7/2012 9:10:00 AM	8/7/2012 9:35:00 AM	8/7/2012 9:55:00 AM	8/7/2012 11:40:00 AM	8/7/2012 11:30:00 AM	8/7/2012 11:35:00 AM	8/7/2012 11:45:00 AM	8/7/2012 12:00:00 PM	8/7/2012 12:30:00 PM	8/7/2012 12:55:00 PM	8/7/2012 1:20:00 PM	8/7/2012 1:45:00 PM	8/7/2012 3:15:00 PM	8/7/2012 3:25:00 PM
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
				Field Duplicate Parent Sample														
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**														
Ethylbenzene	100-41-4	5,400	27,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Hexachlorobutadiene	87-68-3	6,200	22,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Isopropylbenzene	98-82-8	2,100,000	11,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
m,p-Xylene	179601-23-1	630,000	2,700,000	--	140 U	140 U	220 U	140 U	120 U	140 U	130 U	130 U	140 U	140 U	130 U	140 U	130 U	140 U
Methyl Tert-Butyl Ether	1634-04-4	43,000	220,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Methylene Chloride	75-09-2	56,000	960,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Naphthalene	91-20-3	3,600	18,000	1,070,000	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
n-Butylbenzene	104-51-8	3,900,000	51,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
n-Propylbenzene	103-65-1	3,400,000	21,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
o-Xylene	95-47-6	690,000	3,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Styrene	100-42-5	6,300,000	36,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Tetrachloroethene	127-18-4	22,000	110,000	800	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Tetrahydrofuran	109-99-9	18,000,000	95,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Toluene	108-88-3	5,000,000	45,000,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
trans-1,2-Dichloroethene	156-60-5	150,000	690,000	135,000	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
trans-1,3-Dichloropropene	10061-02-6	--	--	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Trichloroethene	79-01-6	**910**	6,400	**860**	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Trichlorofluoromethane	75-69-4	790,000	3,400,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Vinyl Acetate	108-05-4	970,000	4,100,000	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U
Vinyl Chloride	75-01-4	60	1,700	--	69 U	70 U	110 U	71 U	60 U	68 U	63 U	64 U	69 U	71 U	66 U	71 U	66 U	71 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criteria and results are reported in micrograms per kilogram (µg/Kg)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-3
Analytical Data Summary
2012 Soil Sample Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-5	SB-12-5	SB-12-5	SB-12-5	SB-12-6	SB-12-6	SB-12-6
				Sample ID	SB-12-4-15FT-0812	SB-12-4-20FT-0812	SB-12-4-25FT-0812	SB-12-4-30FT-0812	SB-12-4-35FT-0812	SB-12-4-40FT-0812	SB-12-5-1FT-0812	SB-12-5-4FT-0812	SB-12-5-6FT-0812	SB-DUP-02	SB-12-6-1FT-0812	SB-12-6-4FT-0812	SB-12-6-6FT-0812
				Top Depth (feet below grade)	10	15	20	25	30	35	0	2	5	5	0	2	5
				Bottom Depth (feet below grade)	15	20	25	30	35	40	1	4	6	6	1	4	6
				Sample Date & Time	8/7/2012 3:35:00 PM	8/7/2012 3:50:00 PM	8/7/2012 4:05:00 PM	8/7/2012 4:25:00 PM	8/7/2012 4:40:00 PM	8/7/2012 5:10:00 PM	8/8/2012 9:15:00 AM	8/8/2012 9:25:00 AM	8/8/2012 9:50:00 AM	8/8/2012 10:10:00 AM	8/8/2012 10:25:00 AM	8/8/2012 10:35:00 AM	8/8/2012 11:00:00 AM
				Sample Type	N	N	N	N	N	N	N	N	N	FD	N	N	N
				Field Duplicate Parent Sample										SB-12-5-6FT-0812			
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**													
1,1,1,2-Tetrachloroethane	630-20-6	1,900	9,300	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,1,1-Trichloroethane	71-55-6	8,700,000	38,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,1,2,2-Tetrachloroethane	79-34-5	560	2,800	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	43,000,000	180,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,1,2-Trichloroethane	79-00-5	1,100	5,300	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,1-Dichloroethane	75-34-3	3,300	17,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,1-Dichloroethene	75-35-4	240,000	1,100,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,1-Dichloropropene	563-58-6	--	--	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,2,3-Trichlorobenzene	87-61-6	49,000	490,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,2,3-Trichloropropane	96-18-4	5	95	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,2,4-Trichlorobenzene	120-82-1	22,000	99,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,2,4-Trimethylbenzene	95-63-6	62,000	260,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,2-Dibromo-3-Chloropropane	96-12-8	5.4	69	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,2-Dibromoethane	106-93-4	34	170	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,2-Dichlorobenzene	95-50-1	1,900,000	9,800,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,2-Dichloroethane	107-06-2	430	2,200	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,2-Dichloropropane	78-87-5	940	4,700	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,3,5-Trimethylbenzene	108-67-8	780,000	10,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,3-Dichlorobenzene	541-73-1	--	--	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,3-Dichloropropane	142-28-9	1,600,000	20,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
1,4-Dichlorobenzene	106-46-7	2,400	12,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
2,2-Dichloropropane	594-20-7	--	--	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
2-Butanone	78-93-3	28,000,000	200,000,000	40,400,000	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
2-Chlorotoluene	95-49-8	1,600,000	20,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
2-Hexanone	591-78-6	210,000	1,400,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
2-Methyl-2-phenylpropane	98-06-6	--	--	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
2-Phenylbutane	135-98-8	--	--	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
4-Chlorotoluene	106-43-4	1,600,000	20,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
4-Methyl-2-Pentanone	108-10-1	5,300,000	53,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Acetone	67-64-1	61,000,000	630,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Acrylonitrile	107-13-1	240	1,200	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Benzene	71-43-2	1,100	5,400	6,240	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Bromobenzene	108-86-1	300,000	1,800,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Bromochloromethane	74-97-5	160,000	680,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Bromodichloromethane	75-27-4	270	1,400	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Bromoform	75-25-2	62,000	220,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Bromomethane	74-83-9	7,300	32,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Carbon Disulfide	75-15-0	820,000	3,700,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Carbon Tetrachloride	56-23-5	610	3,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Chlorobenzene	108-90-7	290,000	1,400,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Chloroethane	75-00-3	15,000,000	61,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Chloroform	67-66-3	290	1,500	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Chloromethane	74-87-3	120,000	500,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
cis-1,2-Dichloroethene	156-59-2	160,000	2,000,000	673,000	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
cis-1,3-Dichloropropene	10061-01-5	--	--	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Cymene	99-87-6	--	--	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Dibromochloromethane	124-48-1	680	3,300	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Dibromomethane	74-95-3	25,000	110,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Dichlorodifluoromethane	75-71-8	94,000	400,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Diethyl ether	60-29-7	16,000,000	200,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U

Appendix D-3
Analytical Data Summary
2012 Soil Sample Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-5	SB-12-5	SB-12-5	SB-12-5	SB-12-6	SB-12-6	SB-12-6
				Sample ID	SB-12-4-15FT-0812	SB-12-4-20FT-0812	SB-12-4-25FT-0812	SB-12-4-30FT-0812	SB-12-4-35FT-0812	SB-12-4-40FT-0812	SB-12-5-1FT-0812	SB-12-5-4FT-0812	SB-12-5-6FT-0812	SB-DUP-02	SB-12-6-1FT-0812	SB-12-6-4FT-0812	SB-12-6-6FT-0812
				Top Depth (feet below grade)	10	15	20	25	30	35	0	2	5	5	0	2	5
				Bottom Depth (feet below grade)	15	20	25	30	35	40	1	4	6	6	1	4	6
				Sample Date & Time	8/7/2012 3:35:00 PM	8/7/2012 3:50:00 PM	8/7/2012 4:05:00 PM	8/7/2012 4:25:00 PM	8/7/2012 4:40:00 PM	8/7/2012 5:10:00 PM	8/8/2012 9:15:00 AM	8/8/2012 9:25:00 AM	8/8/2012 9:50:00 AM	8/8/2012 10:10:00 AM	8/8/2012 10:25:00 AM	8/8/2012 10:35:00 AM	8/8/2012 11:00:00 AM
				Sample Type	N	N	N	N	N	N	N	N	N	FD	N	N	N
				Field Duplicate Parent Sample										SB-12-5-6FT-0812			
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**													
Ethylbenzene	100-41-4	5,400	27,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Hexachlorobutadiene	87-68-3	6,200	22,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Isopropylbenzene	98-82-8	2,100,000	11,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
m,p-Xylene	179601-23-1	630,000	2,700,000	--	130 U	130 U	130 U	130 U	130 U	150 U	120 U	120 U	130 U	110 U	110 U	120 U	120 U
Methyl Tert-Butyl Ether	1634-04-4	43,000	220,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Methylene Chloride	75-09-2	56,000	960,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Naphthalene	91-20-3	3,600	18,000	1,070,000	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
n-Butylbenzene	104-51-8	3,900,000	51,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
n-Propylbenzene	103-65-1	3,400,000	21,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
o-Xylene	95-47-6	690,000	3,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Styrene	100-42-5	6,300,000	36,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Tetrachloroethene	127-18-4	22,000	110,000	800	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Tetrahydrofuran	109-99-9	18,000,000	95,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Toluene	108-88-3	5,000,000	45,000,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
trans-1,2-Dichloroethene	156-60-5	150,000	690,000	135,000	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
trans-1,3-Dichloropropene	10061-02-6	--	--	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Trichloroethene	79-01-6	**910**	6,400	**860**	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Trichlorofluoromethane	75-69-4	790,000	3,400,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Vinyl Acetate	108-05-4	970,000	4,100,000	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U
Vinyl Chloride	75-01-4	60	1,700	--	65 U	63 U	66 U	63 U	63 U	76 U	59 U	61 U	63 U	54 U	55 U	58 U	58 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criteria and results are reported in micrograms per kilogram (µg/Kg)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-3
Analytical Data Summary
2012 Soil Sample Semivolatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-2	SB-12-2	SB-12-2	SB-12-2	SB-12-2	SB-12-2
				Sample ID	SB-12-1-5FT-0812	SB-12-1-10FT-0812	SB-12-1-15FT-0812	SB-12-1-20FT-0812	SB-12-1-25FT-0812	SB-12-1-30FT-0812	SB-12-1-35FT-0812	SB-12-1-48FT-0812	SB-12-2-5FT-0812	SB-12-2-10FT-0812	SB-12-2-15FT-0812	SB-12-2-20FT-0812	SB-12-2-25FT-0812	SB-12-2-30FT-0812
				Top Depth (feet below grade)	3	5	10	15	20	25	30	35	3	5	10	15	20	25
				Bottom Depth (feet below grade)	5	10	15	20	25	30	35	48	5	10	15	20	25	30
				Sample Date & Time	8/6/2012 11:40:00 AM	8/6/2012 11:55:00 AM	8/6/2012 12:10:00 PM	8/6/2012 12:20:00 PM	8/6/2012 12:40:00 PM	8/6/2012 1:00:00 PM	8/6/2012 1:20:00 PM	8/6/2012 2:10:00 PM	8/7/2012 7:55:00 AM	8/7/2012 8:10:00 AM	8/7/2012 8:20:00 AM	8/7/2012 8:35:00 AM	8/7/2012 8:55:00 AM	8/7/2012 9:10:00 AM
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
				Field Duplicate Parent Sample														
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**														
1,2,4,5-Tetrachlorobenzene	95-94-3	18,000	180,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
1,2,4-Trichlorobenzene	120-82-1	22,000	99,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
1,2-Dichlorobenzene	95-50-1	1,900,000	9,800,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
1,3-Dichlorobenzene	541-73-1	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
1,4-Dichlorobenzene	106-46-7	2,400	12,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
1,4-Naphthoquinone	130-15-4	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2,2'-Oxybis(1-Chloropropane)	108-60-1	4,600	22,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2,3,4,6-Tetrachlorophenol	58-90-2	1,800,000	18,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2,4,5-Trichlorophenol	95-95-4	6,100,000	62,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2,4,6-Trichlorophenol	88-06-2	44,000	160,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2,4-Dichlorophenol	120-83-2	180,000	1,800,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2,4-Dimethylphenol	105-67-9	1,200,000	12,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2,4-Dinitrophenol	51-28-5	120,000	1,200,000		980 U	1000 U	1300 U	1200 U	1100 U	1200 U	1100 U	1100 U	1100 U	830 U	860 U	900 U	780 U	980 U
2,4-Dinitrotoluene	121-14-2	1,600	5,500		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2,6-Dichlorophenol	87-65-0	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2,6-Dinitrotoluene	606-20-2	61,000	620,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2-Chloronaphthalene	91-58-7	6,300,000	82,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2-Chlorophenol	95-57-8	390,000	5,100,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2-Methylnaphthalene	91-57-6	230,000	2,200,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2-Methylphenol	95-48-7	3,100,000	31,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2-Nitroaniline	88-74-4	610,000	6,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
2-Nitrophenol	88-75-5	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
3 & 4 Methylphenol	15831-10-4	--	--		490 U	500 U	630 U	620 U	570 U	580 U	550 U	560 U	550 U	420 U	430 U	450 U	390 U	490 U
3,3'-Dichlorobenzidine	91-94-1	1,100	3,800		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
3-Methylchloranthrene	56-49-5	5	78		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
3-Nitroaniline	99-09-2	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
4,6-Dinitro-2-Methylphenol	534-52-1	4,900	49,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
4-Bromophenyl-Phenylether	101-55-3	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
4-Chloro-3-Methylphenol	59-50-7	6,100,000	62,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
4-Chloroaniline	106-47-8	2,400	8,600		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
4-Chlorophenyl-Phenylether	7005-72-3	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
4-Nitroaniline	100-01-6	24,000	86,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
4-Nitrophenol	100-02-7	--	--		490 U	500 U	630 U	620 U	570 U	580 U	550 U	560 U	550 U	420 U	430 U	450 U	390 U	490 U
4-Nitroquinoline-n-Oxide	56-57-5	--	--		490 U	500 U	630 U	620 U	570 U	580 U	550 U	560 U	550 U	420 U	430 U	450 U	390 U	490 U
Acenaphthene	83-32-9	3,400,000	33,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Acenaphthylene	208-96-8	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Acetophenone	98-86-2	7,800,000	100,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Aniline	62-53-3	85,000	300,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Anthracene	120-12-7	17,000,000	170,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Aramite	140-57-8	19,000	69,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Azobenzene	103-33-3	5,100	23,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Benzidine	92-87-5	1	8		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Benzo(A)Anthracene	56-55-3	**150**	2,100		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Benzo(A)Pyrene	50-32-8	**15**	***210***	**10**	240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Benzo(B)Fluoranthene	205-99-2	**150**	2,100		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Benzo(G,H,I)Perylene	191-24-2	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Benzo(K)Fluoranthene	207-08-9	1,500	21,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Benzoic Acid	65-85-0	240,000,000	2,500,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Benzyl Alcohol	100-51-6	6,100,000	62,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Bis(2-Chloroethoxy)Methane	111-91-1	180,000	1,800,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Bis(2-Chloroethyl)Ether	111-44-4	210	1,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Bis(2-Ethylhexyl)Phthalate	117-81-7	35,000	120,000	19,200	240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U

Appendix D-3
Analytical Data Summary
2012 Soil Sample Semivolatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-2	SB-12-2	SB-12-2	SB-12-2	SB-12-2	SB-12-2
				Sample ID	SB-12-1-5FT-0812	SB-12-1-10FT-0812	SB-12-1-15FT-0812	SB-12-1-20FT-0812	SB-12-1-25FT-0812	SB-12-1-30FT-0812	SB-12-1-35FT-0812	SB-12-1-48FT-0812	SB-12-2-5FT-0812	SB-12-2-10FT-0812	SB-12-2-15FT-0812	SB-12-2-20FT-0812	SB-12-2-25FT-0812	SB-12-2-30FT-0812
				Top Depth (feet below grade)	3	5	10	15	20	25	30	35	3	5	10	15	20	25
				Bottom Depth (feet below grade)	5	10	15	20	25	30	35	48	5	10	15	20	25	30
				Sample Date & Time	8/6/2012 11:40:00 AM	8/6/2012 11:55:00 AM	8/6/2012 12:10:00 PM	8/6/2012 12:20:00 PM	8/6/2012 12:40:00 PM	8/6/2012 1:00:00 PM	8/6/2012 1:20:00 PM	8/6/2012 2:10:00 PM	8/7/2012 7:55:00 AM	8/7/2012 8:10:00 AM	8/7/2012 8:20:00 AM	8/7/2012 8:35:00 AM	8/7/2012 8:55:00 AM	8/7/2012 9:10:00 AM
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N
				Field Duplicate Parent Sample														
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**														
Butylbenzylphthalate	85-68-7	260,000	910,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Carbazole	86-74-8	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Chlorobenzilate	510-15-6	4,400	16,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Chrysene	218-01-9	15,000	210,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Dibenz(A,H)Anthracene	53-70-3	15	210		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Dibenzofuran	132-64-9	78,000	1,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Diethylphthalate	84-66-2	49,000,000	490,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Dimethylphthalate	131-11-3	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Di-N-Butyl Phthalate	84-74-2	6,100,000	62,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Dinitrobutyl Phenol	88-85-7	61,000	620,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Di-N-Octyl Phthalate	117-84-0	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Ethyl methanesulfonate	62-50-0	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Fluoranthene	206-44-0	2,300,000	22,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Fluorene	86-73-7	2,300,000	22,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Hexachlorobenzene	118-74-1	300	1,100		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Hexachlorobutadiene	87-68-3	6,200	22,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Hexachlorocyclopentadiene	77-47-4	370,000	3,700,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Hexachloroethane	67-72-1	12,000	43,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Hexachloropropene	1888-71-7	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Indeno(1,2,3-Cd)Pyrene	193-39-5	150	2,100		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Isodrin	465-73-6	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Isophorone	78-59-1	510,000	1,800,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Isosafrole	120-58-1	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Kepone	143-50-0	49	170		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
m,p-Xylene	179601-23-1	630,000	2,700,000															
m-Dinitrobenzene	99-65-0	6,100	62,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Methyl Methanesulfonate	66-27-3	4,900	17,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Naphthalene	91-20-3	3,600	18,000	1,070,000	240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Naphthalene, 1-Methyl-	90-12-0	16,000	53,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Nitrobenzene	98-95-3	4,800	24,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
N-Nitrosodimethylamine	62-75-9	2	34		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
N-Nitroso-Di-N-Propylamine	621-64-7	69	250		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
N-Nitrosodiphenylamine	86-30-6	99,000	350,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Pentachlorobenzene	608-93-5	49,000	490,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Pentachloronitrobenzene	82-68-8	1,900	6,600		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Pentachlorophenol	87-86-5	890	2,700		980 U	1000 U	1300 U	1200 U	1100 U	1200 U	1100 U	1100 U	1100 U	830 U	860 U	900 U	780 U	980 U
Phenacetin	62-44-2	220,000	780,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Phenanthrene	85-01-8	--	--		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Phenol	108-95-2	18,000,000	180,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Pyrene	129-00-0	1,700,000	17,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Pyridine	110-86-1	78,000	1,000,000		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U
Safrole	94-59-7	520	7,800		240 U	250 U	310 U	310 U	290 U	290 U	280 U	280 U	280 U	210 U	210 U	230 U	190 U	240 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.
EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.
VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.
All criteria and results are reported in micrograms per kilogram (µg/Kg)

-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field

Appendix D-3
Analytical Data Summary
2012 Soil Sample Semivolatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-2	SB-12-2	SB-12-2	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-4	SB-12-4
				Sample ID	SB-12-2-35FT-0812	SB-12-2-40FT-0812	SB-DUP-01	SB-12-3-5FT-0812	SB-12-3-10FT-0812	SB-12-3-15FT-0812	SB-12-3-20FT-0812	SB-12-3-25FT-0812	SB-12-3-30FT-0812	SB-12-3-35FT-0812	SB-12-3-40FT-0812	SB-12-3-45FT-0812	SB-12-4-5FT-0812	SB-12-4-10FT-0812
				Top Depth (feet below grade)	30	35	20	3	5	10	15	20	25	30	35	40	0	5
				Bottom Depth (feet below grade)	35	40	25	5	10	15	20	25	30	35	40	45	5	10
				Sample Date & Time	8/7/2012 9:35:00 AM	8/7/2012 9:55:00 AM	8/7/2012 9:00:00 AM	8/7/2012 11:40:00 AM	8/7/2012 11:30:00 AM	8/7/2012 11:35:00 AM	8/7/2012 11:45:00 AM	8/7/2012 12:00:00 PM	8/7/2012 12:30:00 PM	8/7/2012 12:55:00 PM	8/7/2012 1:20:00 PM	8/7/2012 1:45:00 PM	8/7/2012 3:15:00 PM	8/7/2012 3:25:00 PM
				Sample Type	N	N	FD	N	N	N	N	N	N	N	N	N	N	N
				Field Duplicate Parent Sample			SB-12-2-25FT-0812											
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**														
1,2,4,5-Tetrachlorobenzene	95-94-3	18,000	180,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
1,2,4-Trichlorobenzene	120-82-1	22,000	99,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
1,2-Dichlorobenzene	95-50-1	1,900,000	9,800,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
1,3-Dichlorobenzene	541-73-1	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
1,4-Dichlorobenzene	106-46-7	2,400	12,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
1,4-Naphthoquinone	130-15-4	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2,2'-Oxybis(1-Chloropropane)	108-60-1	4,600	22,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2,3,4,6-Tetrachlorophenol	58-90-2	1,800,000	18,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2,4,5-Trichlorophenol	95-95-4	6,100,000	62,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2,4,6-Trichlorophenol	88-06-2	44,000	160,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2,4-Dichlorophenol	120-83-2	180,000	1,800,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2,4-Dimethylphenol	105-67-9	1,200,000	12,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2,4-Dinitrophenol	51-28-5	120,000	1,200,000		810 U	1300 U	1100 U	1200 U	1100 U	1200 U	1200 U	1200 U	1100 U	1100 U	1200 U	1100 U	1300 U	1000 U
2,4-Dinitrotoluene	121-14-2	1,600	5,500		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2,6-Dichlorophenol	87-65-0	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2,6-Dinitrotoluene	606-20-2	61,000	620,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2-Chloronaphthalene	91-58-7	6,300,000	82,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2-Chlorophenol	95-57-8	390,000	5,100,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2-Methylnaphthalene	91-57-6	230,000	2,200,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2-Methylphenol	95-48-7	3,100,000	31,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2-Nitroaniline	88-74-4	610,000	6,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
2-Nitrophenol	88-75-5	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
3 & 4 Methylphenol	15831-10-4	--	--		410 U	650 U	540 U	600 U	570 U	590 U	600 U	600 U	570 U	570 U	600 U	540 U	630 U	520 U
3,3'-Dichlorobenzidine	91-94-1	1,100	3,800		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
3-Methylchloranthrene	56-49-5	5	78		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
3-Nitroaniline	99-09-2	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
4,6-Dinitro-2-Methylphenol	534-52-1	4,900	49,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
4-Bromophenyl-Phenylether	101-55-3	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
4-Chloro-3-Methylphenol	59-50-7	6,100,000	62,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
4-Chloroaniline	106-47-8	2,400	8,600		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
4-Chlorophenyl-Phenylether	7005-72-3	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
4-Nitroaniline	100-01-6	24,000	86,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
4-Nitrophenol	100-02-7	--	--		410 U	650 U	540 U	600 U	570 U	590 U	600 U	600 U	570 U	570 U	600 U	540 U	630 U	520 U
4-Nitroquinoline-n-Oxide	56-57-5	--	--		410 U	650 U	540 U	600 U	570 U	590 U	600 U	600 U	570 U	570 U	600 U	540 U	630 U	520 U
Acenaphthene	83-32-9	3,400,000	33,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Acenaphthylene	208-96-8	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Acetophenone	98-86-2	7,800,000	100,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Aniline	62-53-3	85,000	300,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Anthracene	120-12-7	17,000,000	170,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Aramite	140-57-8	19,000	69,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Azobenzene	103-33-3	5,100	23,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Benzidine	92-87-5	1	8		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Benzo(A)Anthracene	56-55-3	**150**	2,100		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Benzo(A)Pyrene	50-32-8	**15**	***210***	**10**	200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Benzo(B)Fluoranthene	205-99-2	**150**	2,100		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Benzo(G,H,I)Perylene	191-24-2	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Benzo(K)Fluoranthene	207-08-9	1,500	21,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Benzoic Acid	65-85-0	240,000,000	2,500,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Benzyl Alcohol	100-51-6	6,100,000	62,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Bis(2-Chloroethoxy)Methane	111-91-1	180,000	1,800,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Bis(2-Chloroethyl)Ether	111-44-4	210	1,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Bis(2-Ethylhexyl)Phthalate	117-81-7	35,000	120,000	19,200	200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U

Appendix D-3
Analytical Data Summary
2012 Soil Sample Semivolatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-2	SB-12-2	SB-12-2	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-4	SB-12-4
				Sample ID	SB-12-2-35FT-0812	SB-12-2-40FT-0812	SB-DUP-01	SB-12-3-5FT-0812	SB-12-3-10FT-0812	SB-12-3-15FT-0812	SB-12-3-20FT-0812	SB-12-3-25FT-0812	SB-12-3-30FT-0812	SB-12-3-35FT-0812	SB-12-3-40FT-0812	SB-12-3-45FT-0812	SB-12-4-5FT-0812	SB-12-4-10FT-0812
				Top Depth (feet below grade)	30	35	20	3	5	10	15	20	25	30	35	40	0	5
				Bottom Depth (feet below grade)	35	40	25	5	10	15	20	25	30	35	40	45	5	10
				Sample Date & Time	8/7/2012 9:35:00 AM	8/7/2012 9:55:00 AM	8/7/2012 9:00:00 AM	8/7/2012 11:40:00 AM	8/7/2012 11:30:00 AM	8/7/2012 11:35:00 AM	8/7/2012 11:45:00 AM	8/7/2012 12:00:00 PM	8/7/2012 12:30:00 PM	8/7/2012 12:55:00 PM	8/7/2012 1:20:00 PM	8/7/2012 1:45:00 PM	8/7/2012 3:15:00 PM	8/7/2012 3:25:00 PM
				Sample Type	N	N	FD	N	N	N	N	N	N	N	N	N	N	N
				Field Duplicate Parent Sample			SB-12-2-25FT-0812											
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**														
Butylbenzylphthalate	85-68-7	260,000	910,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Carbazole	86-74-8	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Chlorobenzilate	510-15-6	4,400	16,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Chrysene	218-01-9	15,000	210,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Dibenz(A,H)Anthracene	53-70-3	15	210		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Dibenzofuran	132-64-9	78,000	1,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Diethylphthalate	84-66-2	49,000,000	490,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Dimethylphthalate	131-11-3	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Di-N-Butyl Phthalate	84-74-2	6,100,000	62,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Dinitrobutyl Phenol	88-85-7	61,000	620,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Di-N-Octyl Phthalate	117-84-0	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Ethyl methanesulfonate	62-50-0	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Fluoranthene	206-44-0	2,300,000	22,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Fluorene	86-73-7	2,300,000	22,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Hexachlorobenzene	118-74-1	300	1,100		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Hexachlorobutadiene	87-68-3	6,200	22,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Hexachlorocyclopentadiene	77-47-4	370,000	3,700,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Hexachloroethane	67-72-1	12,000	43,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Hexachloropropene	1888-71-7	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Indeno(1,2,3-Cd)Pyrene	193-39-5	150	2,100		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Isodrin	465-73-6	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Isophorone	78-59-1	510,000	1,800,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Isosafrole	120-58-1	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Kepone	143-50-0	49	170		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
m,p-Xylene	179601-23-1	630,000	2,700,000				270 U										310 U	
m-Dinitrobenzene	99-65-0	6,100	62,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Methyl Methanesulfonate	66-27-3	4,900	17,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Naphthalene	91-20-3	3,600	18,000	1,070,000	200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Naphthalene, 1-Methyl-	90-12-0	16,000	53,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Nitrobenzene	98-95-3	4,800	24,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
N-Nitrosodimethylamine	62-75-9	2	34		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
N-Nitroso-Di-N-Propylamine	621-64-7	69	250		200 U	330 U		300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U		260 U
N-Nitrosodiphenylamine	86-30-6	99,000	350,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Pentachlorobenzene	608-93-5	49,000	490,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Pentachloronitrobenzene	82-68-8	1,900	6,600		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Pentachlorophenol	87-86-5	890	2,700		810 U	1300 U	1100 U	1200 U	1100 U	1200 U	1200 U	1200 U	1100 U	1100 U	1200 U	1100 U	1300 U	1000 U
Phenacetin	62-44-2	220,000	780,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Phenanthrene	85-01-8	--	--		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Phenol	108-95-2	18,000,000	180,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Pyrene	129-00-0	1,700,000	17,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Pyridine	110-86-1	78,000	1,000,000		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U
Safrole	94-59-7	520	7,800		200 U	330 U	270 U	300 U	280 U	290 U	300 U	300 U	280 U	290 U	300 U	270 U	310 U	260 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.
EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.
VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.
All criteria and results are reported in micrograms per kilogram (µg/Kg)

-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field

Appendix D-3
Analytical Data Summary
2012 Soil Sample Semivolatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-5	SB-12-5	SB-12-5	SB-12-5	SB-12-6	SB-12-6	SB-12-6
				Sample ID	SB-12-4-15FT-0812	SB-12-4-20FT-0812	SB-12-4-25FT-0812	SB-12-4-30FT-0812	SB-12-4-35FT-0812	SB-12-4-40FT-0812	SB-12-5-1FT-0812	SB-12-5-4FT-0812	SB-12-5-6FT-0812	SB-DUP-02	SB-12-6-1FT-0812	SB-12-6-4FT-0812	SB-12-6-6FT-0812
				Top Depth (feet below grade)	10	15	20	25	30	35	0	2	5	5	0	2	5
				Bottom Depth (feet below grade)	15	20	25	30	35	40	1	4	6	6	1	4	6
				Sample Date & Time	8/7/2012 3:35:00 PM	8/7/2012 3:50:00 PM	8/7/2012 4:05:00 PM	8/7/2012 4:25:00 PM	8/7/2012 4:40:00 PM	8/7/2012 5:10:00 PM	8/8/2012 9:15:00 AM	8/8/2012 9:25:00 AM	8/8/2012 9:50:00 AM	8/8/2012 10:10:00 AM	8/8/2012 10:25:00 AM	8/8/2012 10:35:00 AM	8/8/2012 11:00:00 AM
				Sample Type	N	N	N	N	N	N	N	N	N	FD	N	N	N
				Field Duplicate Parent Sample										SB-12-5-6FT-0812			
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**													
1,2,4,5-Tetrachlorobenzene	95-94-3	18,000	180,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
1,2,4-Trichlorobenzene	120-82-1	22,000	99,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
1,2-Dichlorobenzene	95-50-1	1,900,000	9,800,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
1,3-Dichlorobenzene	541-73-1	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
1,4-Dichlorobenzene	106-46-7	2,400	12,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
1,4-Naphthoquinone	130-15-4	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2,2'-Oxybis(1-Chloropropane)	108-60-1	4,600	22,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2,3,4,6-Tetrachlorophenol	58-90-2	1,800,000	18,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2,4,5-Trichlorophenol	95-95-4	6,100,000	62,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2,4,6-Trichlorophenol	88-06-2	44,000	160,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2,4-Dichlorophenol	120-83-2	180,000	1,800,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2,4-Dimethylphenol	105-67-9	1,200,000	12,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2,4-Dinitrophenol	51-28-5	120,000	1,200,000		1300 U	1200 U	1100 U	1100 U	1200 U	1100 U	1000 U	1100 U	1200 U	1200 U	1000 U	1100 U	1100 U
2,4-Dinitrotoluene	121-14-2	1,600	5,500		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2,6-Dichlorophenol	87-65-0	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2,6-Dinitrotoluene	606-20-2	61,000	620,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2-Chloronaphthalene	91-58-7	6,300,000	82,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2-Chlorophenol	95-57-8	390,000	5,100,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2-Methylnaphthalene	91-57-6	230,000	2,200,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2-Methylphenol	95-48-7	3,100,000	31,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2-Nitroaniline	88-74-4	610,000	6,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
2-Nitrophenol	88-75-5	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
3 & 4 Methylphenol	15831-10-4	--	--		630 U	590 U	530 U	550 U	590 U	560 U	520 U	550 U	600 U	590 U	500 U	540 U	570 U
3,3'-Dichlorobenzidine	91-94-1	1,100	3,800		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
3-Methylchloranthrene	56-49-5	5	78		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
3-Nitroaniline	99-09-2	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
4,6-Dinitro-2-Methylphenol	534-52-1	4,900	49,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
4-Bromophenyl-Phenylether	101-55-3	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
4-Chloro-3-Methylphenol	59-50-7	6,100,000	62,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
4-Chloroaniline	106-47-8	2,400	8,600		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
4-Chlorophenyl-Phenylether	7005-72-3	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
4-Nitroaniline	100-01-6	24,000	86,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
4-Nitrophenol	100-02-7	--	--		630 U	590 U	530 U	550 U	590 U	560 U	520 U	550 U	600 U	590 U	500 U	540 U	570 U
4-Nitroquinoline-n-Oxide	56-57-5	--	--		630 U	590 U	530 U	550 U	590 U	560 U	520 U	550 U	600 U	590 U	500 U	540 U	570 U
Acenaphthene	83-32-9	3,400,000	33,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Acenaphthylene	208-96-8	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Acetophenone	98-86-2	7,800,000	100,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Aniline	62-53-3	85,000	300,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Anthracene	120-12-7	17,000,000	170,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Aramite	140-57-8	19,000	69,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Azobenzene	103-33-3	5,100	23,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Benzidine	92-87-5	1	8		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Benzo(A)Anthracene	56-55-3	**150**	2,100		320 U	290 U	270 U	280 U	300 U	280 U	**370**	280 U	300 U	290 U	250 U	270 U	280 U
Benzo(A)Pyrene	50-32-8	**15**	***210***	**10**	320 U	290 U	270 U	280 U	300 U	280 U	***320***	280 U	300 U	290 U	250 U	270 U	280 U
Benzo(B)Fluoranthene	205-99-2	**150**	2,100		320 U	290 U	270 U	280 U	300 U	280 U	**360**	280 U	300 U	290 U	250 U	270 U	280 U
Benzo(G,H,I)Perylene	191-24-2	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Benzo(K)Fluoranthene	207-08-9	1,500	21,000		320 U	290 U	270 U	280 U	300 U	280 U	300	280 U	300 U	290 U	250 U	270 U	280 U
Benzoic Acid	65-85-0	240,000,000	2,500,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Benzyl Alcohol	100-51-6	6,100,000	62,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Bis(2-Chloroethoxy)Methane	111-91-1	180,000	1,800,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Bis(2-Chloroethyl)Ether	111-44-4	210	1,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Bis(2-Ethylhexyl)Phthalate	117-81-7	35,000	120,000	19,200	320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U

Appendix D-3
Analytical Data Summary
2012 Soil Sample Semivolatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-5	SB-12-5	SB-12-5	SB-12-5	SB-12-6	SB-12-6	SB-12-6
				Sample ID	SB-12-4-15FT-0812	SB-12-4-20FT-0812	SB-12-4-25FT-0812	SB-12-4-30FT-0812	SB-12-4-35FT-0812	SB-12-4-40FT-0812	SB-12-5-1FT-0812	SB-12-5-4FT-0812	SB-12-5-6FT-0812	SB-DUP-02	SB-12-6-1FT-0812	SB-12-6-4FT-0812	SB-12-6-6FT-0812
				Top Depth (feet below grade)	10	15	20	25	30	35	0	2	5	5	0	2	5
				Bottom Depth (feet below grade)	15	20	25	30	35	40	1	4	6	6	1	4	6
				Sample Date & Time	8/7/2012 3:35:00 PM	8/7/2012 3:50:00 PM	8/7/2012 4:05:00 PM	8/7/2012 4:25:00 PM	8/7/2012 4:40:00 PM	8/7/2012 5:10:00 PM	8/8/2012 9:15:00 AM	8/8/2012 9:25:00 AM	8/8/2012 9:50:00 AM	8/8/2012 10:10:00 AM	8/8/2012 10:25:00 AM	8/8/2012 10:35:00 AM	8/8/2012 11:00:00 AM
				Sample Type	N	N	N	N	N	N	N	N	N	FD	N	N	N
				Field Duplicate Parent Sample										SB-12-5-6FT-0812			
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**													
Butylbenzylphthalate	85-68-7	260,000	910,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Carbazole	86-74-8	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Chlorobenzilate	510-15-6	4,400	16,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Chrysene	218-01-9	15,000	210,000		320 U	290 U	270 U	280 U	300 U	280 U	410	280 U	300 U	290 U	250 U	270 U	280 U
Dibenz(A,H)Anthracene	53-70-3	15	210		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Dibenzofuran	132-64-9	78,000	1,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Diethylphthalate	84-66-2	49,000,000	490,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Dimethylphthalate	131-11-3	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Di-N-Butyl Phthalate	84-74-2	6,100,000	62,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Dinitrobutyl Phenol	88-85-7	61,000	620,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Di-N-Octyl Phthalate	117-84-0	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Ethyl methanesulfonate	62-50-0	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Fluoranthene	206-44-0	2,300,000	22,000,000		320 U	290 U	270 U	280 U	300 U	280 U	700	280 U	300 U	290 U	250 U	270 U	280 U
Fluorene	86-73-7	2,300,000	22,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Hexachlorobenzene	118-74-1	300	1,100		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Hexachlorobutadiene	87-68-3	6,200	22,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Hexachlorocyclopentadiene	77-47-4	370,000	3,700,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Hexachloroethane	67-72-1	12,000	43,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Hexachloropropene	1888-71-7	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Indeno(1,2,3-Cd)Pyrene	193-39-5	150	2,100		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Isodrin	465-73-6	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Isophorone	78-59-1	510,000	1,800,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Isosafrole	120-58-1	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Kepone	143-50-0	49	170		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
m,p-Xylene	179601-23-1	630,000	2,700,000					280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
m-Dinitrobenzene	99-65-0	6,100	62,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Methyl Methanesulfonate	66-27-3	4,900	17,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Naphthalene	91-20-3	3,600	18,000	1,070,000	320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Naphthalene, 1-Methyl-	90-12-0	16,000	53,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Nitrobenzene	98-95-3	4,800	24,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
N-Nitrosodimethylamine	62-75-9	2	34		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
N-Nitroso-Di-N-Propylamine	621-64-7	69	250		320 U	290 U	270 U										
N-Nitrosodiphenylamine	86-30-6	99,000	350,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Pentachlorobenzene	608-93-5	49,000	490,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Pentachloronitrobenzene	82-68-8	1,900	6,600		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Pentachlorophenol	87-86-5	890	2,700		1300 U	1200 U	1100 U	1100 U	1200 U	1100 U	1000 U	1100 U	1200 U	1200 U	1000 U	1100 U	1100 U
Phenacetin	62-44-2	220,000	780,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Phenanthrene	85-01-8	--	--		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Phenol	108-95-2	18,000,000	180,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Pyrene	129-00-0	1,700,000	17,000,000		320 U	290 U	270 U	280 U	300 U	280 U	540	280 U	300 U	290 U	250 U	270 U	280 U
Pyridine	110-86-1	78,000	1,000,000		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U
Safrole	94-59-7	520	7,800		320 U	290 U	270 U	280 U	300 U	280 U	260 U	280 U	300 U	290 U	250 U	270 U	280 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.
EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.
VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.
All criteria and results are reported in micrograms per kilogram (µg/Kg)

-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field

Appendix D-3
Analytical Data Summary
2012 Soil Sample Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-1	SB-12-2	SB-12-2	SB-12-2	SB-12-2	SB-12-2	SB-12-2	SB-12-2
				Sample ID	SB-12-1-5FT-0812	SB-12-1-10FT-0812	SB-12-1-15FT-0812	SB-12-1-20FT-0812	SB-12-1-25FT-0812	SB-12-1-30FT-0812	SB-12-1-35FT-0812	SB-12-1-48FT-0812	SB-12-2-5FT-0812	SB-12-2-10FT-0812	SB-12-2-15FT-0812	SB-12-2-20FT-0812	SB-12-2-25FT-0812	SB-DUP-01	SB-12-2-30FT-0812
				Top Depth (feet below grade)	3	5	10	15	20	25	30	35	3	5	10	15	20	20	25
				Bottom Depth (feet below grade)	5	10	15	20	25	30	35	48	5	10	15	20	25	25	30
				Sample Date & Time	8/6/2012 11:40:00 AM	8/6/2012 11:55:00 AM	8/6/2012 12:10:00 PM	8/6/2012 12:20:00 PM	8/6/2012 12:40:00 PM	8/6/2012 1:00:00 PM	8/6/2012 1:20:00 PM	8/6/2012 2:10:00 PM	8/7/2012 7:55:00 AM	8/7/2012 8:10:00 AM	8/7/2012 8:20:00 AM	8/7/2012 8:35:00 AM	8/7/2012 8:55:00 AM	8/7/2012 9:00:00 AM	8/7/2012 9:10:00 AM
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N
				Field Duplicate Parent Sample														SB-12-2-25FT-0812	
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**															
Aluminum	7429-90-5	77000	990000	--	7000	5100	4300	4900	4400	4300	8800	36000	5800	5500	4600	6100	4200	3600	4200
Antimony	7440-36-0	31	410	--	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	6.1 UJ	5.9 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Arsenic	7440-38-2	**0.39**	***1.6***	--	***6.6***	***6.4***	***3.9***	***3.8***	***4.3***	***3***	***4.2***	***9.2***	5.9 U	***3***	***8.8***	***4.3***	***3.8***	***2.6***	***3.5***
Barium	7440-39-3	15000	190000	--	19	14	17	17	11	10	22	270	50	16	25	16	11	7.4	10
Beryllium	7440-41-7	160	2000	--	0.8 U	0.8 U	0.78 U	0.8 U	0.8 U	0.8 U	0.8 U	2.4 U	2.4 U	0.78 U	0.8 U	0.8 U	0.8 U	0.82 U	0.78 U
Cadmium	7440-43-9	70	800	34.5	1 U	1 U	0.98 U	1 U	1 U	1 U	1 U	3.1 U	2.9 U	0.98 U	1 U	1 U	1 U	1 U	0.98 U
Calcium	7440-70-2	--	--	--	1600	1400	1500	2000	7000	7600	11000	12000	1200	1700	840	8900	6300	6100	7600
Chromium	7440-47-3	**0.29**	--	--	**29**	**21**	**14**	**14**	**12**	**12**	**18**	**65**	**23**	**27**	**14**	**15**	**13**	**10**	**12**
Cobalt	7440-48-4	23	300	--	4.2	3.7	5.7	5.8	5.6	5.4	8.4	20	5.9 U	4.2	6.1	6.8	5.7	5.2	5.9
Copper	7440-50-8	3100	41000	--	9.3	7.8	10	13	14	18	20	45	5.9 U	7.6	9.3	14	10	8.7	17
Iron	7439-89-6	55000	720000	--	17000	15000	14000	18000	15000	14000	21000	44000	6900	13000	15000	18000	13000	11000	14000
Lead	7439-92-1	400	800	--	6.7	5.1	3.2	3.3	3.1	2.8	4.8	17	5.9 U	4.4	3.2	3.8	2.8	2.4	3.4
Magnesium	7439-95-4	--	--	--	2500	2200	2700	3000	3600	3600	6600	18000	2200	3000	3000	4800	3500	3200	3600
Manganese	7439-96-5	1800	23000	--	150	150	350	500	290	300	490	880	120	150	1800	410	260	240	290
Nickel	7440-02-0	1500	20000	--	14	13	19	19	17	18	23	78	14	19	20	20	18	17	17
Selenium	7782-49-2	390	5100	--	4 U	4 U	3.9 U	4 U	4 U	4 U	4 U	12 U	12 U	3.9 U	4 U	4 U	4 U	2 U	3.9 U
Silver	7440-22-4	390	5100	--	1 U	1 U	0.98 U	1 U	1 U	1 U	1 U	3.1 U	2.9 U	0.98 U	1 U	1 U	1 U	1 U	0.98 U
Thallium	7440-28-0	0.78	10	--	6 U	4 U	2 U	2 U	2 U	2 U	2 U	6.1 U	5.9 U	3.9 U	2 U	2 U	4 U	2 U	3.9 U
Vanadium	7440-62-2	390	5200	--	20	16	14	13	13	12	18	63	9	15	12	15	12	8.2	13
Zinc	7440-66-6	23000	310000	--	22	19	21	25	23	24	43	100	18	24	23	32	24	20	26

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criteria and results are reported in milligrams per kilogram (mg/Kg)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-3
Analytical Data Summary
2012 Soil Sample Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-2	SB-12-2	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-3	SB-12-4	SB-12-4	SB-12-4	SB-12-4
				Sample ID	SB-12-2-35FT-0812	SB-12-2-40FT-0812	SB-12-3-5FT-0812	SB-12-3-10FT-0812	SB-12-3-15FT-0812	SB-12-3-20FT-0812	SB-12-3-25FT-0812	SB-12-3-30FT-0812	SB-12-3-35FT-0812	SB-12-3-40FT-0812	SB-12-3-45FT-0812	SB-12-4-5FT-0812	SB-12-4-10FT-0812	SB-12-4-15FT-0812	SB-12-4-20FT-0812
				Top Depth (feet below grade)	30	35	3	5	10	15	20	25	30	35	40	0	5	10	15
				Bottom Depth (feet below grade)	35	40	5	10	15	20	25	30	35	40	45	5	10	15	20
				Sample Date & Time	8/7/2012 9:35:00 AM	8/7/2012 9:55:00 AM	8/7/2012 11:40:00 AM	8/7/2012 11:30:00 AM	8/7/2012 11:35:00 AM	8/7/2012 11:45:00 AM	8/7/2012 12:00:00 PM	8/7/2012 12:30:00 PM	8/7/2012 12:55:00 PM	8/7/2012 1:20:00 PM	8/7/2012 1:45:00 PM	8/7/2012 3:15:00 PM	8/7/2012 3:25:00 PM	8/7/2012 3:35:00 PM	8/7/2012 3:50:00 PM
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
				Field Duplicate Parent Sample															
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**															
Aluminum	7429-90-5	77000	990000	--	9300	33000	6000	4700	4000	4300	4500	4500	5500	7000	22000	4200	4400	5500	4300
Antimony	7440-36-0	31	410	--	2 UJ	6 UJ	1.9 UJ	2 UJ	2 UJ	1.9 UJ	2 UJ	2 UJ	1.9 UJ	1.9 UJ	5.9 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Arsenic	7440-38-2	**0.39**	***1.6***	--	***4.1***	***8.7***	***5.1***	***5.2***	***3.2***	***3.3***	***3***	***4.3***	***4.1***	***3.9***	***7.6***	***4.8***	***3.2***	***4.2***	***3.1***
Barium	7440-39-3	15000	190000	--	23	270	18	13	9.9	10	11	12	14	17	120	9.2	10	15	9.2
Beryllium	7440-41-7	160	2000	--	0.8 U	2.4 U	0.77 U	0.78 U	0.78 U	0.77 U	0.78 U	0.78 U	0.77 U	0.77 U	2.4 U	0.8 U	0.78 U	0.78 U	0.8 U
Cadmium	7440-43-9	70	800	34.5	1 U	3 U	0.96 U	0.98 U	0.98 U	0.96 U	0.98 U	0.98 U	0.96 U	0.96 U	2.9 U	1 U	0.98 U	0.98 U	1 U
Calcium	7440-70-2	--	--	--	11000	9200	2100	1900	1700	1400	3100	8600	9000	9800	8600	2000	1700	2100	1800
Chromium	7440-47-3	**0.29**	--	--	**18**	**60**	**16**	**16**	**11**	**10**	**13**	**11**	**12**	**14**	**45**	**14**	**15**	**13**	**12**
Cobalt	7440-48-4	23	300	--	8.4	18	6.1	5.5	4.9	5.7	6.1	5.8	6.3	7.3	16	11	4.7	6.4	5.7
Copper	7440-50-8	3100	41000	--	20	44	14	11	9.8	12	13	14	16	17	33	18	12	15	11
Iron	7439-89-6	55000	720000	--	21000	43000	21000	16000	12000	12000	15000	14000	16000	18000	40000	17000	13000	16000	13000
Lead	7439-92-1	400	800	--	5.3	14	3.7	3.3	2.9	2.4	3.4	3	3	3.5	9.8	3.4	3	3.2	2.9
Magnesium	7439-95-4	--	--	--	6700	17000	2800	3100	2300	2700	3200	3700	4300	5300	14000	2200	2600	3200	3000
Manganese	7439-96-5	1800	23000	--	500	720	260	270	230	250	240	340	340	400	780	340	140	330	270
Nickel	7440-02-0	1500	20000	--	23	53	17	20	15	17	20	17	19	20	45	19	19	19	19
Selenium	7782-49-2	390	5100	--	8 U	12 U	1.9 U	2 U	2 U	1.9 U	2 U	2 U	1.9 U	1.9 U	12 U	2 U	2 U	2 U	2 U
Silver	7440-22-4	390	5100	--	1 U	3 U	0.96 U	0.98 U	0.98 U	0.96 U	0.98 U	0.98 U	0.96 U	0.96 U	2.9 U	1 U	0.98 U	0.98 U	1 U
Thallium	7440-28-0	0.78	10	--	4 U	6 U	1.9 U	2 U	2 U	1.9 U	2 U	2 U	1.9 U	1.9 U	5.9 U	2 U	2 U	2 U	2 U
Vanadium	7440-62-2	390	5200	--	19	69	21	15	11	9.5	13	12	13	15	44	17	14	14	11
Zinc	7440-66-6	23000	310000	--	42	100	25	21	19	23	24	23	28	35	88	18	21	27	24

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criteria and results are reported in milligrams per kilogram (mg/Kg)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-3
Analytical Data Summary
2012 Soil Sample Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-12-4	SB-12-4	SB-12-4	SB-12-4	SB-12-5	SB-12-5	SB-12-5	SB-12-5	SB-12-6	SB-12-6	SB-12-6
				Sample ID	SB-12-4-25FT-0812	SB-12-4-30FT-0812	SB-12-4-35FT-0812	SB-12-4-40FT-0812	SB-12-5-1FT-0812	SB-12-5-4FT-0812	SB-12-5-6FT-0812	SB-DUP-02	SB-12-6-1FT-0812	SB-12-6-4FT-0812	SB-12-6-6FT-0812
				Top Depth (feet below grade)	20	25	30	35	0	2	5	5	0	2	5
				Bottom Depth (feet below grade)	25	30	35	40	1	4	6	6	1	4	6
				Sample Date & Time	8/7/2012 4:05:00 PM	8/7/2012 4:25:00 PM	8/7/2012 4:40:00 PM	8/7/2012 5:10:00 PM	8/8/2012 9:15:00 AM	8/8/2012 9:25:00 AM	8/8/2012 9:50:00 AM	8/8/2012 10:10:00 AM	8/8/2012 10:25:00 AM	8/8/2012 10:35:00 AM	8/8/2012 11:00:00 AM
				Sample Type	N	N	N	N	N	N	N	FD	N	N	N
				Field Duplicate Parent Sample								SB-12-5-6FT-0812			
Chemical Name	**CAS Number**	**EPA-RSL-RES-SO-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**											
Aluminum	7429-90-5	77000	990000	--	4000	4200	6900	8500	14000	6100	6800	5800	5400	6700	6900
Antimony	7440-36-0	31	410	--	2 UJ	2 UJ	2.2 UJ	2.2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ	2 UJ
Arsenic	7440-38-2	**0.39**	***1.6***	--	***3.3***	***3.2***	***4.1***	***4.7***	***3.7***	***2.6***	***3.7***	***3.5***	***4.4***	***4***	***3.7***
Barium	7440-39-3	15000	190000	--	8.5	11	15	20	24	28	19	16	15	14	17
Beryllium	7440-41-7	160	2000	--	0.82 U	0.8 U	0.87 U	0.87 U	0.8 U	0.82 U	0.78 U	0.8 U	0.8 U	0.8 U	0.82 U
Cadmium	7440-43-9	70	800	34.5	1 U	1 U	1.1 U	1.1 U	2.2	4.2	0.98 U	1 U	1 U	1 U	1.1
Calcium	7440-70-2	--	--	--	6000	7200	11000	11000	1300	780	1800	2000	1200	860	1300
Chromium	7440-47-3	**0.29**	--	--	**11**	**11**	**14**	**16**	**46**	**320**	**300**	**260**	**12**	**14**	**17**
Cobalt	7440-48-4	23	300	--	5.4	5.4	7.6	8.2	4.4	3.8	5	4.1	4.8	4.3	6.1
Copper	7440-50-8	3100	41000	--	17	14	19	21	30	140	35	32	12	8.3	14
Iron	7439-89-6	55000	720000	--	12000	12000	17000	19000	12000	9800	15000	14000	12000	14000	14000
Lead	7439-92-1	400	800	--	2.8	2.6	3.8	4.2	16	15	5.5	5.2	4.4	3.4	4.4
Magnesium	7439-95-4	--	--	--	3700	3600	5300	6300	2200	2000	3000	2600	2300	2300	2800
Manganese	7439-96-5	1800	23000	--	260	290	430	470	250	130	230	200	260	110	250
Nickel	7440-02-0	1500	20000	--	17	17	21	23	16	16	17	15	16	16	18
Selenium	7782-49-2	390	5100	--	2 U	2 U	2.2 U	2.2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Silver	7440-22-4	390	5100	--	1 U	1 U	1.1 U	1.1 U	1 U	1 U	0.98 U	1 U	1 U	1 U	1 U
Thallium	7440-28-0	0.78	10	--	2 U	2 U	2.2 U	2.2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Vanadium	7440-62-2	390	5200	--	8.9	9.1	13	15	12	8.9	13	12	10	14	12
Zinc	7440-66-6	23000	310000	--	20	22	34	41	67	41	30	27	23	23	34

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criteria and results are reported in milligrams per kilogram (mg/Kg)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-3
Analytical Data Summary
2013 Soil Sample Chromium Speciation Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-13-01	SB-13-01	SB-13-02	SB-13-02	SB-13-03	SB-13-03	SB-13-02
				Sample ID	SB-13-01-1213A	SB-13-01-1213B	SB-13-02-1213A	SB-13-02-1213B	SB-13-03-1213A	SB-13-03-1213B	FD-01-1213A
				Top Depth (feet below grade)	0	2	0	2	0	2	2
				Bottom Depth (feet below grade)	2	6	2	6	2	6	6
				Sample Date	12/11/13 9:15 AM	12/11/13 9:25 AM	12/11/13 10:30 AM	12/11/13 10:40 AM	12/11/13 11:15 AM	12/11/13 11:25 AM	12/11/13 10:45 AM
				Sample Type	N	N	N	N	N	N	FD
				Field Duplicate Parent Sample							SB-13-02-1213B
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**							
Total Chromium	7440-47-3	--	--	--	**7.5**	**9.6**	**8.3**	**13**	**11**	**12**	**16**
Chromium (VI)	18540-29-9	**0.29**	5.6	--	0.81 UJ	0.80 UJ	0.81 UJ	**0.85 J**	0.80 UJ	0.81 UJ	0.80 UJ
Chromium (III)	16065-83-1	120,000	1,500,000	--	**7.5**	**9.6**	**8.3**	**12**	**11**	**12**	**16**

Notes:

EPA-RSL-RES-SOIL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND-SOIL-MAY2012 - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criteria and results are reported in milligrams per kilogram (mg/Kg)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-3
Analytical Data Summary
2014 Soil Sample Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-14-03	SB-14-04	SB-14-05	SB-14-06	SB-14-08	SB-14-09	SB-14-12	SB-14-15	SB-14-16	SB-14-17	SP-070314	SP-070320
				Sample ID	SB-14-03-0001	SB-14-04-0001	SB-14-05-0001	SB-14-06-0001	SB-14-08-0001	SB-14-09-0001	SB-14-12-0001	SB-14-15-0001	SB-14-16-0001	SB-14-17-0001	SP-070314-063014	SP-070320-063014
				Top Depth (feet below grade)	0	0	0	0	0	0	0	0	0	0		
				Bottom Depth (feet below grade)	1	1	1	1	1	1	1	1	1	1		
				Sample Date	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	7/1/2014	7/1/2014	7/1/2014	7/1/2014	6/30/2014	6/30/2014
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**												
1,1,1,2-Tetrachloroethane	630-20-6	1,900	9,300	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,1,1-Trichloroethane	71-55-6	8,700,000	38,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,1,2,2-Tetrachloroethane	79-34-5	560	2,800	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	43,000,000	180,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,1,2-Trichloroethane	79-00-5	1,100	5,300	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,1-Dichloroethane	75-34-3	3,300	17,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,1-Dichloroethene	75-35-4	240,000	1,100,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,1-Dichloropropene	563-58-6	--	--	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,2,3-Trichlorobenzene	87-61-6	49,000	490,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,2,3-Trichloropropane	96-18-4	5	95	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,2,4-Trichlorobenzene	120-82-1	22,000	99,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,2,4-Trimethylbenzene	95-63-6	62,000	260,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,2-Dibromo-3-chloropropane	96-12-8	5.4	69	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,2-Dibromoethane	106-93-4	34	170	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,2-Dichlorobenzene	95-50-1	1,900,000	9,800,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,2-Dichloroethane	107-06-2	430	2,200	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,2-Dichloropropane	78-87-5	940	4,700	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,3,5-Trimethylbenzene	108-67-8	780,000	10,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,3-Dichlorobenzene	541-73-1	--	--	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,3-Dichloropropane	142-28-9	1,600,000	20,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
1,4-Dichlorobenzene	106-46-7	2,400	12,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
2,2-Dichloropropane	594-20-7	--	--	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
2-Butanone	78-93-3	28,000,000	200,000,000	40,400,000	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
2-Chlorotoluene	95-49-8	1,600,000	20,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
2-Hexanone	591-78-6	210,000	1,400,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
4-Chlorotoluene	106-43-4	1,600,000	20,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
4-Isopropyltoluene	--	--	--	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
4-Methyl-2-pentanone	108-10-1	5,300,000	53,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Acetone	67-64-1	61,000,000	630,000,000	--	67 U	**187**	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Acrylonitrile	107-13-1	240	1,200	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Benzene	71-43-2	1,100	5,400	6,240	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Bromobenzene	108-86-1	300,000	1,800,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Bromochloromethane	74-97-5	160,000	680,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Bromodichloromethane	75-27-4	270	1,400	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Bromoform	75-25-2	62,000	220,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Bromomethane	74-83-9	7,300	32,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Carbon disulfide	75-15-0	820,000	3,700,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Carbon tetrachloride	56-23-5	610	3,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Chlorobenzene	108-90-7	290,000	1,400,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Chloroethane	75-00-3	15,000,000	61,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Chloroform	67-66-3	290	1,500	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Chloromethane	74-87-3	120,000	500,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U

Appendix D-3
Analytical Data Summary
2014 Soil Sample Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-14-03	SB-14-04	SB-14-05	SB-14-06	SB-14-08	SB-14-09	SB-14-12	SB-14-15	SB-14-16	SB-14-17	SP-070314	SP-070320
				Sample ID	SB-14-03-0001	SB-14-04-0001	SB-14-05-0001	SB-14-06-0001	SB-14-08-0001	SB-14-09-0001	SB-14-12-0001	SB-14-15-0001	SB-14-16-0001	SB-14-17-0001	SP-070314-063014	SP-070320-063014
				Top Depth (feet below grade)	0	0	0	0	0	0	0	0	0	0		
				Bottom Depth (feet below grade)	1	1	1	1	1	1	1	1	1	1		
				Sample Date	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	7/1/2014	7/1/2014	7/1/2014	7/1/2014	6/30/2014	6/30/2014
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**												
cis-1,2-Dichloroethene	156-59-2	160,000	2,000,000	673,000	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
cis-1,3-Dichloropropene	10061-01-5	--	--	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Dibromochloromethane	124-48-1	680	3,300	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Dibromomethane	74-95-3	25,000	110,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Dichlorodifluoromethane	75-71-8	94,000	400,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Diethyl ether	60-29-7	16,000,000	200,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Ethylbenzene	100-41-4	5,400	27,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Hexachlorobutadiene	87-68-3	6,200	22,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Isopropylbenzene	98-82-8	2,100,000	11,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
m,p-Xylene	179601-23-1	630,000	2,700,000	--	130 U	200 U	190 U	230 U	170 U	130 U	160 U	150 U	130 U	160 U	140 U	130 U
Methyl tert-butyl ether	1634-04-4	43,000	220,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Methylene chloride	75-09-2	56,000	960,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Naphthalene	91-20-3	3,600	18,000	1,070,000	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
n-Butylbenzene	104-51-8	3,900,000	51,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
n-Propylbenzene	103-65-1	3,400,000	21,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
o-Xylene	95-47-6	690,000	3,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
sec-Butylbenzene	--	--	--	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Styrene	100-42-5	6,300,000	36,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
tert-Butylbenzene	--	--	--	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Tetrachloroethene	127-18-4	22,000	110,000	800	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Tetrahydrofuran	109-99-9	18,000,000	95,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Toluene	108-88-3	5,000,000	45,000,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
trans-1,2-Dichloroethene	156-60-5	150,000	690,000	135,000	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
trans-1,3-Dichloropropene	10061-02-6	--	--	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Trichloroethene	79-01-6	910	6,400	**860**	67 U	**909.4**	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Trichlorofluoromethane	75-69-4	790,000	3,400,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Vinyl acetate	108-05-4	970,000	4,100,000	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U
Vinyl chloride	75-01-4	60	1,700	--	67 U	98 U	97 U	110 U	84 U	67 U	80 U	74 U	66 U	79 U	69 U	66 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.
EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.
VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.
All criterea and results are reported in micrograms per kilogram (µg/Kg)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-3
Analytical Data Summary
2014 Soil Sample Volatile Organic Compound Screening Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-14-03			SB-14-04			SB-14-05	SB-14-06	
				Sample ID	SB-14-03-0001	SB-14-03-0103	SB-14-03-0306	SB-14-04-0001	SB-14-04-0103	SB-14-04-0305	SB-14-05-0001	SB-14-06-0001	SB-14-06-0102
				Top Depth (feet below grade)	0	1	3	0	1	3	0	0	1
				Bottom Depth (feet below grade)	1	3	6	1	3	5	1	1	2
				Sample Date	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014
				Sample Type	N	N	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**									
Tetrachloroethene	127-18-4	22,000	110,000	800	4 U	4 U	4 U	8	4 U	4 U	4 U	4 U	4 U
Trichloroethene	79-01-6	910	6,400	860	10 U	10 U	10 U	700	92	63	19	10 U	10 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criterea and results are reported in micrograms per kilogram (µg/Kg)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-3
Analytical Data Summary
2014 Soil Sample Volatile Organic Compound Screening Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-14-07			SB-14-08			SB-14-09		
				Sample ID	SB-14-07-0001	SB-14-07-0103	SB-14-07-0306	SB-14-08-0001	SB-14-08-0103	SB-14-08-0306	SB-14-09-0001	SB-14-09-0103	SB-14-09-0306
				Top Depth (feet below grade)	0	1	3	0	1	3	0	1	3
				Bottom Depth (feet below grade)	1	3	6	1	3	6	1	3	6
				Sample Date	6/30/2014	6/30/2014	6/30/2014	6/30/2014	7/1/2014	7/1/2014	6/30/2014	6/30/2014	6/30/2014
				Sample Type	N	N	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**									
Tetrachloroethene	127-18-4	22,000	110,000	800	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Trichloroethene	79-01-6	910	6,400	860	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criterea and results are reported in micrograms per kilogram (µg/Kg)

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VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown

N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-3
Analytical Data Summary
2014 Soil Sample Volatile Organic Compound Screening Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-14-10			SB-14-11			SB-14-12		
				Sample ID	SB-14-10-0001	SB-14-10-0103	SB-14-10-0306	SB-14-11-0001	SB-14-11-0103	SB-14-11-0305	SB-14-12-0001	SB-14-12-0103	SB-14-12-0306
				Top Depth (feet below grade)	0	1	3	0	1	3	0	1	3
				Bottom Depth (feet below grade)	1	3	6	1	3	5	1	3	6
				Sample Date	7/1/2014	7/1/2014	6/30/2014	7/1/2014	7/1/2014	7/1/2014	7/1/2014	7/1/2014	7/1/2014
				Sample Type	N	N	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**									
Tetrachloroethene	127-18-4	22,000	110,000	800	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Trichloroethene	79-01-6	910	6,400	860	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criterea and results are reported in micrograms per kilogram (µg/Kg)

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Appendix D-3
Analytical Data Summary
2014 Soil Sample Volatile Organic Compound Screening Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-14-13			SB-14-14			SB-14-15		
				Sample ID	SB-14-13-0001	SB-14-13-0103	SB-14-13-0306	SB-14-14-0001	SB-14-14-0103	SB-14-14-0306	SB-14-15-0001	SB-14-15-0103	SB-14-15-0306
				Top Depth (feet below grade)	0	1	3	0	1	3	0	1	3
				Bottom Depth (feet below grade)	1	3	6	1	3	6	1	3	6
				Sample Date	7/1/2014	7/1/2014	7/1/2014	7/1/2014	7/1/2014	7/1/2014	7/1/2014	7/1/2014	7/1/2014
				Sample Type	N	N	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**									
Tetrachloroethene	127-18-4	22,000	110,000	800	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Trichloroethene	79-01-6	910	6,400	860	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criterea and results are reported in micrograms per kilogram (µg/Kg)

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Appendix D-3
Analytical Data Summary
2014 Soil Sample Volatile Organic Compound Screening Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-14-16			SB-14-17	SP-070314	SP-070320	SP-076517
				Sample ID	SB-14-16-0001	SB-14-16-0103	SB-14-16-0306	SB-14-17-0001	SP-070314-063014	SP-070320-063014	SP-076517-070114
				Top Depth (feet below grade)	0	1	3	0			
				Bottom Depth (feet below grade)	1	3	6	1			
				Sample Date	7/1/2014	7/1/2014	7/1/2014	7/1/2014	6/30/2014	6/30/2014	7/1/2014
				Sample Type	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**							
Tetrachloroethene	127-18-4	22,000	110,000	800	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Trichloroethene	79-01-6	910	6,400	860	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criterea and results are reported in micrograms per kilogram (µg/Kg)

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Appendix D-3
Analytical Data Summary
2014 Soil Sample Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-14-03	SB-14-04	SB-14-07	SB-14-09		SB-14-10	SB-14-11		SB-14-13	SB-14-15
				Sample ID	SB-14-03-0001	SB-14-04-0001	SB-14-07-0306	SB-14-09-0103	SB-14-09-0306	SB-14-10-0306	SB-14-11-0001	SB-14-11-0305	SB-14-13-0001	SB-14-15-0103
				Top Depth (feet below grade)	0	0	3	1	3	3	0	3	0	1
				Bottom Depth (feet below grade)	1	1	6	3	6	6	1	5	1	3
				Sample Date	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	7/1/2014	7/1/2014	7/1/2014	7/1/2014
				Sample Type	N	N	N	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**										
Aluminum	7429-90-5	77,000	990,000	--	5,200	9,400	6,000	7,200	7,500	5,400	11,000	5,400	12,000	8,900
Antimony	7440-36-0	31	410	--	2 UJ	2 UJ	2 UJ	1.9 UJ	2 UJ	2 UJ	2 UJ	1.9 UJ	2 UJ	1.9 UJ
Arsenic	7440-38-2	**0.39**	1.6	--	**5.8**	**5.5**	**3.7**	**6.1**	**7.2**	**4.3**	**6.6**	**4.2**	**6.3**	**5.3**
Barium	7440-39-3	15,000	190,000	--	15	42	16	22	23	14	38	13	43	23
Beryllium	7440-41-7	160	2,000	--	0.78 U	0.8 U	0.8 U	0.77 U	0.8 U	0.78 U	0.8 U	0.77 U	0.78 U	0.77 U
Cadmium	7440-43-9	70	800	34.5	0.98 U	1 U	1 U	0.96 U	1 U	0.98 U	1 U	0.96 U	0.98 U	0.96 U
Calcium	7440-70-2	--	--	--	1,400	3,000	2,200	1,600	1,900	1,600	1,600	1,400	2,200	960
Chromium	7440-47-3	**0.29**	--	--	**14**	**15**	**14**	**16**	**15**	**14**	**16**	**16**	**24**	**16**
Cobalt	7440-48-4	23	300	--	5.3	3.6	5.7	6.2	6.9	5.9	4.2	6.7	6.2	6.1
Copper	7440-50-8	3,100	41,000	--	9.3	9.7	13	11	13	12	7.7	11	15	9.7
Iron	7439-89-6	55,000	720,000	--	15,000	18,000	14,000	18,000	18,000	14,000	17,000	17,000	19,000	17,000
Lead	7439-92-1	400	800	--	6	18	4.9	5.9	5.7	4.6	12	4.1	9.6	5.8
Magnesium	7439-95-4	--	--	--	2,300	1,900	2,900	2,900	3,200	2,500	2,100	2,900	3,100	2,200
Manganese	7439-96-5	1,800	23,000	--	220	250	210	290	330	360	240	290	330	290
Nickel	7440-02-0	1,500	20,000	--	18	11	16	19	22	16	12	19	17	15
Selenium	7782-49-2	390	5,100	--	3.9 U	4 U	4 U	3.8 U	4 U	3.9 U	4 U	3.8 U	3.9 U	3.8 U
Silver	7440-22-4	390	5,100	--	0.98 U	1 U	1 U	0.96 U	1 U	0.98 U	1 U	0.96 U	0.98 U	0.96 U
Thallium	7440-28-0	0.78	10	--	2 U	2 U	4 U	3.8 U	4 U	2 U	2 U	1.9 U	3.9 U	3.8 U
Vanadium	7440-62-2	390	5,200	--	14	22	15	18	17	14	21	17	23	18
Zinc	7440-66-6	23,000	310,000	--	29	63	27	30	32	28	34	25	43	38

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.
EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.
VT-RISK-BASED - Vermont Soil Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.
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Appendix D-3
Analytical Data Summary
2014 Soil Sample Metals Screening Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-14-03			SB-14-04			SB-14-05	SB-14-06		SB-14-07		
				Sample ID	SB-14-03-0001	SB-14-03-0103	SB-14-03-0306	SB-14-04-0001	SB-14-04-0103	SB-14-04-0305	SB-14-05-0001	SB-14-06-0001	SB-14-06-0102	SB-14-07-0001	SB-14-07-0103	SB-14-07-0306
				Top Depth (feet below grade)	0	1	3	0	1	3	0	0	1	0	1	3
				Bottom Depth (feet below grade)	1	3	6	1	3	5	1	1	2	1	3	6
				Sample Date	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014	6/30/2014
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**												
Chromium	7440-47-3	**0.29**	--	--	24 U	26 U	25 U	**120**	27 U	**62**	27 U	27 U	27 U	23 U	**30**	**68**
Lead	7439-92-1	400	800	--	18	13	11	18	13	16	12	24	14	23	10	8 U

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

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Appendix D-3
Analytical Data Summary
2014 Soil Sample Metals Screening Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-14-08			SB-14-09			SB-14-10			SB-14-11		
				Sample ID	SB-14-08-0001	SB-14-08-0103	SB-14-08-0306	SB-14-09-0001	SB-14-09-0103	SB-14-09-0306	SB-14-10-0001	SB-14-10-0103	SB-14-10-0306	SB-14-11-0001	SB-14-11-0103	SB-14-11-0305
				Top Depth (feet below grade)	0	1	3	0	1	3	0	1	3	0	1	3
				Bottom Depth (feet below grade)	1	3	6	1	3	6	1	3	6	1	3	5
				Sample Date	6/30/2014	7/1/2014	7/1/2014	6/30/2014	6/30/2014	6/30/2014	7/1/2014	7/1/2014	6/30/2014	7/1/2014	7/1/2014	7/1/2014
				Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**												
Chromium	7440-47-3	**0.29**	--	--	25 U	26 U	26 U	25 U	**55**	**73**	**37**	26 U	**99**	26 U	**36**	**95**
Lead	7439-92-1	400	800	--	26	8 U	10	16	9	19	25	13	8 U	13	10	9

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

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Appendix D-3
Analytical Data Summary
2014 Soil Sample Metals Screening Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-14-12				SB-14-13			SB-14-14			
				Sample ID	SB-14-12-0001	SB-14-12-0103	SB-14-12-0103 DUP	SB-14-12-0306	SB-14-13-0001	SB-14-13-0103	SB-14-13-0306	SB-14-14-0001	SB-14-14-0001 DUP	SB-14-14-0103	SB-14-14-0306
				Top Depth (feet below grade)	0	1	1	3	0	1	3	0	0	1	3
				Bottom Depth (feet below grade)	1	3	3	6	1	3	6	1	1	3	6
				Sample Date	7/1/2014	7/1/2014		7/1/2014	7/1/2014	7/1/2014	7/1/2014	7/1/2014		7/1/2014	7/1/2014
				Sample Type	N	N	FD	N	N	N	N	N	FD	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**											
Chromium	7440-47-3	**0.29**	--	--	26 U	**50**	27 U	26 U	**45**	27 U	**53**	26 U	25 U	26 U	**28**
Lead	7439-92-1	400	800	--	16	18	15	11	8 U	10	10	23	21	13	15

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

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Appendix D-3
Analytical Data Summary
2014 Soil Sample Metals Screening Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	SB-14-15			SB-14-16				SB-14-17	SP-070314	SP-070320	SP-076517
				Sample ID	SB-14-15-0001	SB-14-15-0103	SB-14-15-0306	SB-14-16-0001	SB-14-16-0001 DUP	SB-14-16-0103	SB-14-16-0306	SB-14-17-0001	SP-070314-063014	SP-070320-063014	SP-076517-070114
				Top Depth (feet below grade)	0	1	3	0	0	1	3	0			
				Bottom Depth (feet below grade)	1	3	6	1	1	3	6	1			
				Sample Date	7/1/2014	7/1/2014	7/1/2014	7/1/2014		7/1/2014	7/1/2014	7/1/2014	6/30/2014	6/30/2014	7/1/2014
				Sample Type	N	N	N	N	FD	N	N	N	N	N	N
Chemical Name	**CAS Number**	**EPA-RSL-RES-SOIL-MAY2012**	**EPA-RSL-IND-SOIL-MAY2012**	**VT-RISK-BASED**											
Chromium	7440-47-3	**0.29**	--	--	27 U	**110**	25 U	25 U	25 U	25 U	24 U	25 U	NA	NA	NA
Lead	7439-92-1	400	800	--	17	10	11	24	23	15	15	9	NA	NA	NA

Notes:

EPA-RSL-RES - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Residential Soil Scenario; May 2012.

EPA-RSL-IND - EPA Regional Screening Level for Chemical Contaminants at Superfund Sites; Industrial Soil Scenario; May 2012.

VT-RISK-BASED - Vermont Soil Screening Values; Investigation and Remediation of Contaminated Properties Procedure, Appendix A.

All criteria and results are reported in milligrams per kilogram (mg/Kg)

-- - No standard value is available

VALUE Indicates exceedance of a screening value.

VALUE Values in italics exceed all screening values

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N - Sample type indicates "normal"

FD - Sample type indicates "field duplicate"

Appendix D-4
Analytical Data Summary
2012 Surface Water Sample Screening Semi-Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

		Sample Location	PW11	PW11	PW17	PW2	PW20	UPSTREAM
		Sample ID	PW11-DUP-SW	PW11-SW	PW17-SW	PW2-SW	PW20-SW	REFERENCE-SW
		Sample Date & Time	9/12/2012 10:25:00 AM	9/12/2012 10:23:00 AM	9/11/2012 2:30:00 PM	9/12/2012 4:00:00 PM	9/11/2012 9:50:00 AM	9/14/2012 10:40:00 AM
		Sample Type	FD	N	N	N	N	N
		Field Duplicate Parent Sample	PW11-SW					
Chemical Name	**CAS Number**	**VT-SW-WQC-HHWO**						
1,1,1,2-Tetrachloroethane	630-20-6	--	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	71-55-6	--	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	79-34-5	0.17	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	79-00-5	0.6	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	75-34-3	--	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	75-35-4	0.057	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloropropene	563-58-6	--	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	87-61-6	--	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichloropropane	96-18-4	--	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	120-82-1	--	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	95-63-6	--	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-Chloropropane	96-12-8	--	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	106-93-4	--	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	95-50-1	--	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethane	107-06-2	0.38	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	78-87-5	--	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	108-67-8	--	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	541-73-1	--	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropane	142-28-9	--	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	106-46-7	--	1 U	1 U	1 U	1 U	1 U	1 U
2,2-Dichloropropane	594-20-7	--	1 U	1 U	1 U	1 U	1 U	1 U
2-Butanone	78-93-3	--	1 U	1 U	1 U	1 U	1 U	1 U
2-Chlorotoluene	95-49-8	--	1 U	1 U	1 U	1 U	1 U	1 U
2-Hexanone	591-78-6	--	1 U	1 U	1 U	1 U	1 U	1 U
2-Methyl-2-phenylpropane	98-06-6	--	1 U	1 U	1 U	1 U	1 U	1 U
2-Phenylbutane	135-98-8	--	1 U	1 U	1 U	1 U	1 U	1 U
4-Chlorotoluene	106-43-4	--	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	108-10-1	--	1 U	1 U	1 U	1 U	1 U	1 U
Acetone	67-64-1	--	1 U	1 U	1 U	1 U	1 U	1 U
Acrylonitrile	107-13-1	0.059	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	71-43-2	1.2	1 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	108-86-1	--	1 U	1 U	1 U	1 U	1 U	1 U
Bromochloromethane	74-97-5	--	1 U	1 U	1 U	1 U	1 U	1 U

Appendix D-4
Analytical Data Summary
2012 Surface Water Sample Screening Semi-Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

		Sample Location	PW11	PW11	PW17	PW2	PW20	UPSTREAM
		Sample ID	PW11-DUP-SW	PW11-SW	PW17-SW	PW2-SW	PW20-SW	REFERENCE-SW
		Sample Date & Time	9/12/2012 10:25:00 AM	9/12/2012 10:23:00 AM	9/11/2012 2:30:00 PM	9/12/2012 4:00:00 PM	9/11/2012 9:50:00 AM	9/14/2012 10:40:00 AM
		Sample Type	FD	N	N	N	N	N
		Field Duplicate Parent Sample	PW11-SW					
Chemical Name	**CAS Number**	**VT-SW-WQC-HHWO**						
Bromodichloromethane	75-27-4	0.27	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	75-25-2	4.3	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane	74-83-9	48	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Disulfide	75-15-0	--	1 U	1 U	1 U	1 U	1 U	1 U
Carbon Tetrachloride	56-23-5	0.25	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	108-90-7	680	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	75-00-3	--	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	67-66-3	--	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	74-87-3	--	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	156-59-2	--	39	38	9.2	1 U	3.8	1 U
cis-1,3-Dichloropropene	10061-01-5	--	1 U	1 U	1 U	1 U	1 U	1 U
Cymene	99-87-6	--	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	124-48-1	--	1 U	1 U	1 U	1 U	1 U	1 U
Dibromomethane	74-95-3	--	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane	75-71-8	--	1 U	1 U	1 U	1 U	1 U	1 U
Diethyl ether	60-29-7	--	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	100-41-4	3100	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	87-68-3	--	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	98-82-8	--	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	179601-23-1	--	2 U	2 U	2 U	2 U	2 U	2 U
Methyl Tert-Butyl Ether	1634-04-4	--	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	75-09-2	4.7	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	91-20-3	--	1 U	1 U	1 U	1 U	1 U	1 U
n-Butylbenzene	104-51-8	--	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	103-65-1	--	1 U	1 U	1 U	1 U	1 U	1 U
o-Xylene	95-47-6	--	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	100-42-5	--	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	127-18-4	0.8	1 U	1 U	1 U	1 U	1 U	1 U
Tetrahydrofuran	109-99-9	--	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	108-88-3	6800	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	156-60-5	--	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,3-Dichloropropene	10061-02-6	--	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	79-01-6	**2.7**	**15**	**15**	**6**	1 U	2.6	1 U
Trichlorofluoromethane	75-69-4	--	1 U	1 U	1 U	1 U	1 U	1 U

Appendix D-4
Analytical Data Summary
2012 Surface Water Sample Screening Semi-Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

		Sample Location	PW11	PW11	PW17	PW2	PW20	UPSTREAM
		Sample ID	PW11-DUP-SW	PW11-SW	PW17-SW	PW2-SW	PW20-SW	REFERENCE-SW
		Sample Date & Time	9/12/2012 10:25:00 AM	9/12/2012 10:23:00 AM	9/11/2012 2:30:00 PM	9/12/2012 4:00:00 PM	9/11/2012 9:50:00 AM	9/14/2012 10:40:00 AM
		Sample Type	FD	N	N	N	N	N
		Field Duplicate Parent Sample	PW11-SW					
Chemical Name	**CAS Number**	**VT-SW-WQC-HHWO**						
Vinyl Acetate	108-05-4	--	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	75-01-4	**2**	**3.4**	**3.2**	1 U	1 U	1 U	1 U

Notes:

VT-SW-WQC-HHWO - Vermont Surface Water Quality Criteria - Human Health (Water + Organisms)
All criteria and results are reported in micrograms per liter (µg/L)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values

U - data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-4
Analytical Data Summary
2012 Surface Water Sample Screening Anion Results
Commerce Street Plume Superfund Site
Williston, Vermont

	Sample Location	PW-11	PW-11	PW-17	PW-2	PW-20	UPSTREAM
	Sample ID	PW11-DUP-SW	PW11-SW	PW17-SW	PW2-SW	PW20-SW	REFERENCE-SW
	Sample Date & Time	9/12/2012 10:25:00 AM	9/12/2012 10:23:00 AM	9/11/2012 2:30:00 PM	9/12/2012 4:00:00 PM	9/11/2012 9:50:00 AM	9/14/2012 10:40:00 AM
	Sample Type	FD	N	N	N	N	N
	Field Duplicate Parent Sample	PW11-SW					
Chemical Name	**CAS Number**						
Bromide	24959-67-9	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Chloride	16887-00-6	210	210	620	190	450	190
Fluoride	16984-48-8	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Nitrate	14797-55-8	1.3 J	1.7 J	0.42 J	1.6 J	0.36 J	1.3
Nitrate (as Nitrogen)	NO3-N	0.29	0.38	0.09	0.36	0.08	0.29
Nitrite	14797-65-0	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U
Nitrite (as Nitrogen)	NO2-N	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Sulfate	14808-79-8	24	24	26	26	24	27

Notes:

VT-SW-WQC-HHWO - Vermont Surface Water Quality Criteria - Human Health (Water + Organisms)
All criteria and results are reported in milligrams per liter (mg/L)
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VALUE Values in italics exceed all screening
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FD - Sample type indicates "field duplicate"

Appendix D-5
Analytical Data Summary
2012 Sediment Sample Screening Total Metals Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	PW11	PW11	PW17	PW2	PW20	UPSTREAM
				Sample ID	PW11-DUP-SED	PW11-SED	PW17-SED	PW2-SED	PW20-SED	REFERENCE-SED
				Sample Date & Time	9/12/2012 10:43:00 AM	9/12/2012 10:43:00 AM	9/11/2012 2:36:00 PM	9/12/2012 4:06:00 PM	9/11/2012 10:25:00 AM	9/13/2012 10:44:00 AM
				Sample Type	FD	N	N	N	N	N
				Field Duplicate Parent Sample	PW11-SED					
Chemical Name	**CAS Number**	**EPA-SD-FWSB-2004**	**VT SQC-TECS-2012**	**VT SQC-PECS-2012**						
Aluminum	7429-90-5	--	--	--	3300	3700	5800	3900	4100	7400
Antimony	7440-36-0	2	--	--	2 U	2 U	2.1 UJ	2.2 U	2 U	2.4 U
Arsenic	7440-38-2	9.8	9.8	33	2 U	2.1	4.5	2.2 U	2 U	3.7
Barium	7440-39-3	--	--	--	13	12	39	21	17	50
Beryllium	7440-41-7	--	--	--	0.8 U	0.8 U	0.85 U	0.87 U	0.82 U	0.98 U
Cadmium	7440-43-9	0.99	0.99	5	1 U	1 U	1.1 U	1.1 U	1 U	1.2 U
Calcium	7440-70-2	--	--	--	1400	1100	1700	1100	1200	2300
Chromium	7440-47-3	43	43	110	8.6	9.7	11	7.4	8.9	15
Cobalt	7440-48-4	50	--	--	3	2.6	4.1	2.4	2.7	5.6
Copper	7440-50-8	**32**	***32***	150	5.9	6	13	***44***	5.6	13
Iron	7439-89-6	20000	--	--	7800	8800	12000	6600	7300	14000
Lead	7439-92-1	36	36	130	3.5	4 U	9.4	4.6	4.1 U	12
Magnesium	7439-95-4	--	--	--	2200	2400	2200	1500	1900	2800
Manganese	7439-96-5	**460**	--	--	93	92	170	80	99	**670**
Mercury	7439-97-6	0.18	0.18	1.1	0.016 UJ	0.016 U	0.03	0.017 U	0.016 U	0.034
Nickel	7440-02-0	23	23	49	12	12	12	7.8	9.7	15 J
Selenium	7782-49-2	2	--	--	2 U	2 U	2.1 U	2.2 U	2 U	2.4 U
Silver	7440-22-4	1	--	--	1 U	1 U	1.1 U	1.1 U	1 U	1.2 U
Thallium	7440-28-0	--	--	--	4 U	4 U	4.2 U	4.4 U	4.1 U	4.9 U
Vanadium	7440-62-2	--	--	--	6.5	7.3	9.6	7.9	6.4	15
Zinc	7440-66-6	**120**	***120***	460	33	34	48	54	28	***240***

Notes:

EPA-SD-FWSB-2004 - EPA Region 3 Freshwater Sediment Benchmarks, 2004
VT SQC-TECS-2012 - Vermont Sediment Quality Guidelines for the Protection of Aquatic Biota in Freshwater Ecosystems, Threshold effects concentrations; April 2012
VT SQC-PECS-2012 - Vermont Sediment Quality Guidelines for the Protection of Aquatic Biota in Freshwater Ecosystems, Probable effects concentrations; April 2012

All criteria and results are reported in milligrams per kilogram (µg/Kg)

-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - Data qualifier indicates that the result is below the detection limit shown
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

Appendix D-5
Analytical Data Summary
2012 Sediment Sample Screening Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	PW11	PW11	PW17	PW2	PW20	UPSTREAM
				Sample ID	PW11-DUP-SED	PW11-SED	PW17-SED	PW2-SED	PW20-SED	REFERENCE-SED
				Sample Date & Time	9/12/2012 10:43:00 AM	9/12/2012 10:43:00 AM	9/11/2012 2:36:00 PM	9/12/2012 4:06:00 PM	9/11/2012 10:25:00 AM	9/13/2012 10:44:00 AM
				Sample Type	FD	N	N	N	N	N
				Field Duplicate Parent Sample	PW11-SED					
Chemical Name	**CAS Number**	**EPA-SD-FWSB-2004**	**VT SQC-TECS-2012**	**VT SQC-PECS-2012**						
1,1,1,2-Tetrachloroethane	630-20-6	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,1,1-Trichloroethane	71-55-6	30	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,1,2,2-Tetrachloroethane	79-34-5	1400	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,1,2-Trichloroethane	79-00-5	1200	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,1-Dichloroethane	75-34-3	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,1-Dichloroethene	75-35-4	31	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,1-Dichloropropene	563-58-6	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,2,3-Trichlorobenzene	87-61-6	860	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,2,3-Trichloropropane	96-18-4	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,2,4-Trichlorobenzene	120-82-1	2100	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,2,4-Trimethylbenzene	95-63-6	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,2-Dibromo-3-Chloropropane	96-12-8	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,2-Dibromoethane	106-93-4	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,2-Dichlorobenzene	95-50-1	17	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,2-Dichloroethane	107-06-2	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,2-Dichloropropane	78-87-5	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,3,5-Trimethylbenzene	108-67-8	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,3-Dichlorobenzene	541-73-1	4400	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,3-Dichloropropane	142-28-9	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
1,4-Dichlorobenzene	106-46-7	600	--	--	54 U	63 U	80 U	54 U	52 U	110 U
2,2-Dichloropropane	594-20-7	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
2-Butanone	78-93-3	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
2-Chlorotoluene	95-49-8	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
2-Hexanone	591-78-6	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
2-Methyl-2-phenylpropane	98-06-6	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
2-Phenylbutane	135-98-8	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
4-Chlorotoluene	106-43-4	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
4-Methyl-2-Pentanone	108-10-1	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Acetone	67-64-1	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Acrylonitrile	107-13-1	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Benzene	71-43-2	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Bromobenzene	108-86-1	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U

Appendix D-5
Analytical Data Summary
2012 Sediment Sample Screening Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	PW11	PW11	PW17	PW2	PW20	UPSTREAM
				Sample ID	PW11-DUP-SED	PW11-SED	PW17-SED	PW2-SED	PW20-SED	REFERENCE-SED
				Sample Date & Time	9/12/2012 10:43:00 AM	9/12/2012 10:43:00 AM	9/11/2012 2:36:00 PM	9/12/2012 4:06:00 PM	9/11/2012 10:25:00 AM	9/13/2012 10:44:00 AM
				Sample Type	FD	N	N	N	N	N
				Field Duplicate Parent Sample	PW11-SED					
Chemical Name	**CAS Number**	**EPA-SD-FWSB-2004**	**VT SQC-TECS-2012**	**VT SQC-PECS-2012**						
Bromochloromethane	74-97-5	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Bromodichloromethane	75-27-4	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Bromoform	75-25-2	650	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Bromomethane	74-83-9	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Carbon Disulfide	75-15-0	0.85	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Carbon Tetrachloride	56-23-5	64	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Chlorobenzene	108-90-7	8.4	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Chloroethane	75-00-3	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Chloroform	67-66-3	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Chloromethane	74-87-3	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
cis-1,2-Dichloroethene	156-59-2	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
cis-1,3-Dichloropropene	10061-01-5	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Cymene	99-87-6	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Dibromochloromethane	124-48-1	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Dibromomethane	74-95-3	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Dichlorodifluoromethane	75-71-8	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Diethyl ether	60-29-7	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Ethylbenzene	100-41-4	1100	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Hexachlorobutadiene	87-68-3	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Isopropylbenzene	98-82-8	86	--	--	54 U	63 U	80 U	54 U	52 U	110 U
m,p-Xylene	179601-23-1	25	--	--	110 U	130 U	160 U	110 U	100 U	220 U
Methyl Tert-Butyl Ether	1634-04-4	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Methylene Chloride	75-09-2	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Naphthalene	91-20-3	180	180	560	54 U	63 U	80 U	54 U	52 U	110 U
n-Butylbenzene	104-51-8	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
n-Propylbenzene	103-65-1	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
o-Xylene	95-47-6	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Styrene	100-42-5	560	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Tetrachloroethene	127-18-4	470	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Tetrahydrofuran	109-99-9	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Toluene	108-88-3	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
trans-1,2-Dichloroethene	156-60-5	1100	--	--	54 U	63 U	80 U	54 U	52 U	110 U
trans-1,3-Dichloropropene	10061-02-6	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U

Appendix D-5
Analytical Data Summary
2012 Sediment Sample Screening Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	PW11	PW11	PW17	PW2	PW20	UPSTREAM
				Sample ID	PW11-DUP-SED	PW11-SED	PW17-SED	PW2-SED	PW20-SED	REFERENCE-SED
				Sample Date & Time	9/12/2012 10:43:00 AM	9/12/2012 10:43:00 AM	9/11/2012 2:36:00 PM	9/12/2012 4:06:00 PM	9/11/2012 10:25:00 AM	9/13/2012 10:44:00 AM
				Sample Type	FD	N	N	N	N	N
				Field Duplicate Parent Sample	PW11-SED					
Chemical Name	**CAS Number**	**EPA-SD-FWSB-2004**	**VT SQC-TECS-2012**	**VT SQC-PECS-2012**						
Trichloroethene	79-01-6	97	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Trichlorofluoromethane	75-69-4	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Vinyl Acetate	108-05-4	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U
Vinyl Chloride	75-01-4	--	--	--	54 U	63 U	80 U	54 U	52 U	110 U

Notes:

EPA-SD-FWSB-2004 - EPA Region 3 Freshwater Sediment Benchmarks,
VT SQC-TECS-2012 - Vermont Sediment Quality Guidelines for the Protection of Aquatic Biota in Freshwater Ecosystems, Threshold effects concentrations; April 2012
VT SQC-PECS-2012 - Vermont Sediment Quality Guidelines for the Protection of Aquatic Biota in Freshwater Ecosystems, Probable effects concentrations; April 2012
All criteria and results are reported in micrograms per kilogram (µg/Kg)
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Appendix D-5
Analytical Data Summary
2012 Sediment Sample Screening Semi-Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	PW-11	PW-11	PW-17	PW-2	PW-20	UPSTREAM
				Sample ID	PW11-DUP-SED	PW11-SED	PW17-SED	PW2-SED	PW20-SED	REFERENCE-SED
				Sample Date & Time	9/12/2012 10:43:00 AM	9/12/2012 10:43:00 AM	9/11/2012 2:36:00 PM	9/12/2012 4:06:00 PM	9/11/2012 10:25:00 AM	9/13/2012 10:44:00 AM
				Sample Type	FD	N	N	N	N	N
				Field Duplicate Parent Sample	PW11-SED					
Chemical Name	**CAS Number**	**EPA-SD-FWSB-2004**	**VT SQC-TECS-2012**	**VT SQC-PECS-2012**						
1,2,4,5-Tetrachlorobenzene	95-94-3	1100	--	--	200 U	210 U	260 U	220 U	200 U	260 U
1,2,4-Trichlorobenzene	120-82-1	2100	--	--	200 U	210 U	260 U	220 U	200 U	260 U
1,2-Dichlorobenzene	95-50-1	17	--	--	200 U	210 U	260 U	220 U	200 U	260 U
1,3-Dichlorobenzene	541-73-1	4400	--	--	200 U	210 U	260 U	220 U	200 U	260 U
1,4-Dichlorobenzene	106-46-7	600	--	--	200 U	210 U	260 U	220 U	200 U	260 U
1,4-Naphthoquinone	130-15-4	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2,2'-Oxybis(1-Chloropropane)	108-60-1	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2,3,4,6-Tetrachlorophenol	58-90-2	280	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2,4,5-Trichlorophenol	95-95-4	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2,4,6-Trichlorophenol	88-06-2	210	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2,4-Dichlorophenol	120-83-2	120	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2,4-Dimethylphenol	105-67-9	29	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2,4-Dinitrophenol	51-28-5	--	--	--	810 U	830 U	1000 U	900 U	820 U	1100 U
2,4-Dinitrotoluene	121-14-2	42	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2,6-Dichlorophenol	87-65-0	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2,6-Dinitrotoluene	606-20-2	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2-Chloronaphthalene	91-58-7	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2-Chlorophenol	95-57-8	31	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2-Methylnaphthalene	91-57-6	20	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2-Methylphenol	95-48-7	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2-Nitroaniline	88-74-4	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
2-Nitrophenol	88-75-5	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
3 & 4 Methylphenol	15831-10-4	--	--	--	410 U	420 U	520 U	450 U	410 U	530 U
3,3'-Dichlorobenzidine	91-94-1	130	--	--	200 U	210 U	260 U	220 U	200 U	260 U
3-Methylchloranthrene	56-49-5	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
3-Nitroaniline	99-09-2	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
4,6-Dinitro-2-Methylphenol	534-52-1	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
4-Bromophenyl-Phenylether	101-55-3	1200	--	--	200 U	210 U	260 U	220 U	200 U	260 U
4-Chloro-3-Methylphenol	59-50-7	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
4-Chloroaniline	106-47-8	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
4-Chlorophenyl-Phenylether	7005-72-3	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
4-Nitroaniline	100-01-6	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
4-Nitrophenol	100-02-7	--	--	--	410 U	420 U	520 U	450 U	460	530 U
4-Nitroquinoline-n-Oxide	56-57-5	--	--	--	410 U	420 U	520 U	450 U	410 U	530 U
Acenaphthene	83-32-9	6.7	--	--	200 U	210 U	260 U	220 U	200 U	260 U

Appendix D-5
Analytical Data Summary
2012 Sediment Sample Screening Semi-Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	PW-11	PW-11	PW-17	PW-2	PW-20	UPSTREAM
				Sample ID	PW11-DUP-SED	PW11-SED	PW17-SED	PW2-SED	PW20-SED	REFERENCE-SED
				Sample Date & Time	9/12/2012 10:43:00 AM	9/12/2012 10:43:00 AM	9/11/2012 2:36:00 PM	9/12/2012 4:06:00 PM	9/11/2012 10:25:00 AM	9/13/2012 10:44:00 AM
				Sample Type	FD	N	N	N	N	N
				Field Duplicate Parent Sample	PW11-SED					
Chemical Name	**CAS Number**	**EPA-SD-FWSB-2004**	**VT SQC-TECS-2012**	**VT SQC-PECS-2012**						
Acenaphthylene	208-96-8	5.9	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Acetophenone	98-86-2	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Aniline	62-53-3	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Anthracene	120-12-7	57	57	850	200 U	210 U	260 U	220 U	200 U	260 U
Aramite	140-57-8	--	--	--	200 U	210 U	260 U	220 U	210	260 U
Azobenzene	103-33-3	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Benzidine	92-87-5	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Benzo(A)Anthracene	56-55-3	**110**	***110***	1100	200 U	210 U	260 U	220 U	***270***	260 U
Benzo(A)Pyrene	50-32-8	**150**	***150***	1500	200 U	210 U	260 U	220 U	***240***	260 U
Benzo(B)Fluoranthene	205-99-2	--	--	--	200 U	210 U	260 U	220 U	570	260 U
Benzo(G,H,I)Perylene	191-24-2	**170**	--	--	200 U	210 U	260 U	220 U	**610**	260 U
Benzo(K)Fluoranthene	207-08-9	**240**	--	--	200 U	210 U	260 U	220 U	**540**	260 U
Benzoic Acid	65-85-0	650	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Benzyl Alcohol	100-51-6	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Bis(2-Chloroethoxy)Methane	111-91-1	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Bis(2-Chloroethyl)Ether	111-44-4	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Bis(2-Ethylhexyl)Phthalate	117-81-7	**180**	--	--	200 U	210 U	260 U	220 U	**250**	260 U
Butylbenzylphthalate	85-68-7	11000	--	--	200 U	210 U	260 U	220 U	300	260 U
Carbazole	86-74-8	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Chlorobenzilate	510-15-6	1500	--	--	200 U	210 U	260 U	220 U	240	260 U
Chrysene	218-01-9	**170**	***170***	1300	200 U	210 U	260 U	220 U	***680***	260 U
Dibenz(A,H)Anthracene	53-70-3	**33**	***33***	--	200 U	210 U	260 U	220 U	***510***	260 U
Dibenzofuran	132-64-9	420	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Diethylphthalate	84-66-2	600	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Dimethylphthalate	131-11-3	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Di-N-Butyl Phthalate	84-74-2	6500	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Dinitrobutyl Phenol	88-85-7	0.61	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Di-N-Octyl Phthalate	117-84-0	--	--	--	200 U	210 U	260 U	220 U	260	260 U
Ethyl methanesulfonate	62-50-0	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Fluoranthene	206-44-0	***420***	***420***	2200	200 U	210 U	260 U	220 U	200 U	***480***
Fluorene	86-73-7	77	77	540	200 U	210 U	260 U	220 U	200 U	260 U
Hexachlorobenzene	118-74-1	20	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Hexachlorobutadiene	87-68-3	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Hexachlorocyclopentadiene	77-47-4	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Hexachloroethane	67-72-1	1000	--	--	200 U	210 U	260 U	220 U	200 U	260 U

Appendix D-5
Analytical Data Summary
2012 Sediment Sample Screening Semi-Volatile Organic Compound Results
Commerce Street Plume Superfund Site
Williston, Vermont

				Sample Location	PW-11	PW-11	PW-17	PW-2	PW-20	UPSTREAM
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				Sample Type	FD	N	N	N	N	N
				Field Duplicate Parent Sample	PW11-SED					
Chemical Name	**CAS Number**	**EPA-SD-FWSB-2004**	**VT SQC-TECS-2012**	**VT SQC-PECS-2012**						
Hexachloropropene	1888-71-7	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Indeno(1,2,3-Cd)Pyrene	193-39-5	**17**	--	--	200 U	210 U	260 U	220 U	**500**	260 U
Isodrin	465-73-6	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Isophorone	78-59-1	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Isosafrole	120-58-1	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Kepone	143-50-0	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
m-Dinitrobenzene	99-65-0	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Methyl Methanesulfonate	66-27-3	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Naphthalene	91-20-3	180	180	560	200 U	210 U	260 U	220 U	200 U	260 U
Naphthalene, 1-Methyl-	90-12-0	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Nitrobenzene	98-95-3	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
N-Nitrosodimethylamine	62-75-9	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
N-Nitroso-Di-N-Propylamine	621-64-7	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
N-Nitrosodiphenylamine	86-30-6	2700	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Pentachlorobenzene	608-93-5	8900	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Pentachloronitrobenzene	82-68-8	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Pentachlorophenol	87-86-5	**500**	--	--	810 U	830 U	1000 U	900 U	**860 J**	1100 U
Phenacetin	62-44-2	--	--	--	200 U	210 U	260 U	220 U	320	260 U
Phenanthrene	85-01-8	200	200	1200	200 U	210 U	260 U	220 U	200 U	260 U
Phenol	108-95-2	420	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Pyrene	129-00-0	**200**	***200***	1500	200 U	210 U	260 U	220 U	200 U	***380***
Pyridine	110-86-1	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U
Safrole	94-59-7	--	--	--	200 U	210 U	260 U	220 U	200 U	260 U

Notes:

EPA-SD-FWSB-2004 - EPA Region 3 Freshwater Sediment Benchmarks, 2004
VT SQC-TECS-2012 - Vermont Sediment Quality Guidelines for the Protection of Aquatic Biota in Freshwater Ecosystems, Threshold effects concentrations; April 2012
VT SQC-PECS-2012 - Vermont Sediment Quality Guidelines for the Protection of Aquatic Biota in Freshwater Ecosystems, Probable effects concentrations; April 2012
All criteria and results are reported in micrograms per kilogram (µg/Kg)
-- - No standard value is available
VALUE Indicates exceedance of a screening value.
VALUE Values in italics exceed all screening values
U - Data qualifier indicates that the result is below the
N - Sample type indicates "normal"
FD - Sample type indicates "field duplicate"

APPENDIX E

STRATIGRAPHIC INVESTIGATION REPORT
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT

Prepared for:

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Prepared by:

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File 2010036
August 2010

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FIGURES

Figure 1 GPR 100-MHz bi-static antenna setup for survey along Commerce Road.
Figure 2 GPR MLF bi-static antenna traversing along Kirby Lane toward South Brownell Road.
Figure 3 Seismic reflection and refraction setup along Commerce Street.

PLATES

Plate 1 Location Map with GPR and Seismic Lines
Plate 2 Depth Map of Clay Layer Surface
Plate 3 Elevation Map of Clay Layer Surface
Plate 4 Depth Map of Till Layer Surface
Plate 5 Elevation Map of Till Layer Surface
Plate 6 Depth Map of Bedrock Surface
Plate 7 Elevation Map of Bedrock Surface
Plate 8 Isopach Map of Clay Layer
Plate 9 Isopach Map of Till Layer

APPENDICES

APPENDIX A. The Geophysical Techniques

APPENDIX B. GPR Cross Sections (Plates B1-B34)

APPENDIX C. Seismic Reflection Profiles (Plates C1-C8)

EXECUTIVE SUMMARY

In June of 2010, Hager GeoScience, Inc. (HGI) performed a geophysical survey for Nobis Engineering, Inc. (Nobis) at the Commerce Street Superfund Site in Williston, Vermont. HGI's objective was to provide an elevation and depth contour map to confirm the areal extent of a subsurface clay unit and depth to bedrock to help select locations for groundwater vertical profiling and soil boring/monitoring well installation.

HGI performed the field investigations primarily with low frequency ground penetrating radar (GPR), using high-powered 100- and 40-MHz bi-static antennas. Data were collected along four seismic reflection and refraction lines to provide bedrock depth constraints for the GPR interpretation. A GPS system was used to provide survey and elevation control.

HGI performed the data collection over 8 days between June 8th and 17th, 2010. Twenty-seven GPR transects totaling 9093 feet and four seismic profiles totaling 3335 feet were made in the project area.

Three stratigraphic horizons were mapped within the project area. In descending order, they include clay, till, and bedrock horizons. Depth and elevation maps were prepared for each horizon, as well as isopach maps of the clay and till layers.

The clay layer model is recognized as undulating, with localized lows along Commerce Street and larger depressions in the east and west portions of the survey area. The range of relief of the clay horizon is approximately 28 feet, and its thickness varies from 7 to 29 feet.

The till model is characterized by a circular high at the north end of Commerce Street, and elevation lows at the western and southern portions of the project area. The range of elevation relief of the till horizon is approximately 30 feet, and its thickness ranges from 33 to 59 feet.

The bedrock topographic relief is approximately 36 feet across the project area, occurring as an undulating surface with the highest elevation at the northern end and the lowest elevation at the southern end of the project area.

1.0 INTRODUCTION

In June of 2010, Hager GeoScience, Inc. (HGI) performed a geophysical survey for Nobis Engineering, Inc. (Nobis) at the Commerce Street Superfund Site in Williston, Vermont. HGI's objective was to provide an elevation and depth contour map to confirm the areal extent of a subsurface clay unit and depth to bedrock to help select locations for groundwater vertical profiling and soil boring/monitoring well installation.

Site preparation and overview were performed on June 7th, 2010. Initial limits for the geophysical survey were loosely established from information provided by Nobis and physical constraints of the site. The area of investigation - defined by Route 2 to the north, wetlands at the south end of Commerce Street, South Brownell Street to the west, and an unnamed brook to the east - was expanded to provide reasonable spatial limits for developing a stratigraphic model. The spatial distribution of 394 data points provided by the GPR method made the expansion possible.

Nobis provided HGI with the logs from two bedrock borings located within the area of the geophysical investigations. HGI used these logs to calibrate the clay/bedrock model.

2.0 DATA ACQUISITION

The geophysical study at the Commerce Street Superfund Site was designed to acquire a distribution of data suitable for mapping overburden and bedrock stratigraphy. The current data set provides much more spatial resolution than that from a previous survey completed at the site by Geophysics GPR International, Inc. in 1999.

HGI performed the data collection during the period from June 8th through 17th, 2010, using low frequency GPR and seismic reflection/refraction. The low-frequency GPR surveys were performed using two very high-powered bi-static antenna systems: a 100-MHz antenna with 3.3 feet of separation and a 40-MHz antenna with 15 feet of separation. Data were collected along four seismic lines to help constrain the GPR interpretation, particularly where well data were not available (Plate 1). The seismic surveys included reflection and limited refraction surveys using a 48-channel seismograph system. HGI provided a field crew of 3 to 4 people during the course of the field program. Figures 1 through 3 illustrate the GPR and seismic field setups.

The survey area was approximately 1500 x 2800 feet in size. GPR lines were added outside the site to expand the data on both the east and west sides of the area of concern. Twenty-seven GPR transects totaling 9093 feet and four seismic profiles totaling 3335 feet were made in the project area.

HGI used a Sokkia 2700 ISX GPS system to locate GPR lines, wells, test pits, seismic lines, and surface features. The GPS system was also used to obtain sufficient elevation points to reconstruct the surface topography and calculate the elevation of GPR-measured depth points.

Appendix A describes the geophysical techniques and their limitations.

2.1 Low Frequency GPR Survey

The primary use of the radar data was to enhance the spatial coverage of depth points for modeling stratigraphy and bedrock. The GPR method is amenable to the interrogation and mapping of discontinuous subsurface interfaces, such as changes in stratigraphy. GPR data were collected as two-way travel time, in which the measurements are made of the time for the input radar wave pulse to travel to a subsurface discontinuity and reflect back to the antenna at the ground surface. Depths to discontinuous interfaces were recovered from the recorded travel-time data using radar propagation velocities estimated through calibration with borehole logs and from material-specific velocity tables.

Twenty-seven (27) low frequency GPR traverses were completed throughout the site and perimeter where accessible (Plate 1). The low frequency GPR survey was conducted using GSSI SIR-2 and -2000 digital acquisition systems with very high powered 100-MHz and multiple low frequency (MLF) antenna systems. The MLF antenna system is capable of frequency configurations ranging from 15- to 80-MHz. A 40-MHz bi-static configuration was used to provide the depth penetration and vertical resolution needed for the survey.

The 40-MHz data were collected in discrete point mode and the 100-MHz data in continuous survey wheel mode. In point mode, the GPR pulses were manually triggered at 5-foot intervals along the line. Each scan was stacked 128 times at the measurement point to increase the signal-to-noise (S-N) ratio. A tape measure recorded distance along the line.

2.2 Seismic Survey

To acquire reflection data, HGI used 40-Hz RT Clark Products® geophones deployed along linear 48-channel geophone arrays, with 10-foot station spacing. The geophone array was attached to our Geometrics Geode® 48-channel exploration seismograph via a seismic cable that relays the motion-induced electrical signals from individual sensors. The electrical signals were recorded as SEG-2 Rev 1, 32-bit integer data. Our acquisition software provided a number of Windows-based modules that permitted the on-site display and evaluation of data quality. Seismic energy was provided by a Betsy Seisgun (on soil) using 400-grain 8-gauge industrial blanks and a propelled energy generator (PEG) (on pavement).

Reflection data was collected along four parallel north-south lines (Plate A1). Limited refraction data were collected along three of the four reflection lines (Lines 100-300). The reflection survey used a roll-along technique, with 48 geophones spaced at 10-foot intervals and shots every 10 feet between geophones. Shot records were 1 second long, with a sampling interval of 0.125 milliseconds. A total of 341 48-channel shot gathers

were collected: 98 for L100; 73 for L200; 73 for L300; and 97 for L400. The predominant fold coverage was 24 with a maximum of 48-fold coverage. Figures C-5 through C-8 illustrates survey geometries for lines 100 through 400, respectively.

Refraction data were collected using 48 stationary geophones, with three shots off each end of the line. The quality of the seismic signals was verified in the field at each shot location. For records exhibiting low S-N levels, additional shots were made to additively stack the coherent parts of the signal and help mitigate the detrimental effects of random environmental noise. Shot locations were also mirrored to enable examination of the reciprocity of refractor travel-times.

3.0 DATA REDUCTION AND ANALYSIS

Following the field data collection, the geophysical data were downloaded to a PC at the HGI office, where they were archived, processed, and analyzed using the following proprietary software:

- GPR: GSSI's RADAN for Windows XP™ with Structural and Stratigraphic Interactive Interpretation Module®
- Refraction: Rimrock Geophysics SipWin® and Interpex Limited's IXRefraX®
- Data Modeling: Surfer®
- Reflection: Geogiga Technology Corporation's Geogiga Reflector 6.0
- Graphic Presentations: AutoCAD® and Surfer®

Nearly 140 GPS measurements were made onsite to establish location and elevation survey control. Base station readings were registered to the Vermont State Plane Coordinate System (VSPCS), which is used as the basis for the report maps.

3.1 Low Frequency GPR Survey

Site stratigraphy along GPR traverses was determined using GPR reflections that arose due to the back-scattering of the input GPR wave from discontinuous stratigraphic interfaces. However, before the data could be analyzed, significant processing was required to reduce the detrimental effects of noise associated with radio frequency signals and reflections from surface structures and buried debris. As anticipated, the MLF system reached greater depths than the 100-MHz antenna.

The GPR data were processed using GSSI's RADAN for Windows XP™. High-pass and spatial filters, horizontal smoothing, gain adjustments, migration were performed as essential processing steps.

The processed radargrams were analyzed for the location and depth of bedrock. The GPR reflector boundaries and their depth were interpreted as clay, till, or bedrock surfaces on the basis of observed structural features and/or calibration depths provided by borehole data, if available. Appendix B contains cross sections of the GPR lines.

A total of 395 clay, till, and bedrock depth points were "picked" along boundaries observed in 27 GPR radargrams. The picks were saved as ASCII files and incorporated into an Excel database. Each bedrock depth point was associated with a calculated easting, northing, surface elevation, and two-way travel time. Travel times were converted to depth using a site-specific signal velocity value calculated from borehole data or velocity analysis of GPR data.

The Excel data base of clay, till, and bedrock depth points were used to create a 2-D grid matrix for each stratigraphic layer using a Kriging algorithm. The gridded data were smoothed and contoured using Surfer and constructed as AutoCAD drawings.

The geometries of the stratigraphic horizons are presented as separate depth and elevation maps (Plates 2 through 7). The elevation maps of the clay, till, and bedrock were used to isopach (thickness) contour maps of the clay and till, shown as Plates 8 and 9, respectively,

The confidence level for the delineated clay surface is higher than that for the till and bedrock surfaces. The confidence level for our interpretations is based on the ability to resolve large changes in the electromagnetic properties at the overburden/clay boundary compared to a much smaller change at the till/bedrock boundary. The precision for this data set is approximately ± 10%.

3.2 Seismic Reflection Survey

Using the Geogiga Technology Corporation's Geogiga Reflector 6.0 software, individual shot gathers for each seismic reflection line were combined into one file and organized by their survey geometry using a receiver and shot coordinate system. Using a common offset grouping, the shot gathers were processed to reduce the effects of cultural interference and non-reflected seismic energy. The processing regimen varied by location, but included frequency filters, F-K filters, trace editing, gain adjustments, and deconvolution.

Velocity analyses were performed at various locations along each line to determine stacking velocities and for the time-to-depth conversion. Using the velocity data, CDP time stacks of all the shot gathers for each line were created. Depth stacks where then created from the time stacks using the velocity data. Spiking deconvolution was used when necessary to enhance reflection boundaries that were, otherwise, poorly delineated.

Appendix C contains plots of the reflection depth profiles form Lines 100-400. The depth profiles have been annotated to show the clay and bedrock boundaries, as well as the till boundaries, where resolvable. Possible fracture zones where identified in Lines 100-300. They are based on anomalies in the reflector geometries.

It is important to note that the interpreted stratigraphic boundaries are acoustic boundaries and may not exactly match electromagnetic stratigraphic boundaries resolved by the GPR method.

3.3 Seismic Refraction Survey

Rimrock Geophysics SipWin® 2.78 and Interpex Limited's IXRefraX® 1.11 software were used to analyze the refraction data. Refraction data reduction and analysis initiated with the determination of arrival times of the direct (where applicable) and refracted waves for each shot-receiver pair. The arrivals were identified and "picked" on a trace-by-trace basis by examining individual seismograms for the break in phase leading the first coherent seismic wavelet arrival. Coherent arrivals were enhanced through the use of frequency filters that remove both coherent (e.g. electrical) and non-coherent (e.g. wind) noise from individual records.

Direct and refracted wave travel-times expressed as a function of source and receiver locations and elevations were used to generate the earth model with velocities to complement the seismic reflection data. Several iterations of modeled results were evaluated with available known constraints, including data from nearby boreholes.

The seismic refraction data were primarily used as a constraint for the seismic reflection and GPR interpretation. The signal frequencies normally used for this method contain wavelengths too long to resolve thin or shallow stratigraphy.

4.0 DATA SYNTHESIS

4.1 Stratigraphy

The geologic model presented in this report is built upon the clay, till, and bedrock stratigraphic mapping. The primary function of the geologic model is to provide the structural and thickness trends of the mapped units. Although deemed to be reasonably accurate, the depth and elevation data used for the model should be considered as good approximations. Additional calibration data for the model is needed to depict more accurate layer depths and elevations. In particular, additional surface topography and borehole derived bedrock depths in the central and northern portions of the investigation area are needed.

The clay topography (Plates 2 and 3) within the studied area consists of a low in the south-central region, a high ridge reaching elevation 305 through the northern center of the survey area, and valleys on the west and southeastern sides reaching an elevation of approximately 285 feet. The clay layer slopes gradually from a high of approximately 20 feet to a low in the south center, southeastern and western sides of the surveyed area.

The till layer (Plates 4 and 5) follows the same general trend as the clay layer. It reaches a topographic high in the north-central portion of the survey area of approximately 294

feet and slopes downward toward the east, west and south to a low of approximately elevation 267 feet.

The bedrock layer (Plates 6 and 7) shows a topographic high in the northeastern portion of the survey area, gradually sloping toward the south and east. The bedrock elevation reaches a high of approximately 248 feet and a low in the southernmost portion of the survey area of approximately 215 feet.

A possible bedrock fracture zone was identified in seismic reflection data from Lines 100 to 300. The possible fracture zone trends NNW and appears to align with the trend of the bedrock ridge.

The clay and till isopach maps define a post clay-deposition erosional environment responsible for shaping the configuration of the surfaces expressed in the clay and till elevation maps (Plates 3 and 5). This observation is consistent with the Vermont Geological Survey's interpretation of the surficial geology of the Williston Quadrangle. The investigation area is situated at the front of post-glacial deltaic deposits overlying the marine clay.

4.2 Comparison with Previous Survey

The results of this investigation correlate with some aspects of the previous geophysical results. Similar to the previous results, the top of the clay layer (referred to in the previous survey as silt) presented in this report occurs as an elevation high trending southwest through the northern edge of the survey area. Our results also indicate a low clay elevation at the southern, eastern, and western limits of the survey area where the previous results show low elevations surrounding this ridge. Our till contour map shows a pattern similar to that from the previous survey; i.e. a till ridge running through the north-central portion of the study area surrounded by low till elevations.

The greatest discrepancy between the two surveys is associated with the bedrock surface. The previous study's profiles show northeast-southwest-trending bedrock ridge while this study shows the bedrock ridges trending more east-west. The discrepancies between our depths/elevations and those of the previous survey are most likely due to the previous study's lower seismic vertical data resolution compared to GPR and their lower spatial data resolution affecting the structural trends of the stratigraphic surfaces.

Figure 1 GPR 100-MHz bi-static antenna setup for survey along Commerce Road.

Figure 2 GPR MLF bi-static antenna traversing along Kirby Lane toward South Brownell Road.

Figure 3 Seismic reflection and refraction line setup along Commerce Street.

PLATE 1

Seismic Line

GPR Line

Notes:
1.) Base map created by HGI GPS data.
2.) HGI's geophysical traverses were located using a subfoot GPS system. The data were overlaid on our GPS map.

0 50 100 200 400

Scale in Feet

AUGUST 2010	FILE NO. 2010036

Stratigraphic Investigation
GPR & Seismic Traverses
Commerce Street Superfund Site
Williston, Vermont

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com

NOT ALL SUBSURFACE FEATURES MAY BE DEPICTED ON THIS MAP

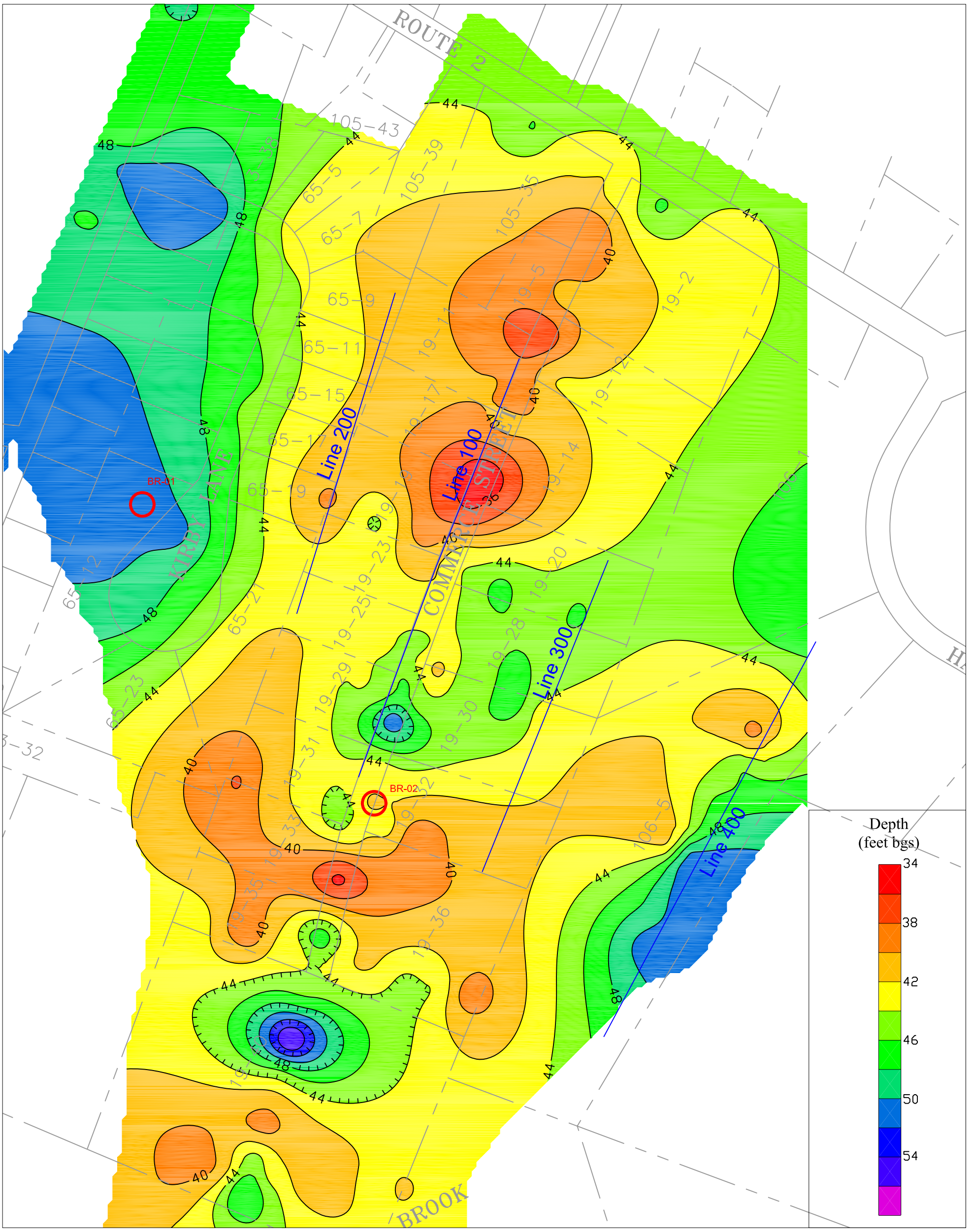

PLATE 2

Notes:
1.) Base map created by HGI GPS data.
2.) HGI's geophysical traverses were located using a subfoot GPS system. The data were overlaid on our GPS map.
3.) Clay depth contours represent the general trend of the clay surface and are not intended to be used as precise site-specific depth measurements.
4.) Clay layer depths were determined by converting GPR travel times to distance.

0 50 100 200 400
Scale in Feet

AUGUST 2010	FILE NO. 2010036

Stratigraphic Investigation
Clay Layer Depth Contour Plot
Commerce Street Superfund Site
Williston, Vermont

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com

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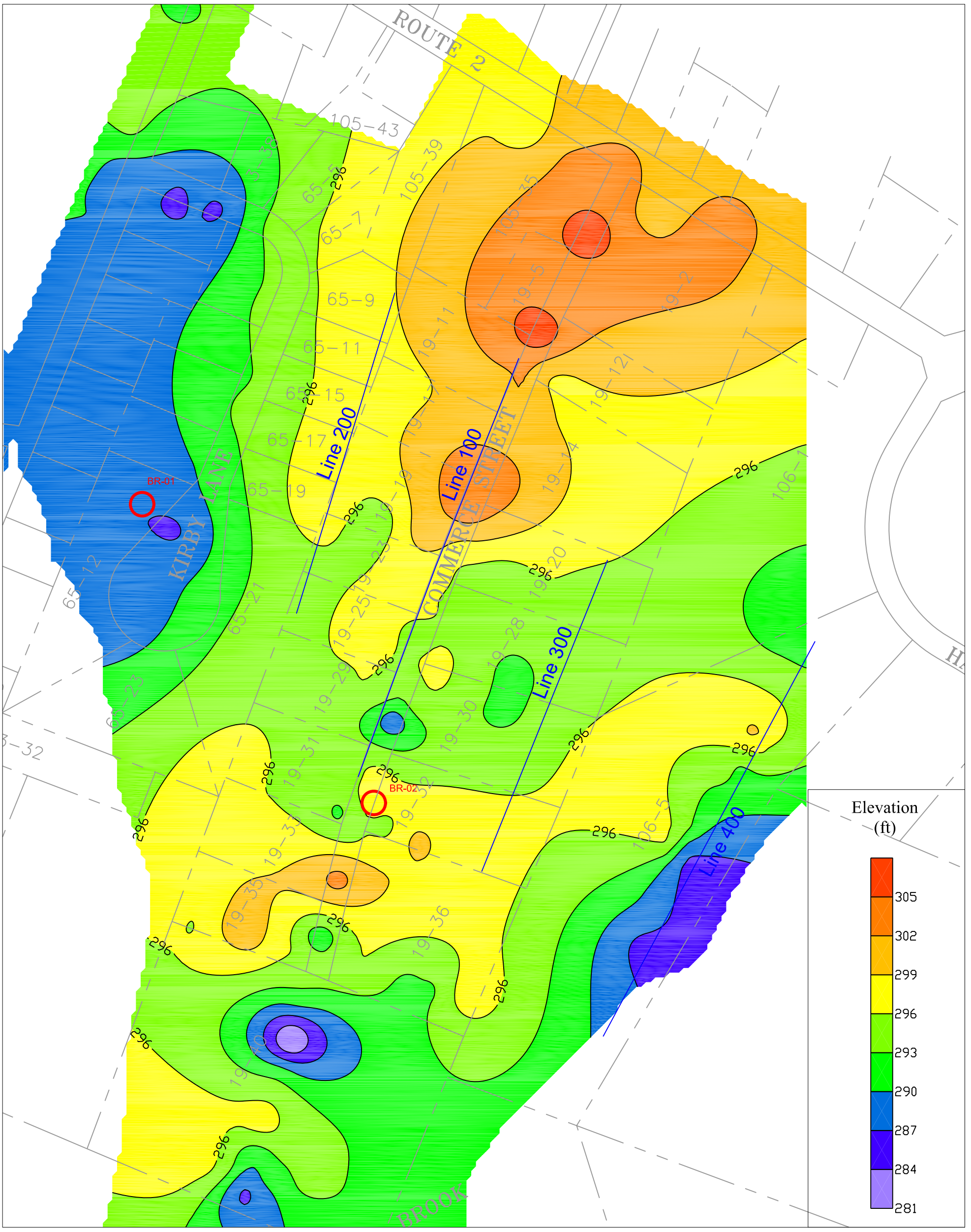

PLATE 3

Notes:
1.) Base map created by HGI GPS data.
2.) HGI's geophysical traverses were located using a subfoot GPS system. The data were overlaid on our GPS map.
3.) Clay elevation contours represent the general trend of the clay surface and are not intended to be used as precise site-specific elevation measurements.
4.) Clay layer elevations were determined by converting GPR travel times to distance.

0 50 100 200 400
Scale in Feet

AUGUST 2010	FILE NO. 2010036

Stratigraphic Investigation
Clay Layer Elevation Contour Plot
Commerce Street Superfund Site
Williston, Vermont

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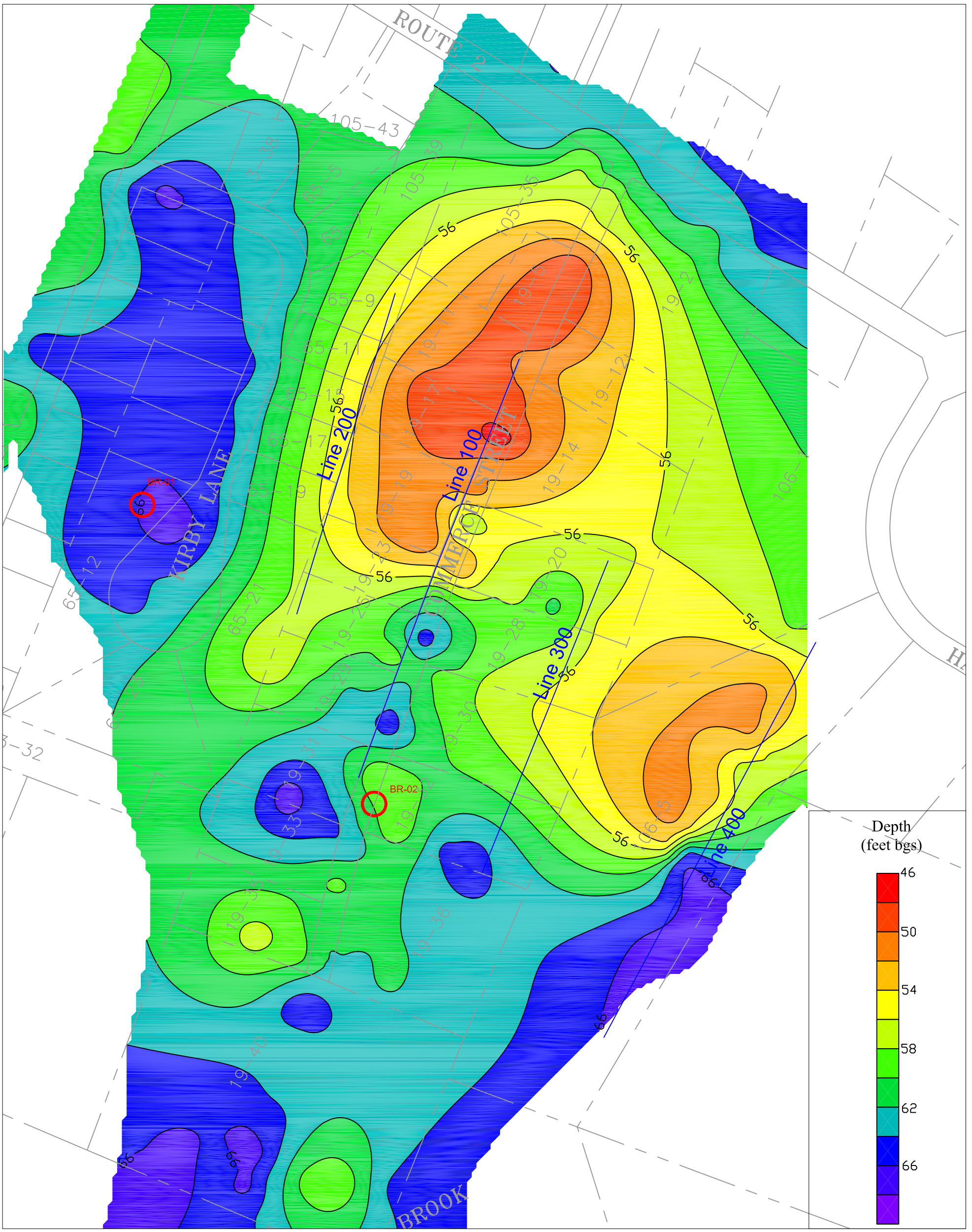

PLATE 4

Notes:
1.) Base map created by HGI GPS data.
2.) HGI's geophysical traverses were located using a subfoot GPS system. The data were overlaid on our GPS map.
3.) Till depth contours represent the general trend of the till layer surface and are not intended to be used as precise site-specific depth measurements.
4.) Till layer depths were determined by converting GPR travel times to distance.

0 50 100 200 400
Scale in Feet

AUGUST 2010	FILE NO. 2010036

Stratigraphic Investigation
Till Layer Depth Contour Plot
Commerce Street Superfund Site
Williston, Vermont

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com

NOT ALL SUBSURFACE FEATURES MAY BE DEPICTED ON THIS MAP

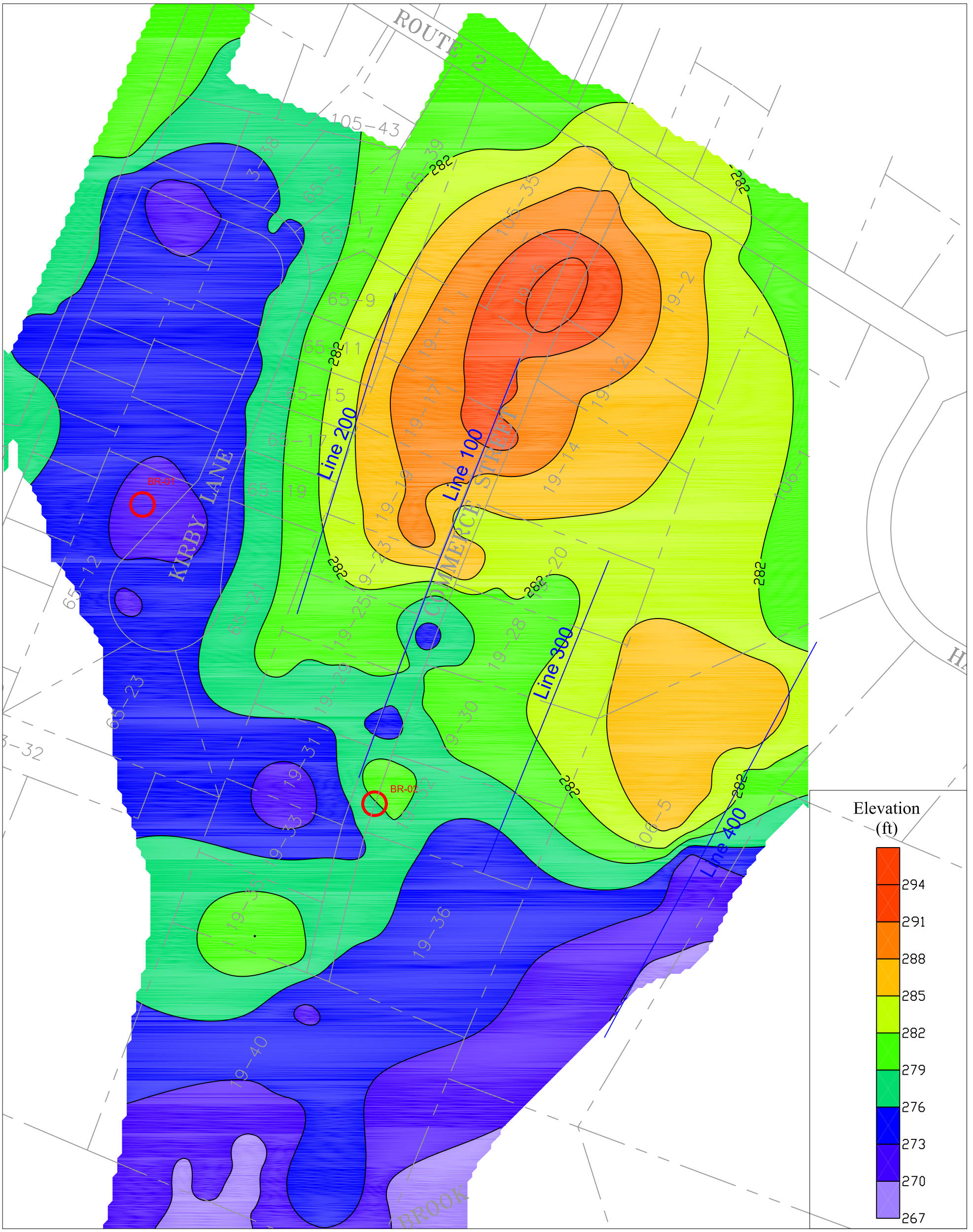

PLATE 5

Notes:
1.) Base map created by HGI GPS data.
2.) HGI's geophysical traverses were located using a subfoot GPS system. The data were overlaid on our GPS map.
3.) Till elevation contours represent the general trend of the till layer surface and are not intended to be used as precise site-specific elevation measurements.
4.) Till layer elevationswere determined by converting GPR travel times to distance.

0 50 100 200 400
Scale in Feet

AUGUST 2010	FILE NO. 2010036

Stratigraphic Investigation
Till Layer Elevation Contour Plot
Commerce Street Superfund Site
Williston, Vermont

Hager GeoScience, Inc.
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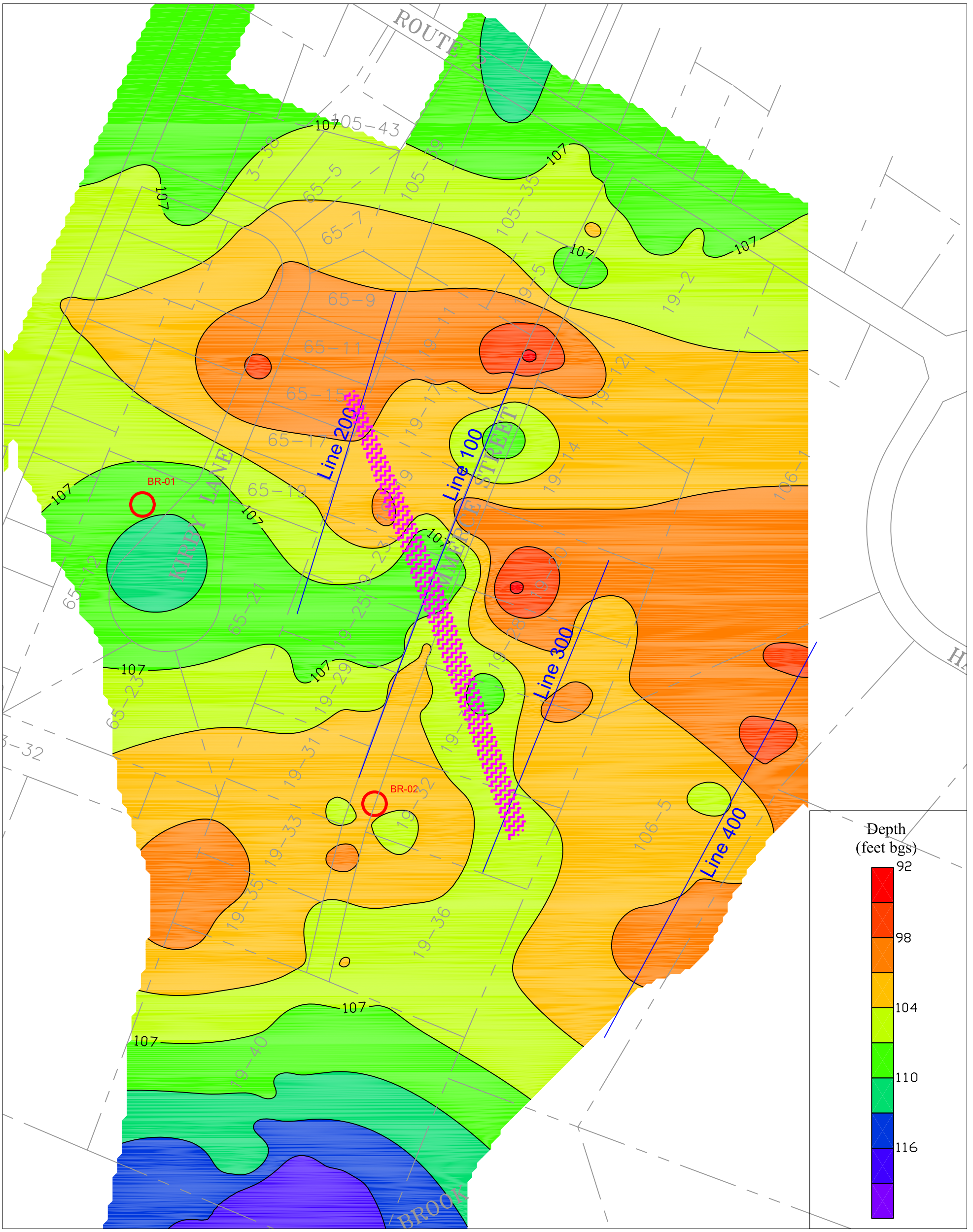

Possible Fracture Zone

PLATE 6

Notes:
1.) Base map created by HGI GPS data.
2.) HGI's geophysical traverses were located using a subfoot GPS system. The data were overlaid on our GPS map.
3.) Bedrock depth contours represent the general trend of the bedrock surface and are not intended to be used as precise site-specific depth measurements.
4.) Bedrock depths were determined by converting GPR travel times to distance.

0 50 100 200 400
Scale in Feet

AUGUST 2010	FILE NO. 2010036

Stratigraphic Investigation
Bedrock Depth Contour Plot
Commerce Street Superfund Site
Williston, Vermont

Hager GeoScience, Inc.
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(781)-935-8111 hgi@hagergeoscience.com

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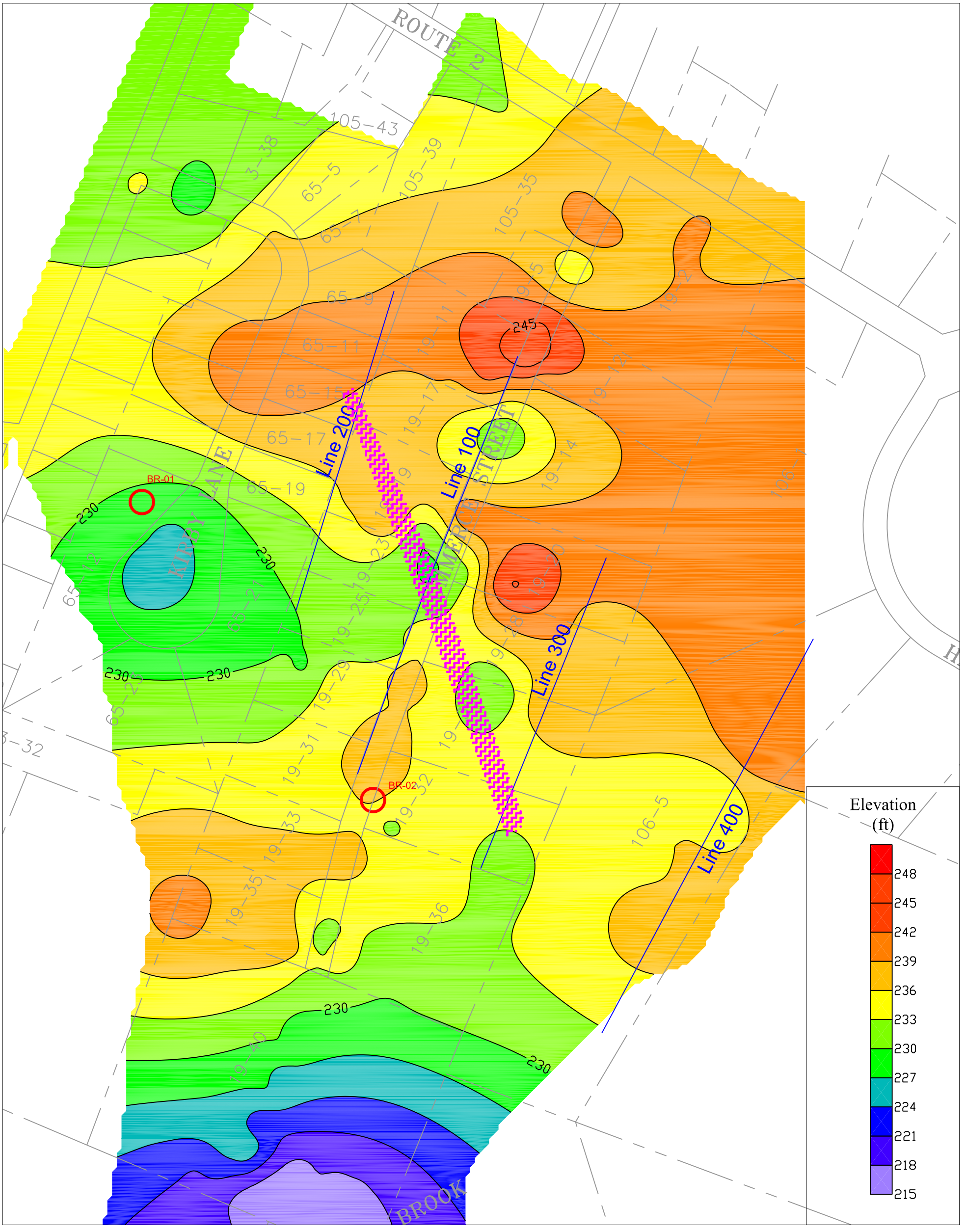

Possible Fracture Zone

PLATE 7

Notes:
1.) Base map created by HGI GPS data.
2.) HGI's geophysical traverses were located using a subfoot GPS system. The data were overlaid on our GPS map.
3.) Bedrock elevation contours represent the general trend of the bedrock surface and are not intended to be used as precise site-specific elevation measurements.
4.) Bedrock elevations were determined by converting GPR travel times to distance.

0 50 100 200 400
Scale in Feet

AUGUST 2010	FILE NO. 2010036

Stratigraphic Investigation
Bedrock Elevation Contour Plot
Commerce Street Superfund Site
Williston, Vermont

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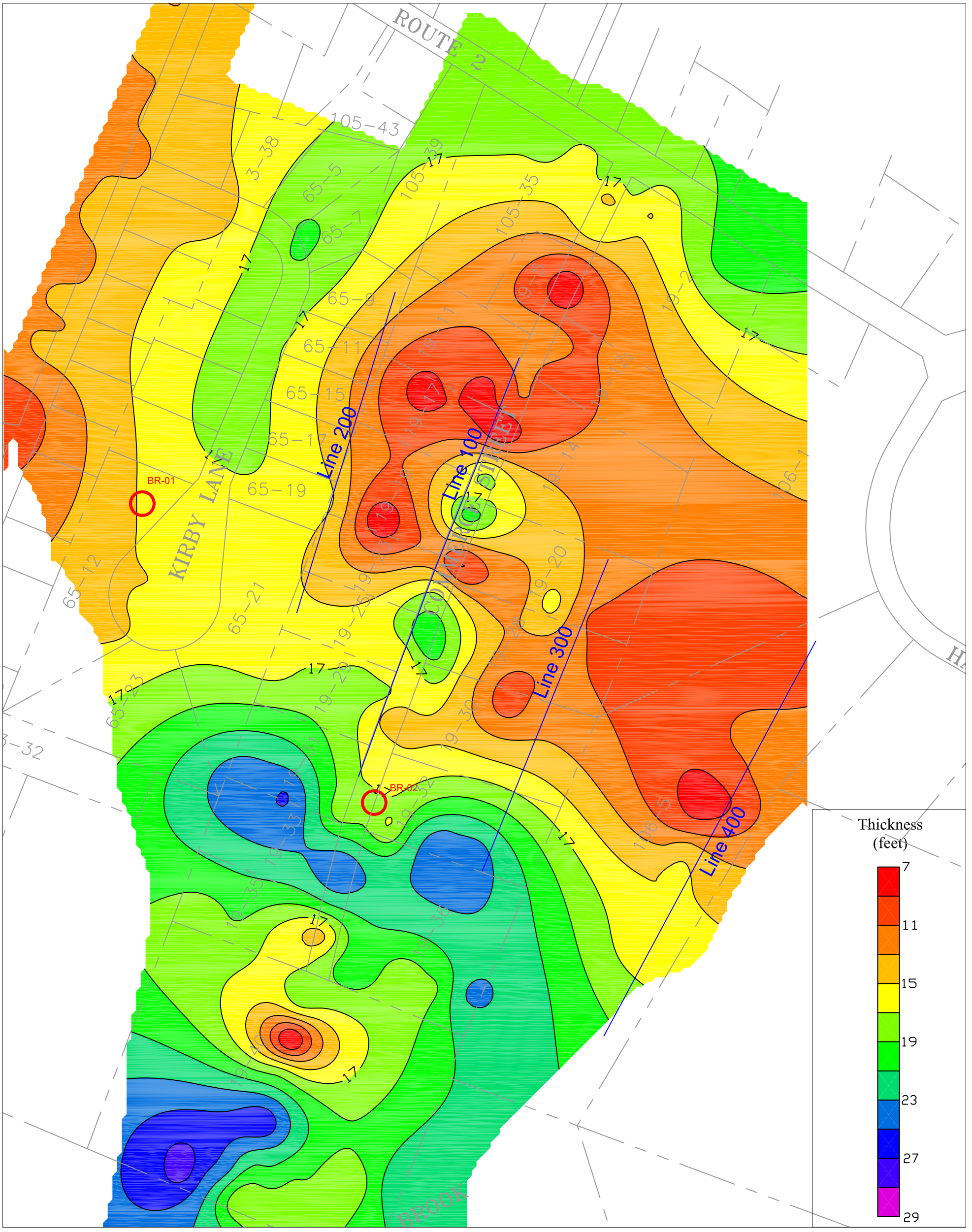

PLATE 8

Notes:
1.) Base map created by HGI GPS data.
2.) HGI's geophysical traverses were located using a subfoot GPS system. The data were overlaid on our GPS map.
3.) Clay thickness contours represent the general trend of the clay thickness and are not intended to be used as precise site-specific thickness measurements.
4.) The thickness of the clay layer was determined by taking the difference between the top of till and top of clay elevations.

0 50 100 200 400
Scale in Feet

AUGUST 2010	FILE NO. 2010036

Stratigraphic Investigation
Clay Layer Isopach Contour Plot
Commerce Street Superfund Site
Williston, Vermont

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com

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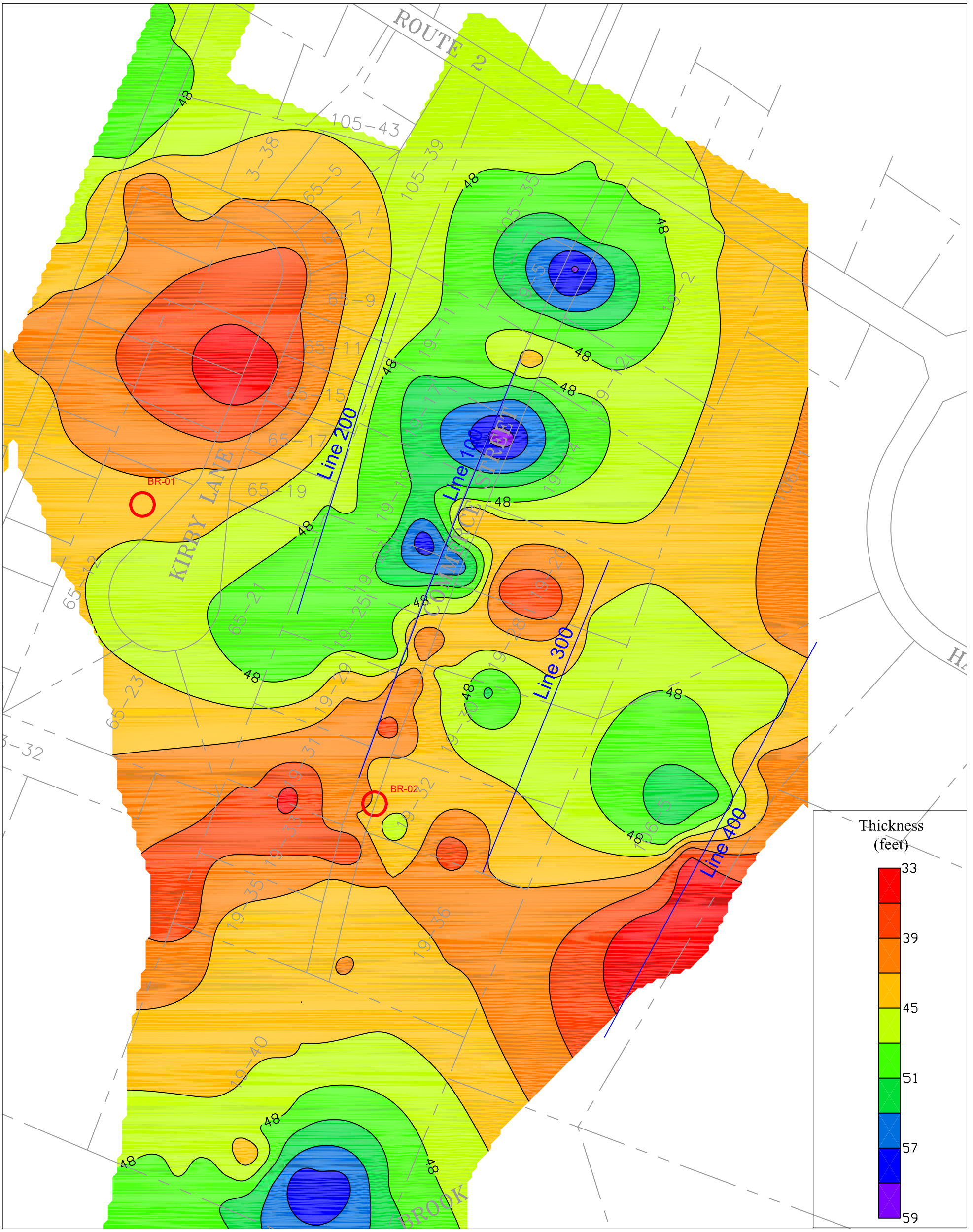

PLATE 9

Notes:
1.) Base map created from HGI GPS data.
2.) HGI's geophysical traverses were located using a subfoot GPS system. The data were overlaid on our GPS map.
3.) Till thickness contours represent the general trend of the till thickness and are not intended to be used as precise site-specific thickness measurements.
4.) The thickness of the till layer was determined by taking the difference between the top of bedrock and top of till elevations.

0 50 100 200 400
Scale in Feet

AUGUST 2010	FILE NO. 2010036

Stratigraphic Investigation
Till Layer Isopach Contour Plot
Commerce Street Superfund Site
Williston, Vermont

Hager GeoScience, Inc.
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(781)-935-8111 hgi@hagergeoscience.com

NOT ALL SUBSURFACE FEATURES MAY BE DEPICTED ON THIS MAP

APPENDIX A. THE GEOPHYSICAL TECHNIQUES

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A.1 Ground Penetrating Radar

A.1.1 Description of the Method

The principle of ground penetrating radar (GPR) is the same as that of weather or police radar, except that GPR transmits electromagnetic energy into the ground, which is reflected back to the surface from interfaces between materials with contrasting electrical (dielectric and conductivity) properties. The greater the contrast between two materials in the subsurface, the stronger the reflection observed on the GPR record. The depth of GPR signal penetration depends on the properties of the subsurface materials and the frequency of the antenna used to collect radar data. The lower the antenna frequency used, the deeper the signal penetration, but the lower the signal resolution.

We collect GPR data using a Geophysical Survey Systems SIR System 2 or 2000 digital ground penetrating radar unit, which consists of a computer connected to a transmit/receive antenna. Radar data are collected in point, continuous, or survey wheel mode while moving the antenna across the ground. Data are displayed in color on the computer monitor and simultaneously recorded on the unit's hard drive for later processing and interpretation using proprietary RADAN for Windows® software. Hard copies of the data may be printed in the field on a thermal printer.

A.1.2 Data Analysis and Interpretation

The horizontal scale of the GPR record shows distance along the survey traverse. In the continuous data collection mode, the horizontal scale on each GPR record is determined by the antenna speed. When a survey wheel is used; as at this site, the GPR record is automatically marked at specified intervals along the survey line. The vertical scale of the radar records is determined by the recording interval. The recording interval represents the maximum two-way travel time in which data are recorded. The conversion of two-way travel time to depth depends on the propagation velocity of the GPR signal, which is site specific. In the absence of site-specific subsurface information about stratigraphy, we estimate propagation velocities from handbook values and experience at similar sites.

The size, shape, and amplitude of GPR reflections are used to interpret GPR data. Metal objects such as USTs and utilities produce reflections with high amplitude and distinctive hyperbolic shapes in GPR records when traverses are made perpendicular to their long axes. Clay or concrete pipes and boulders may produce radar signatures of similar shape but lower amplitude. The boundaries between saturated and unsaturated materials, sand and clay, and bedrock and overburden, generally also produce strong reflections.

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A.1.3 Limitations of the Method

GPR signal penetration is site specific, determined by the dielectric properties of local soil and fill materials. GPR signals propagate well in resistive materials such as sand and gravel; however, soils containing clay, ash- or cinder-laden fill, or fill saturated with brackish or otherwise conductive groundwater cause GPR signal attenuation and loss of target resolution (i.e., limited detection of small objects). Concrete containing rebar or mesh also inhibits signal penetration.

Interpreted depths of objects detected using GPR are based on on-site calibration, handbook values, and/or estimated GPR signal propagation velocities from similar sites. GPR velocities and depth estimates may vary if the medium of investigation or soil water content is not uniform throughout the site. (Electromagnetic waves do not travel as fast through water as air, so the distance to a reflector below the water table may appear farther than in actuality.)

Utilities are interpreted on the basis of reflectors of similar size and depth that show a linear trend, but GPR cannot unambiguously determine that all such reflectors are related. Fiberglass USTs or utilities composed of plastic or clay may be difficult to detect, as well as objects underneath reinforced concrete pads.

Changes in the speed at which the GPR antenna is moved between stations causes slight variations in distance interpolations, and hence in interpreted object positions.

The GPR antenna produces a cone-shaped signal pattern that emanates approximately 45 degrees from horizontal fore and aft of the antenna. Therefore, buried objects may be detected before the antenna is located directly over them, and GPR anomalies may appear larger than actual target dimensions.

GPR is an interpretive method, based on the subjective identification of reflection patterns that may not uniquely identify a subsurface target. Borings, test pits, or site utility plans must verify the results.

A.2 Seismic Refraction

A.2.1 Description of the Method

We collect seismic refraction data using our Geometrics Geode® exploration seismograph system with 24- or 48-channel geophone arrays. Geophone spacing depends on the depth of investigation, but is between 5 to 20 feet. Shot points are located at a minimum off the ends of each spread, at the end geophones, and in the middle of the spread

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A.2.2 Data Analysis and Interpretation

The seismic data are analyzed using the SIPWin® iterative ray tracing technique and/or Interpex Limited IXRefraX® using the general reciprocal method. Data are input into the computer and a first-approximation model is created. The computer then compares the modeled arrival times along each ray trace from shot to geophone with the "picked" field arrival times and subsequently adjusts the model. After a number of iterations of this process, a reasonable fit between modeled and actual data is produced (i.e. the travel times along ray paths of modeled and calculated data are similar) which leads to the determination of layer depth beneath each geophone and shot point. The accuracy of the SIPWin® iterative method is contingent on a reasonable first-guess horizontally layered model.

A.2.3 Limitations of the Method

Analysis of seismic refraction data requires an assumption of a model composed of a number of layers, such as bedrock overlain by overburden, or bedrock overlain by till and overburden. Other limiting assumptions are i) seismic refraction layers are continuous and extend from one end of the refraction line to the other; and ii) layer velocities increase with depth.

Seismic refraction requires a sufficiently strong source so that seismic energy is transmitted to refracting interfaces and returned to the surface to be recorded by each geophone in a seismic spread. When bedrock is deep and/or overburden velocities are low, explosives or seisgun sources may be required to produce sufficient seismic energy to reach most or all of the geophones in a spread. It is becoming increasingly difficult to use intrusive seismic sources, particularly explosives, at many sites.

Seismic refraction can only distinguish between materials if their seismic velocities are sufficiently different. Thus it may not be possible to distinguish between weathered bedrock and till, particularly if the bedrock is shale.

Electric lines with 60-cycle current (and/or greater harmonics) may create interference with seismic data collection along lines adjacent to or beneath them.

A.3 Seismic Reflection

A.3.1 Description of the Method

We collect seismic reflection data using our Geometrics Geode© exploration seismograph system with 24- or 48-channel geophone arrays. Geophone spacing generally depends on the depth of investigation, but is usually between 2.5 to 10 feet. Shot points are located in-line with the geophones to depict stratigraphy. The source of seismic energy is anthropogenic and is coupled to the ground through either hammering on a steel plate or with a Betsy seisgun that

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fires industrial blanks. For the latter source, the nozzle of the seisgun is buried 1.5 to 2 feet below the surface to enhance the amplitude of the signal entering the ground. The quality of the seismic signal for each shot point is verified in the field.

A typical field recording configuration is the common source gather, which involves 24 active geophones and a single source location at a fixed offset from the recording channels. With HGI's 48-channel recording capability, this configuration can be maintained throughout a seismic line by "rolling" the geometrical configuration along the ground surface at 5 feet intervals. In doing so, a number of reflections from different source-receiver geometries are recorded which correspond to the same subsurface reflection point. These can be subsequently stacked to improve the quality of recorded signals.

A.3.2 Data Analysis and Interpretation

A substantial amount of processing is needed before it is possible to make any geologic interpretation of recorded seismic data. A typical processing sequence includes, but is not restricted to, the following: i) initial frequency filtering; ii) pre-stack F/K filtering; iii) trace edit; iv) first arrival mute; v) common offset to CDP sort; vi) application of datum statistics; vii) normal move out correction; viii) surface consistent residual statistics; ix) CDP stack; x) deconvolution; xi) post-stack F/K filtering; xii) migration; xiii) frequency filtering; and xiv) trace scaling/normalization. HGI utilizes the Kansas Geological Survey WinSeis®-15 Turbo software package to analyze seismic reflection data.

Geologic interpretation is carried out on the CDP stacked data and generally involves identifying continuous reflectors. After reflector horizons have been delineated and stratigraphically assessed, a "time-to-depth" conversion can be applied using velocity information obtained from neighboring borehole data or from typical velocity estimates from compiled tables.

A.3.3 Limitations of the Method

Analysis and interpretation of shallow seismic reflection data is inherently limited by:

The ability to resolve thin layers is dependent on the dominant frequency of the interrogating energy source. A general "rule of thumb" is that a layer must be thicker than ¼ of the dominant wavelength to produce a noticeable reflection.

The ability to isolate an individual reflector is dependent on the ability to separate it from the wavelets of earlier arrivals.

The magnitude of the reflection from any discontinuous interface is directly related to the impedance contrast across it (where impedance is defined as the product of density and velocity).

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Thus, situations frequently occur where additional strata exist but have an associated impedance contrast too small to be discerned.

Seismic energy sources must be strong enough for adequate penetration of seismic energy to the target of interest.

The robustness of any “time-to-depth” conversion is directly correlated with the validity of the velocity profile used. For near-surface seismic reflection investigations, this problem is greatly exacerbated by the possibility of strong lateral variations in the velocity profile.

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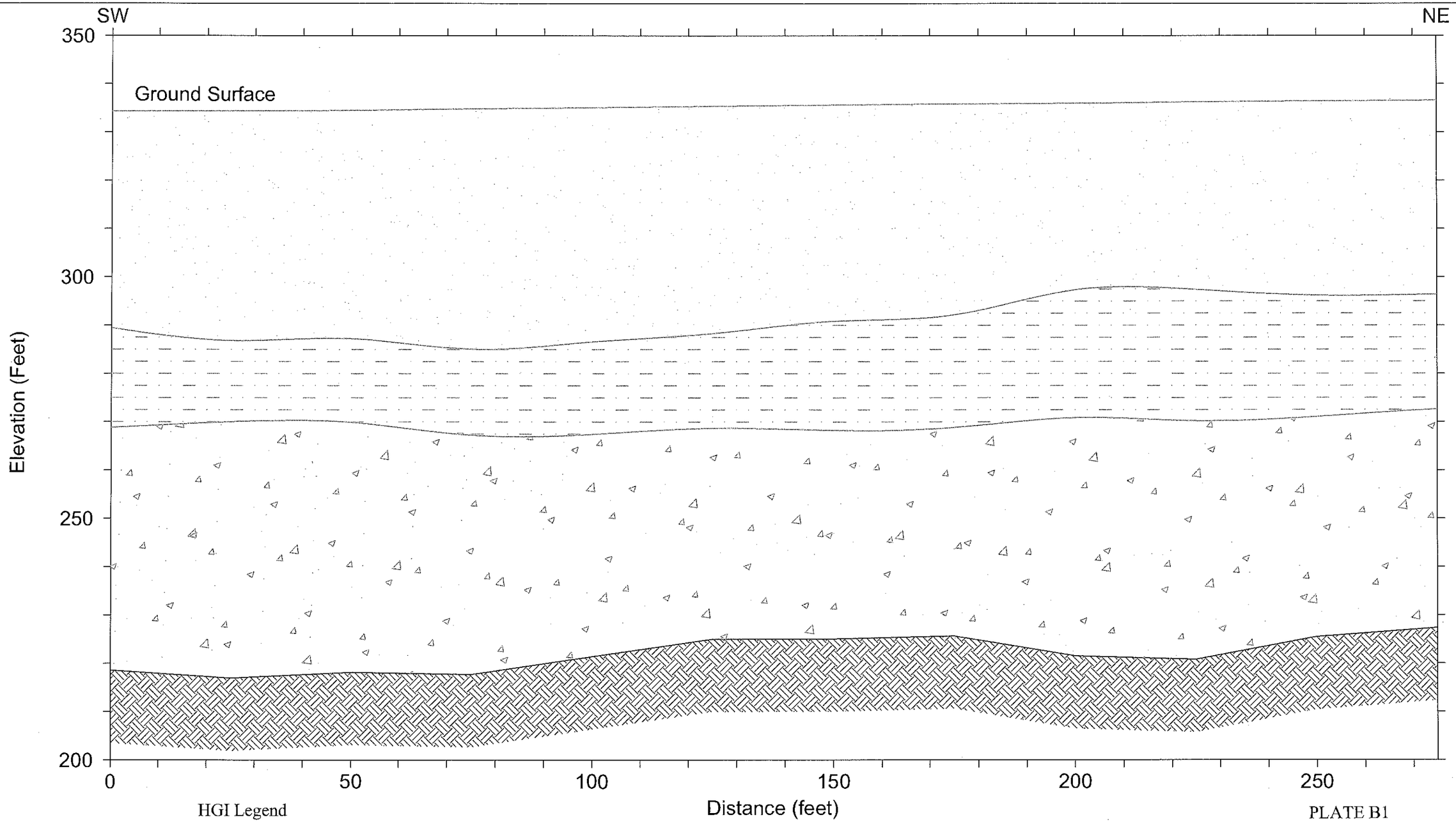
APPENDIX B. GPR CROSS SECTIONS



HGI Legend

PLATE B1

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 1
Commerce Street
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com

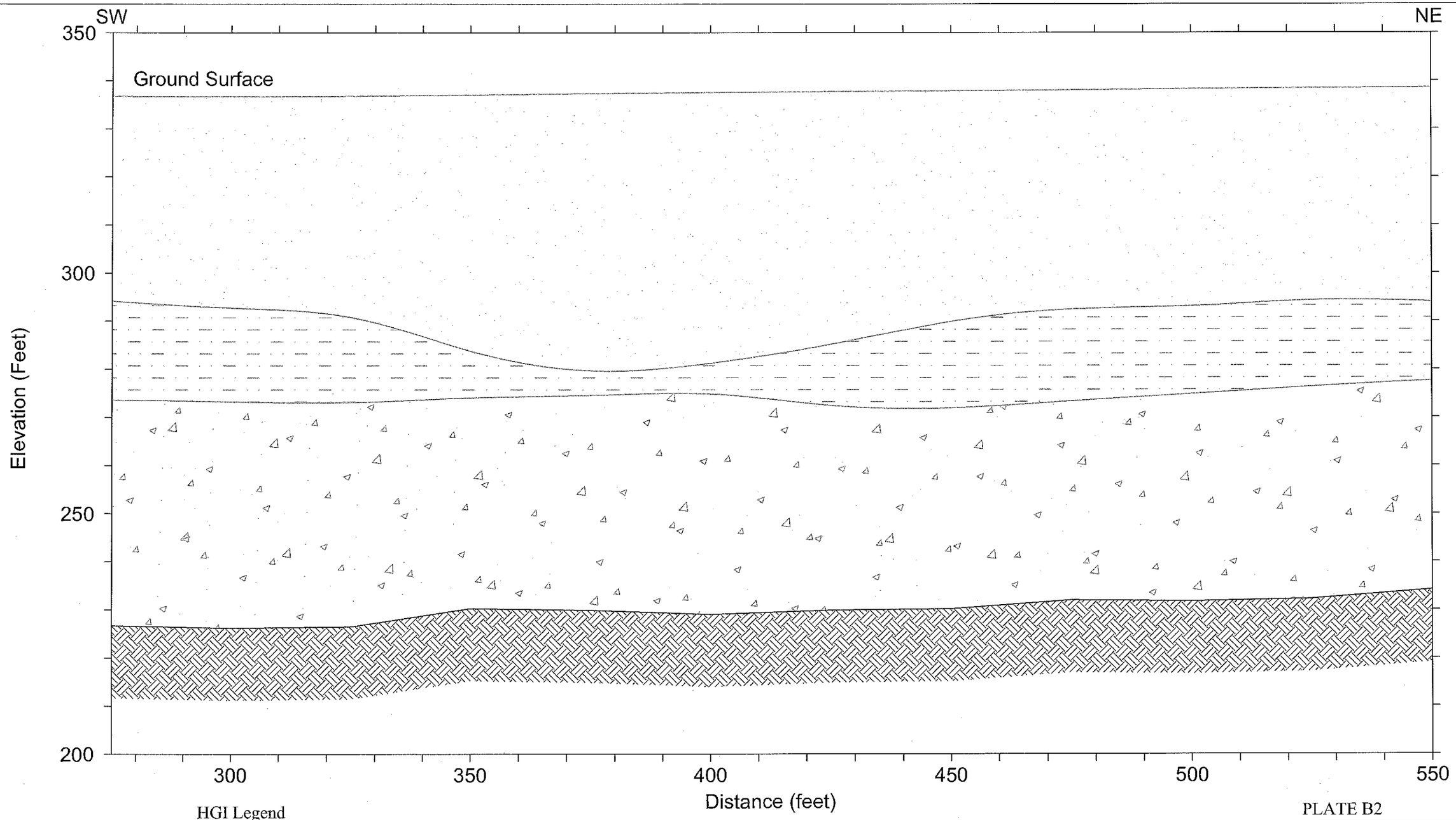


PLATE B2

HGI Legend

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

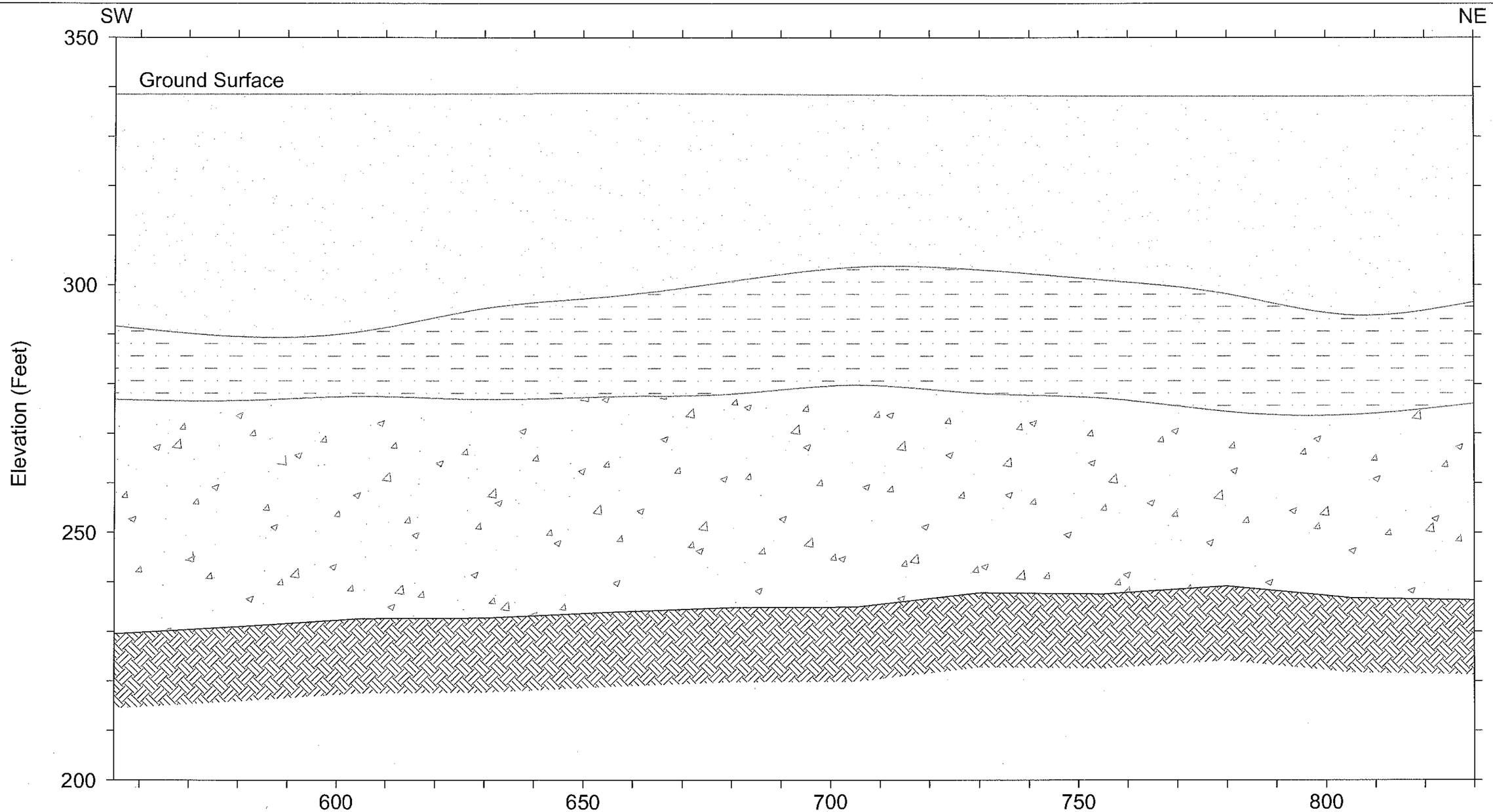
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 2
Commerce Street
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B3

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

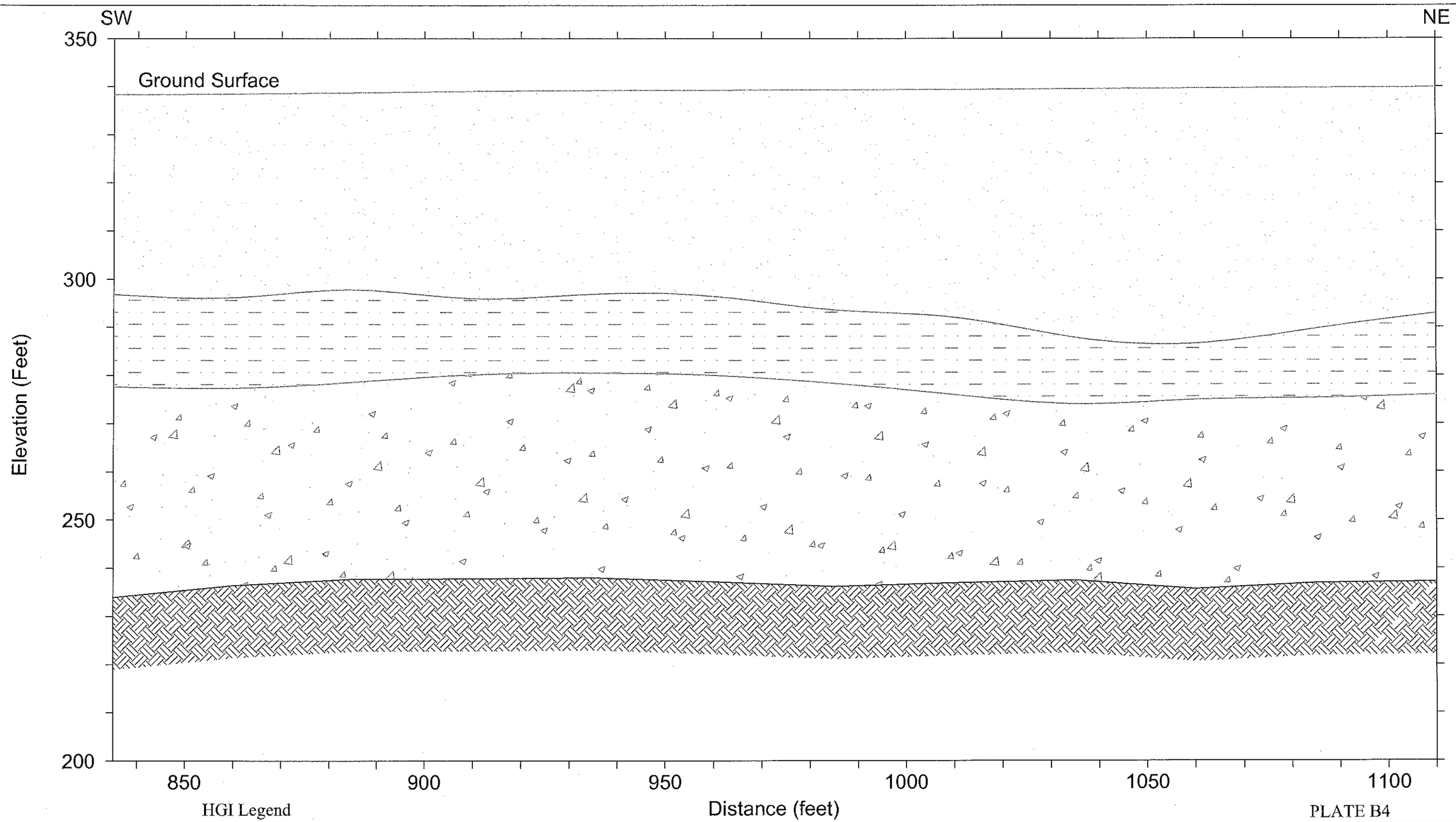
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 3
Commerce Street
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B4

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

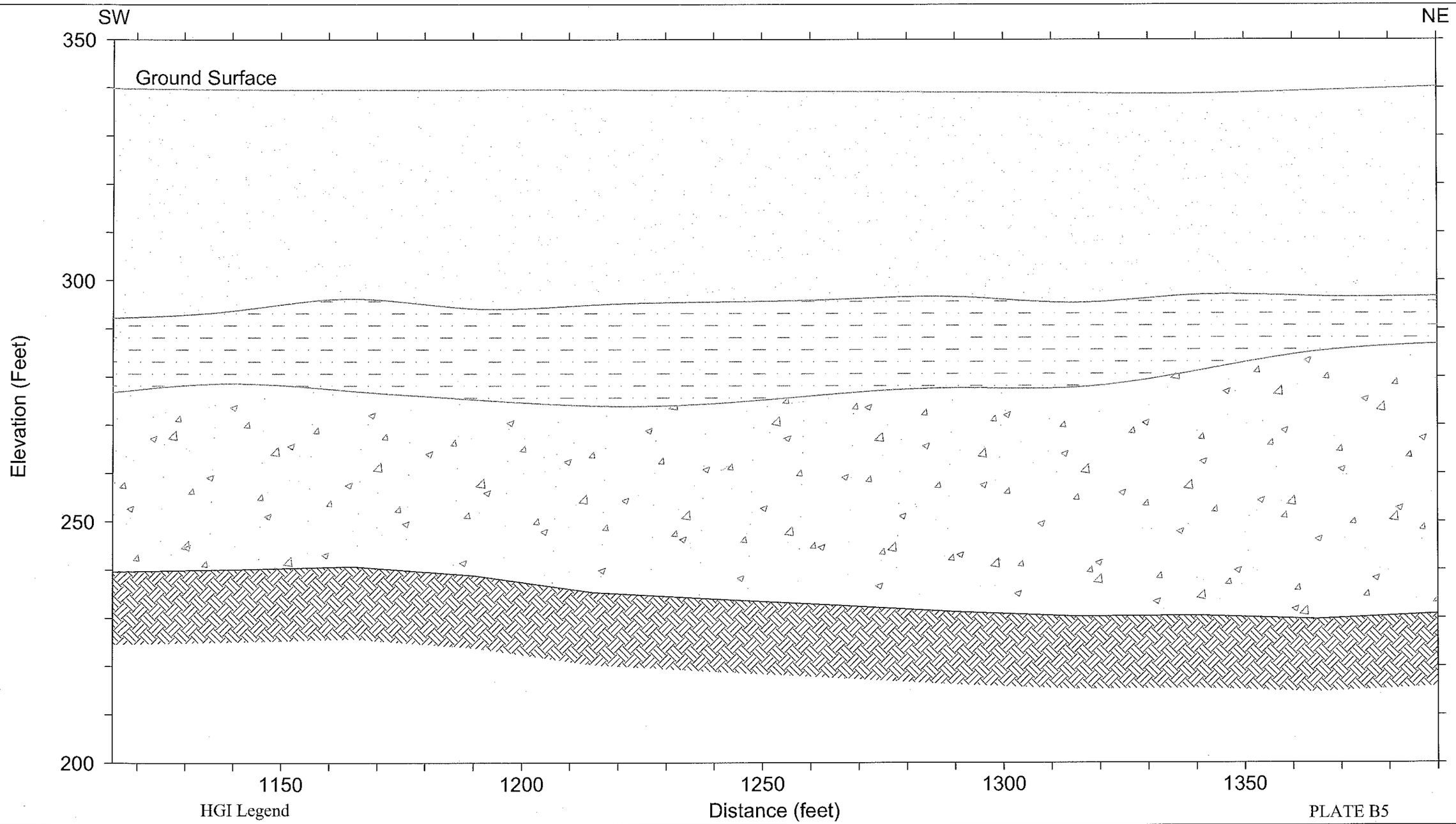
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 4
Commerce Street
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B5

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 5
Commerce Street
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
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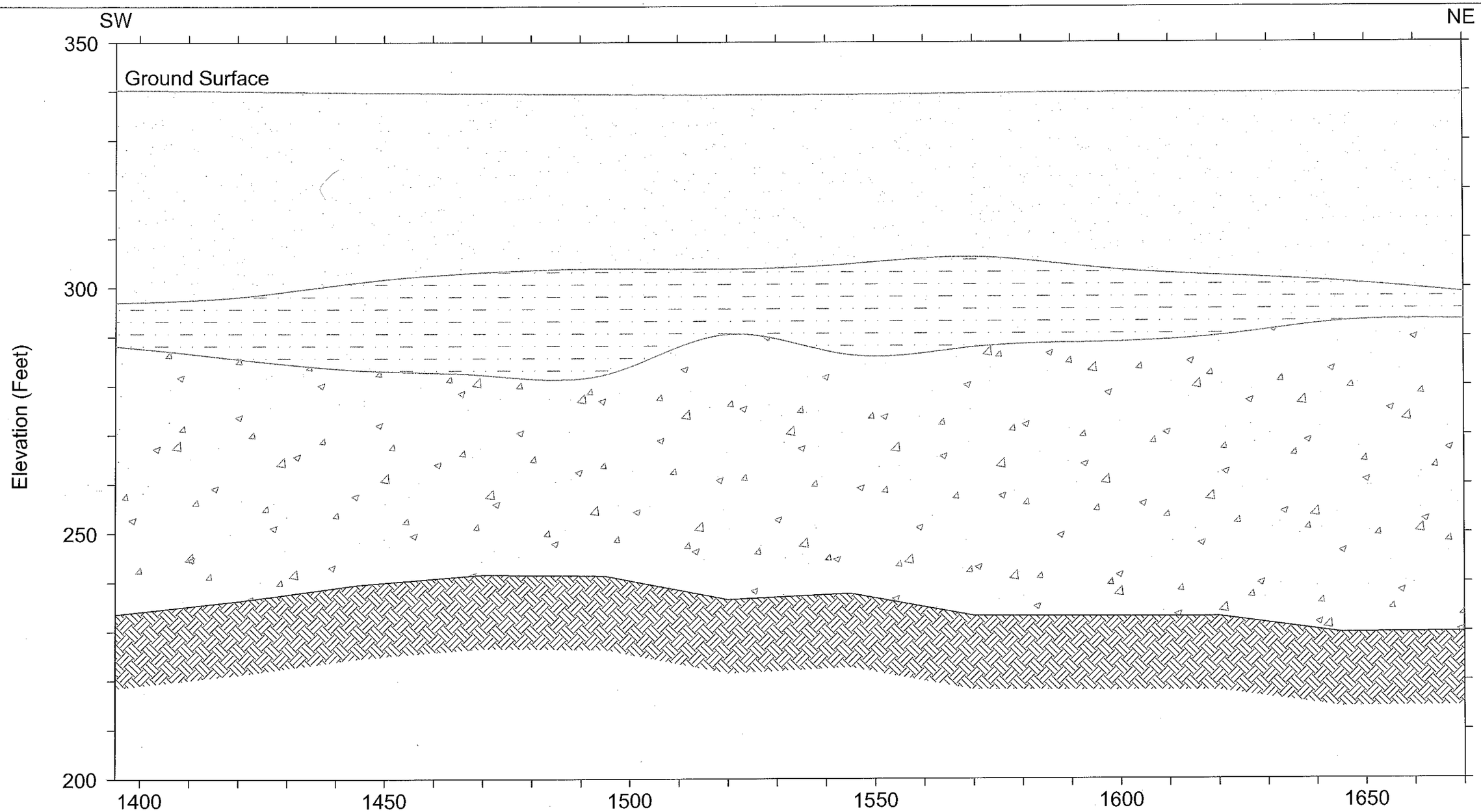

HGI Legend

PLATE B6

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 6
Commerce Street
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
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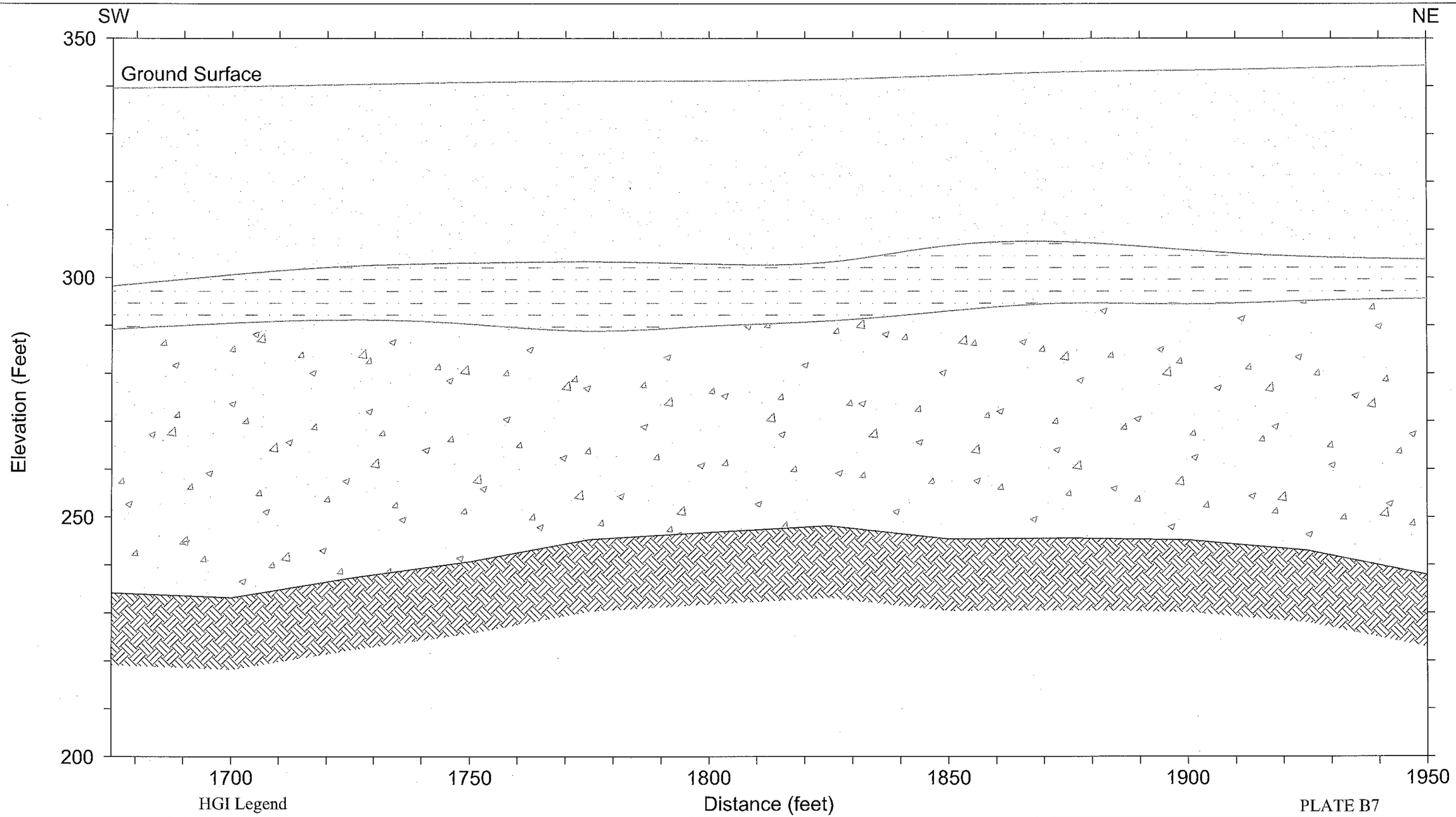

HGI Legend

PLATE B7

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 7
Commerce Street
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
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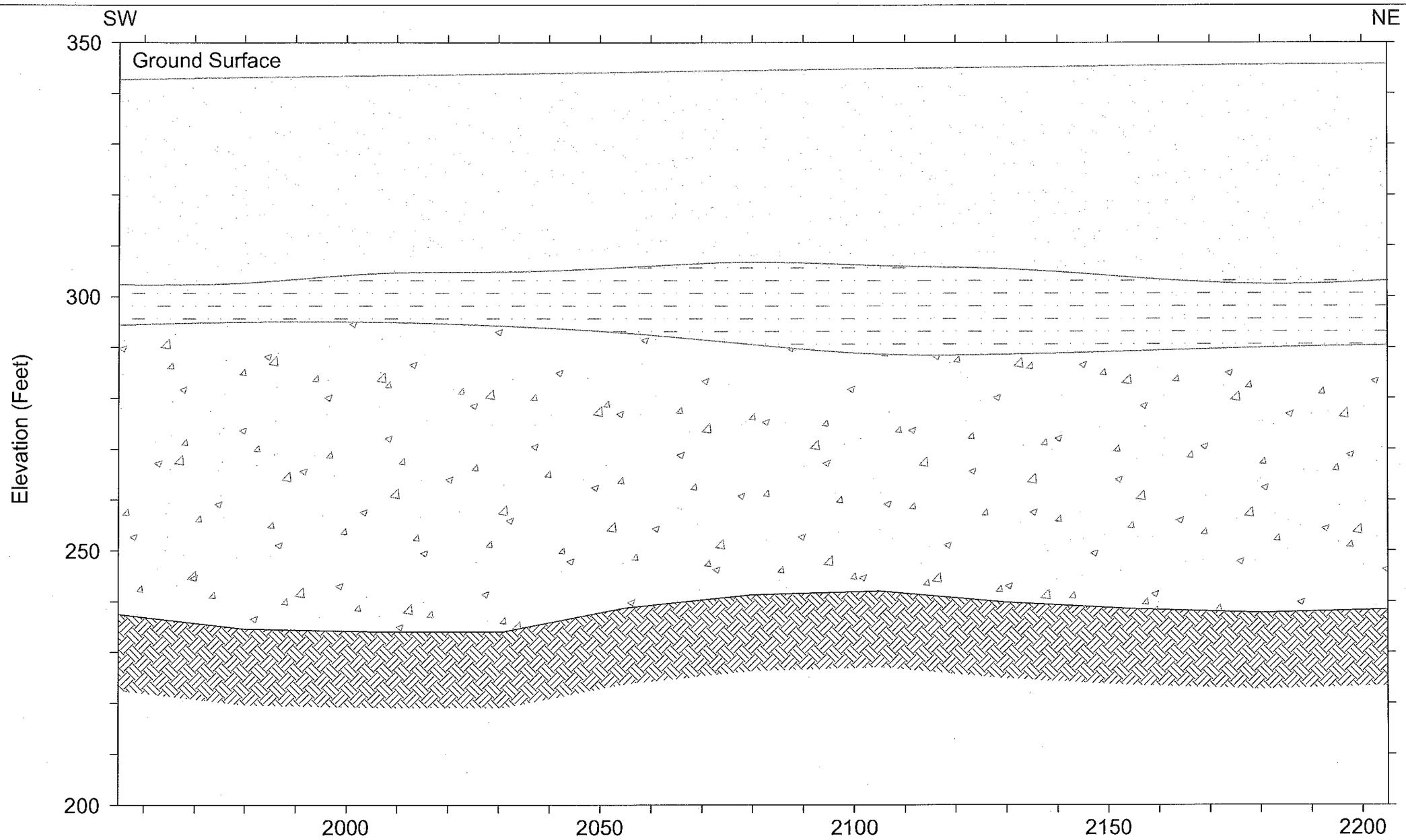

HGI Legend

PLATE B8

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 8
Commerce Street
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
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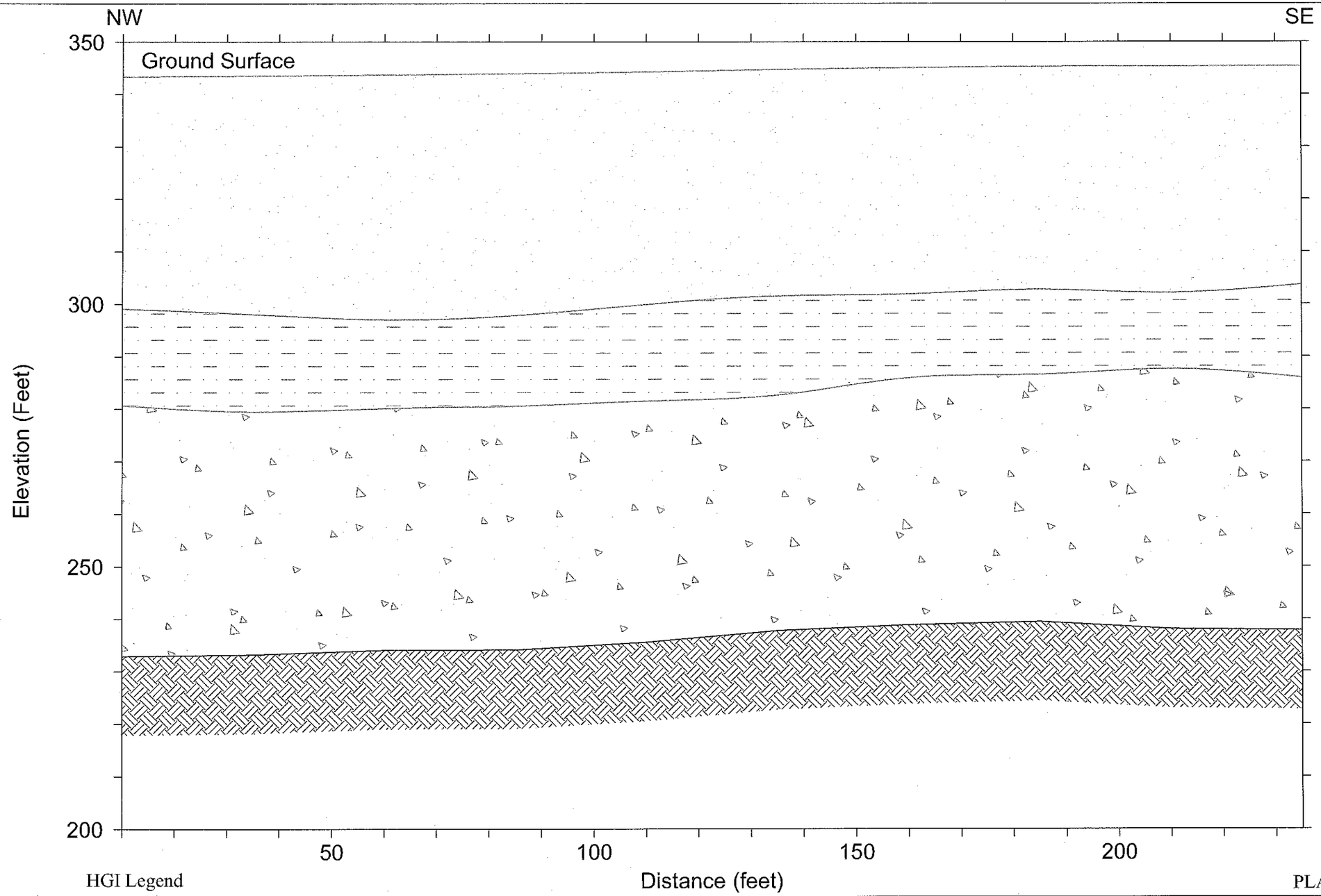


HGI Legend

PLATE B9

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

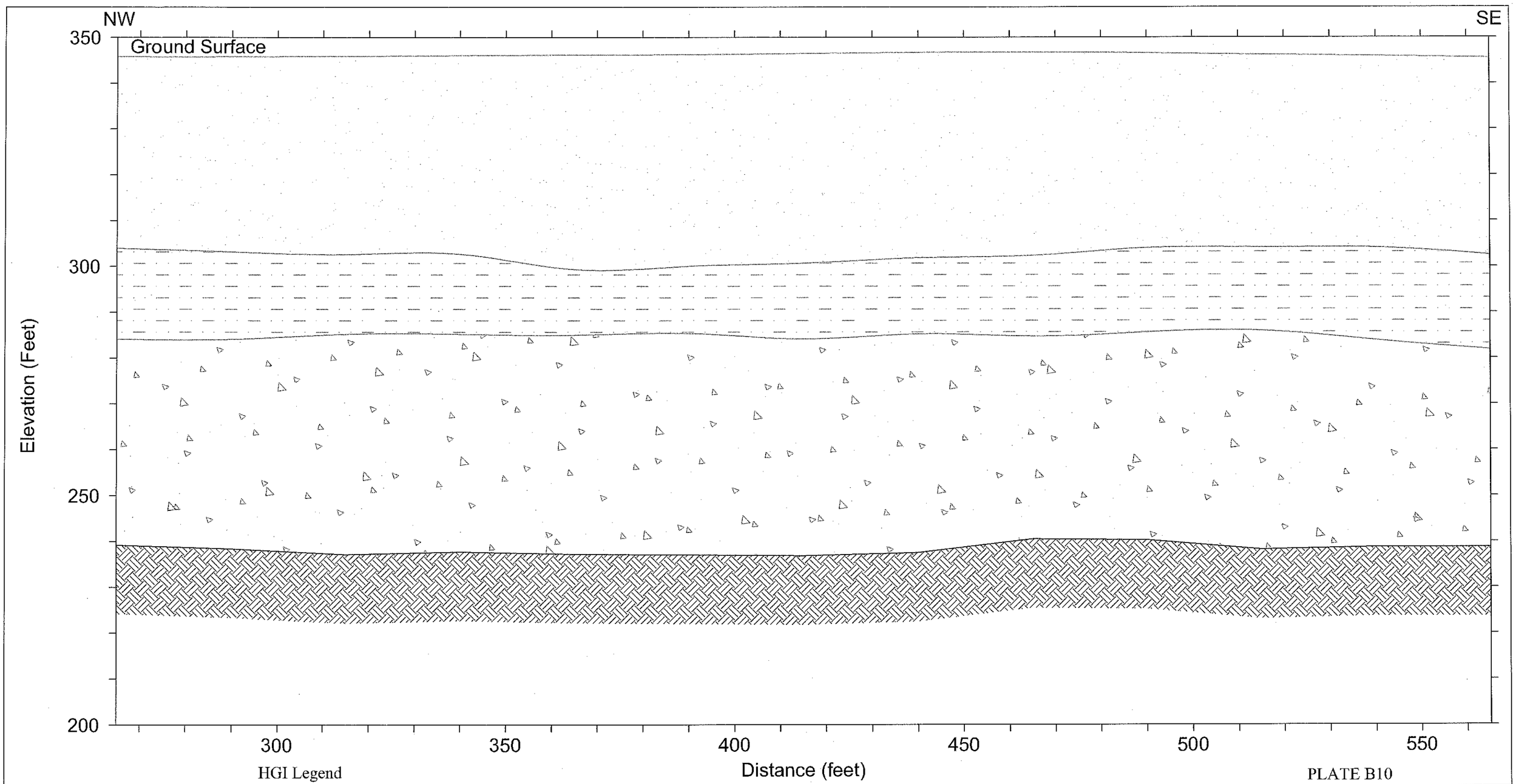
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 10
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B10

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 9
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com

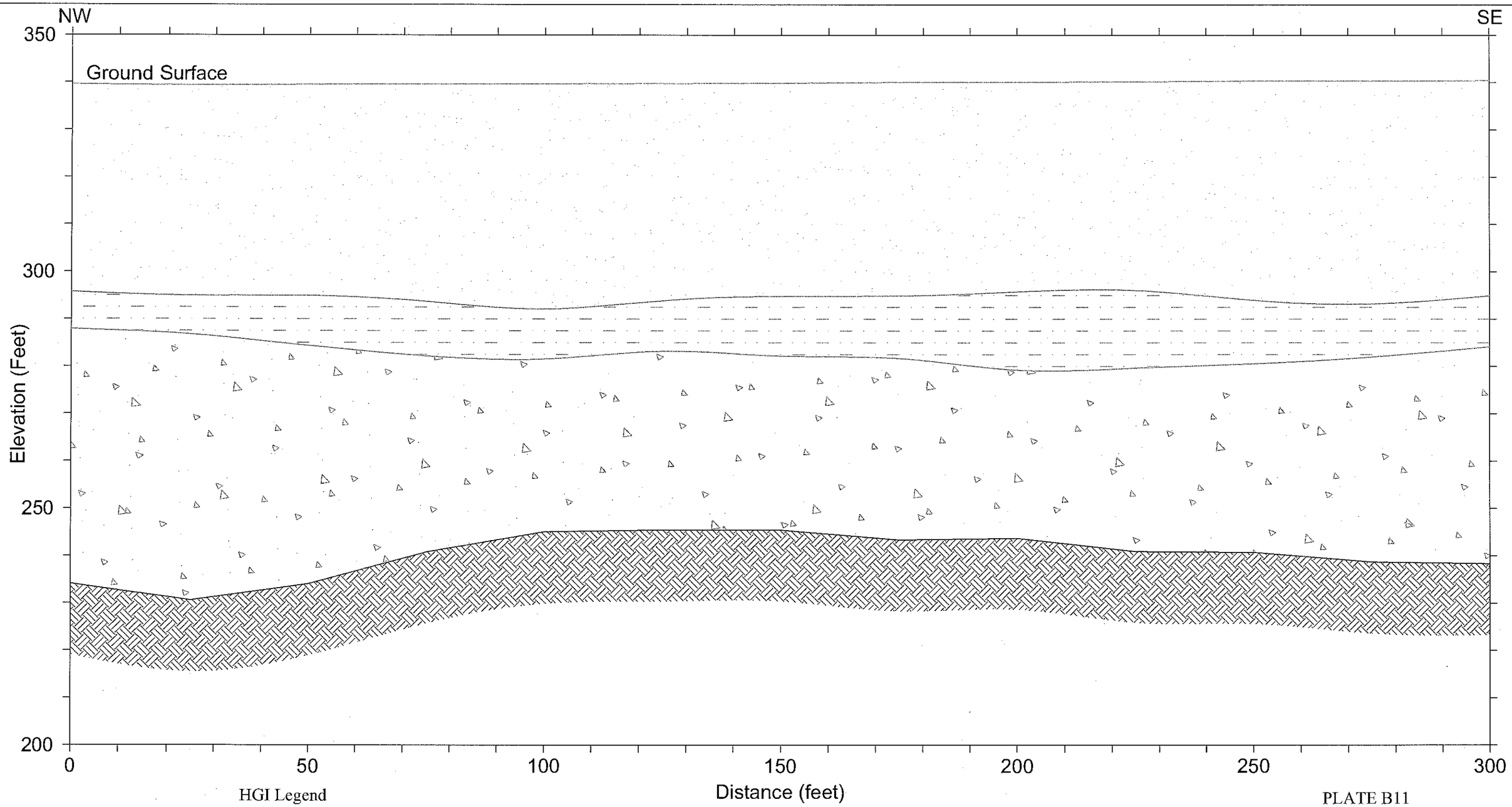


PLATE B11

HGI Legend

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

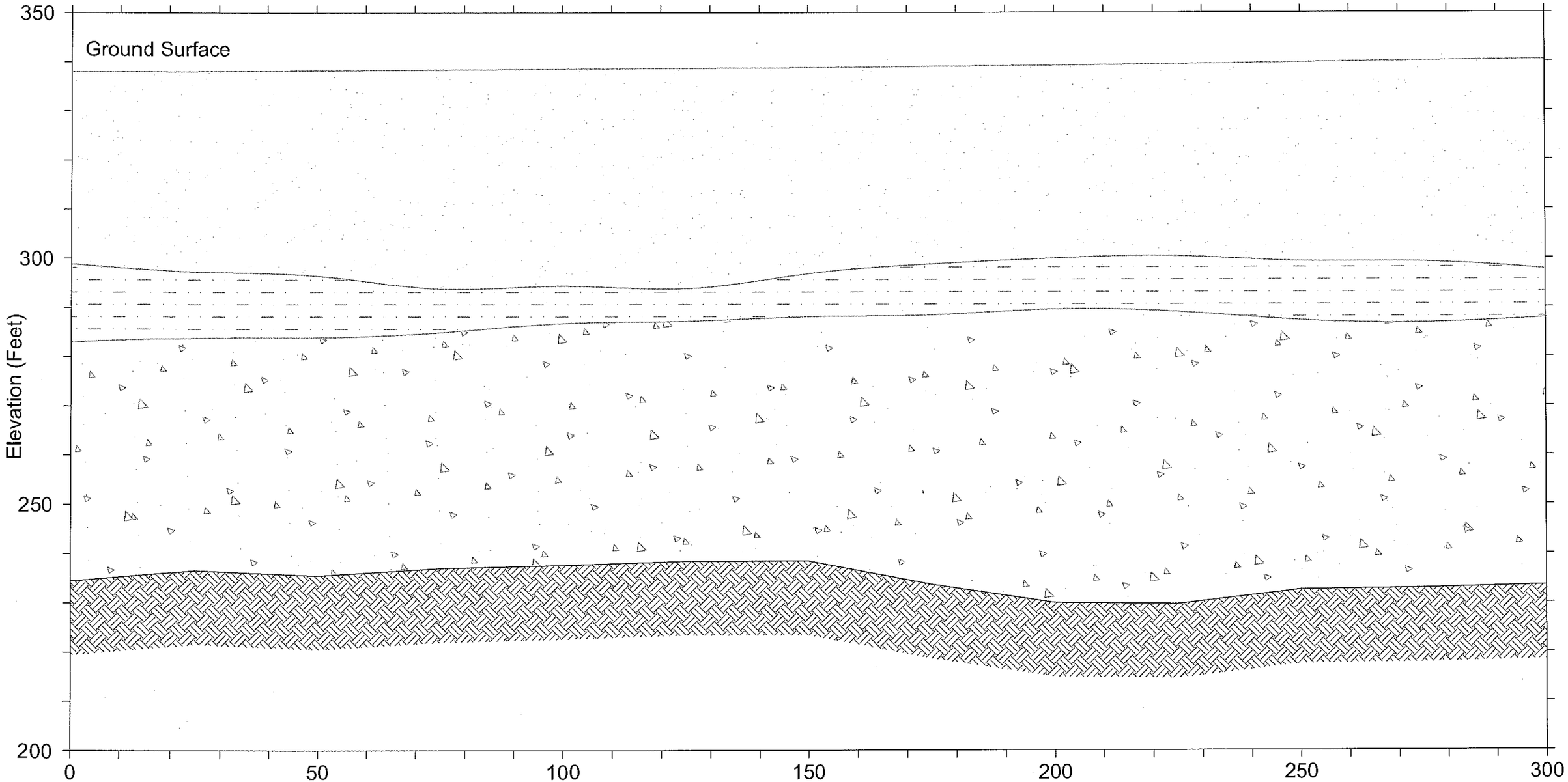
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 11
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B12

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

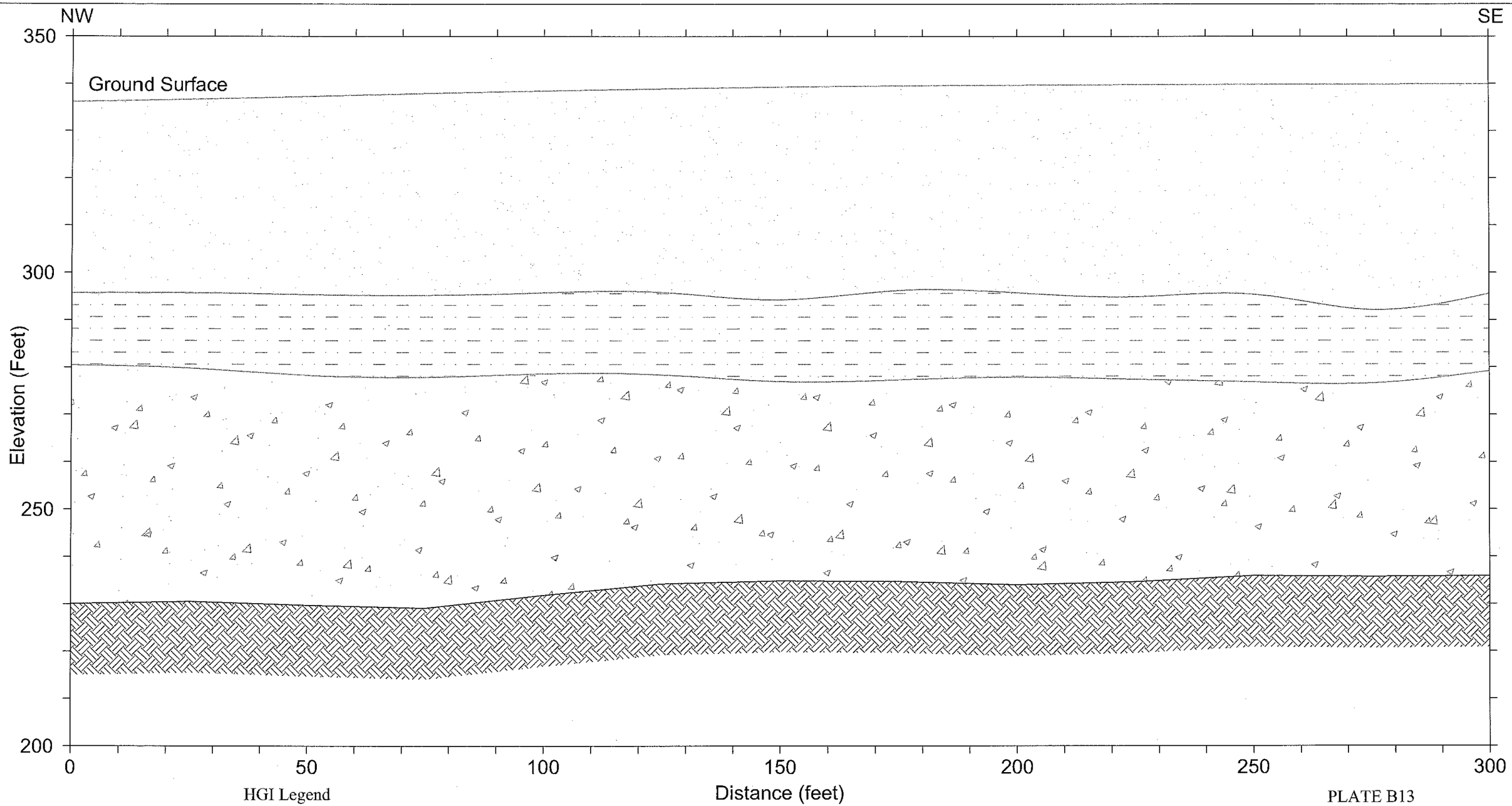
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 12
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B13

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

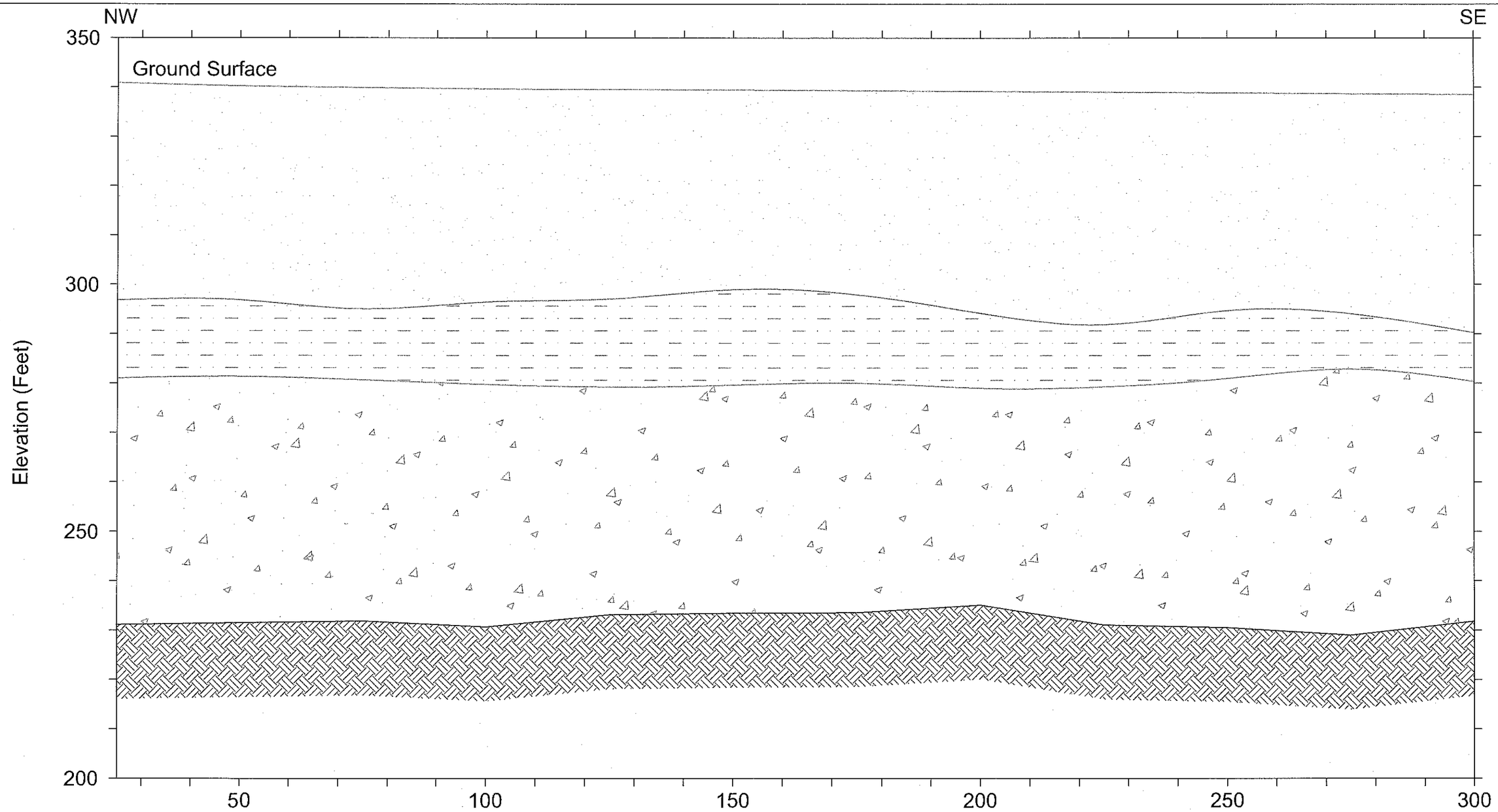
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 13
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B14

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

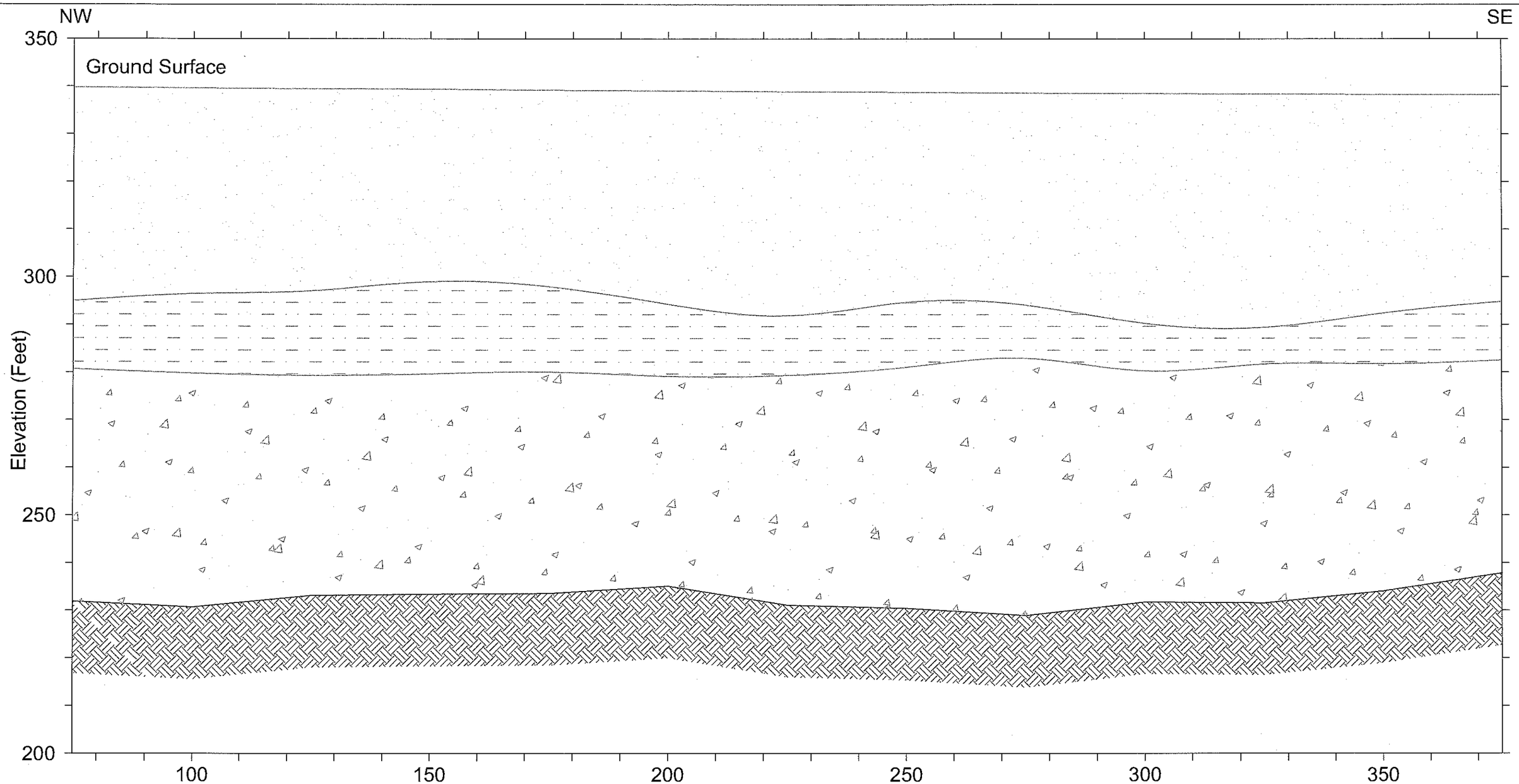
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 14-1
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B15

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

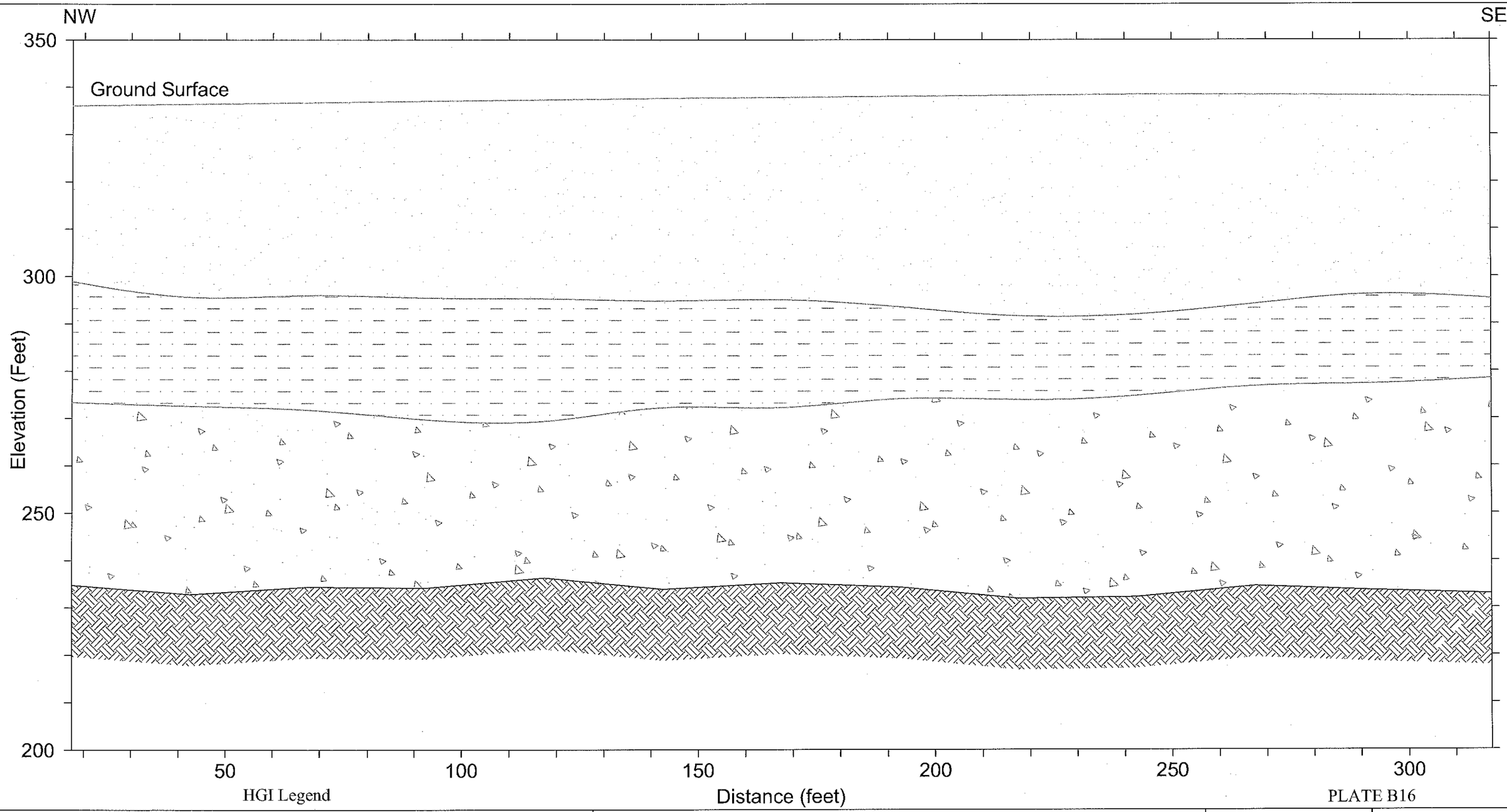
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 14-2
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B16

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

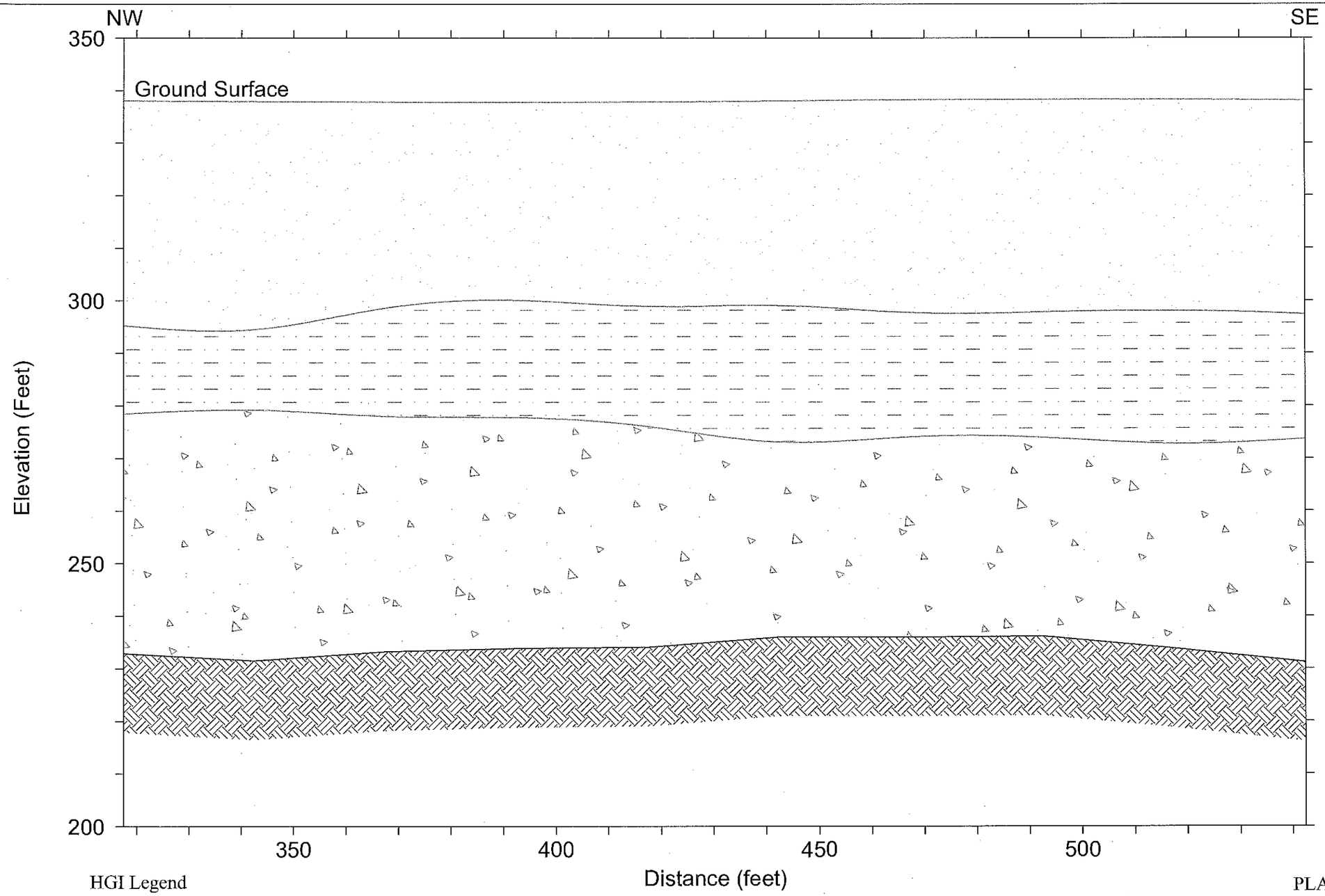
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 15-2
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B17

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

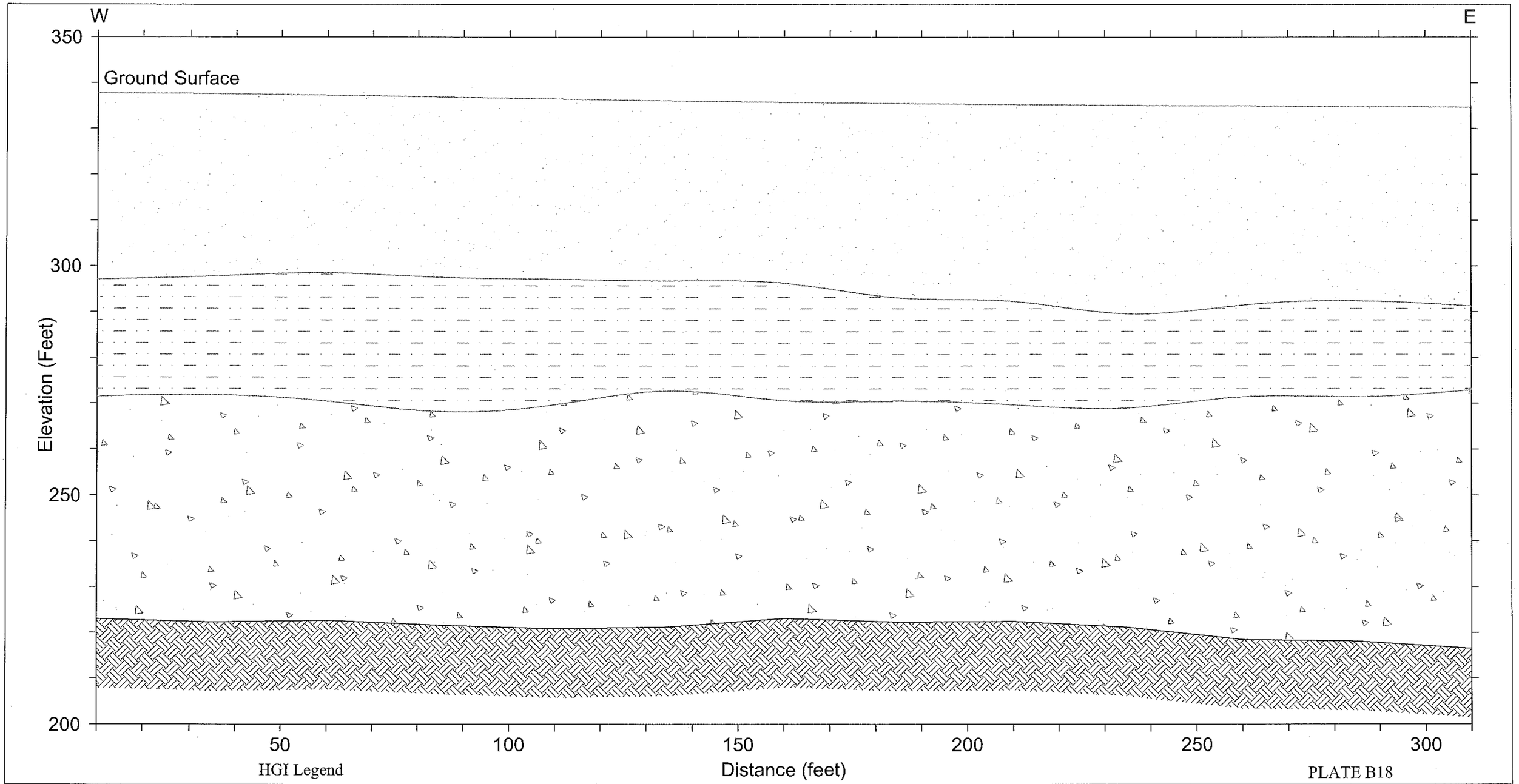
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 15-1
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B18

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

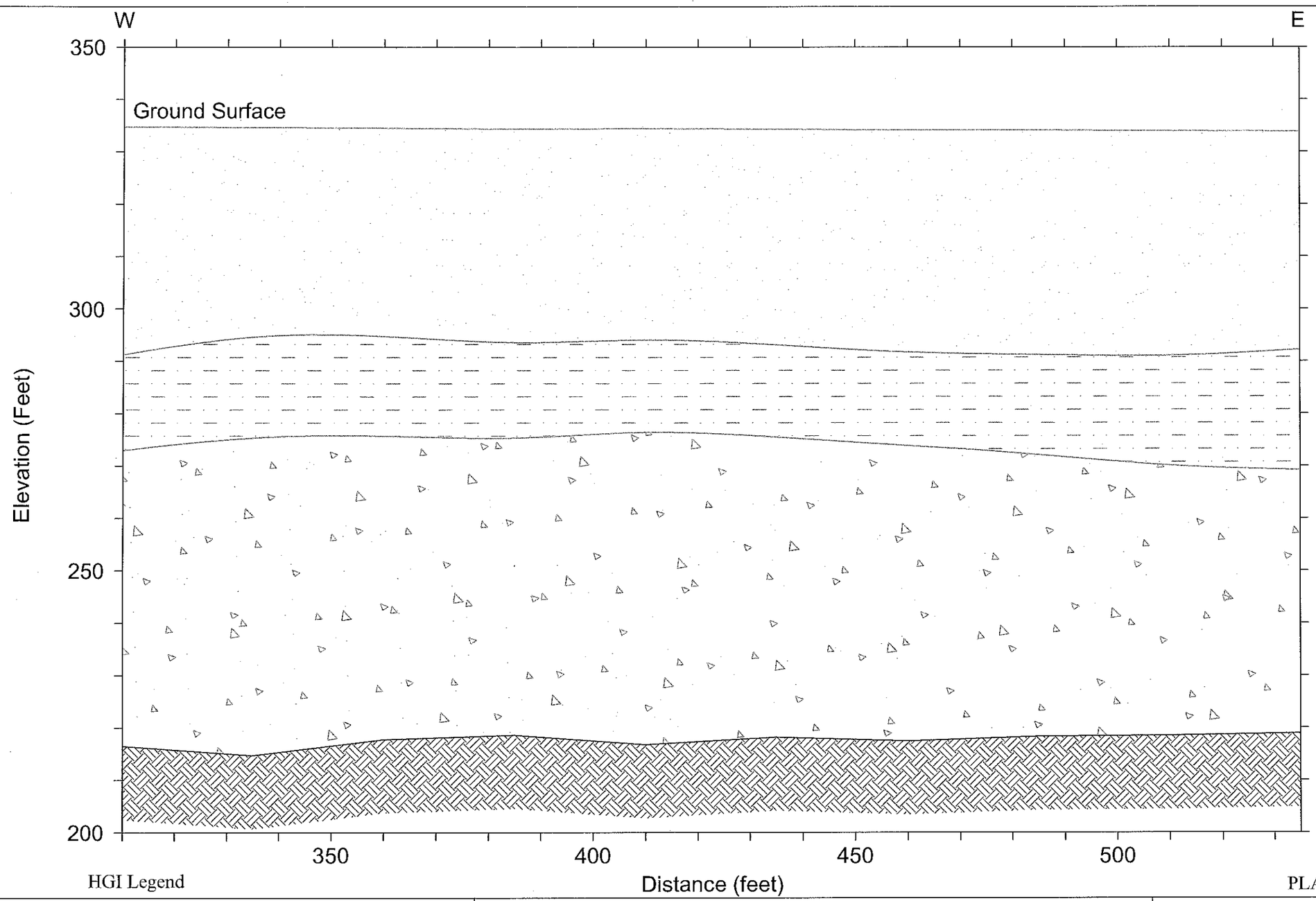
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 16-2
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B19

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

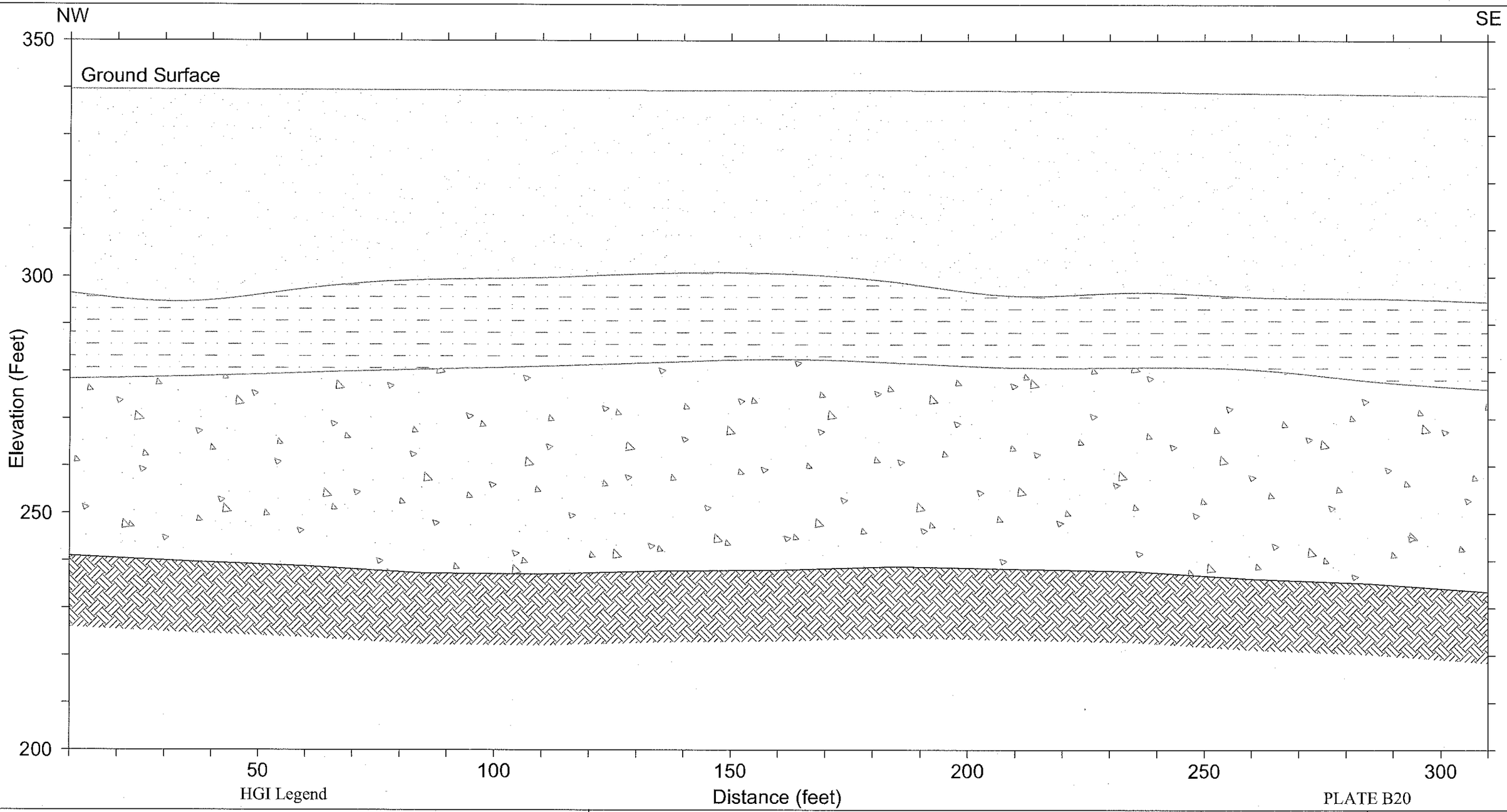
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 16-1
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B20

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

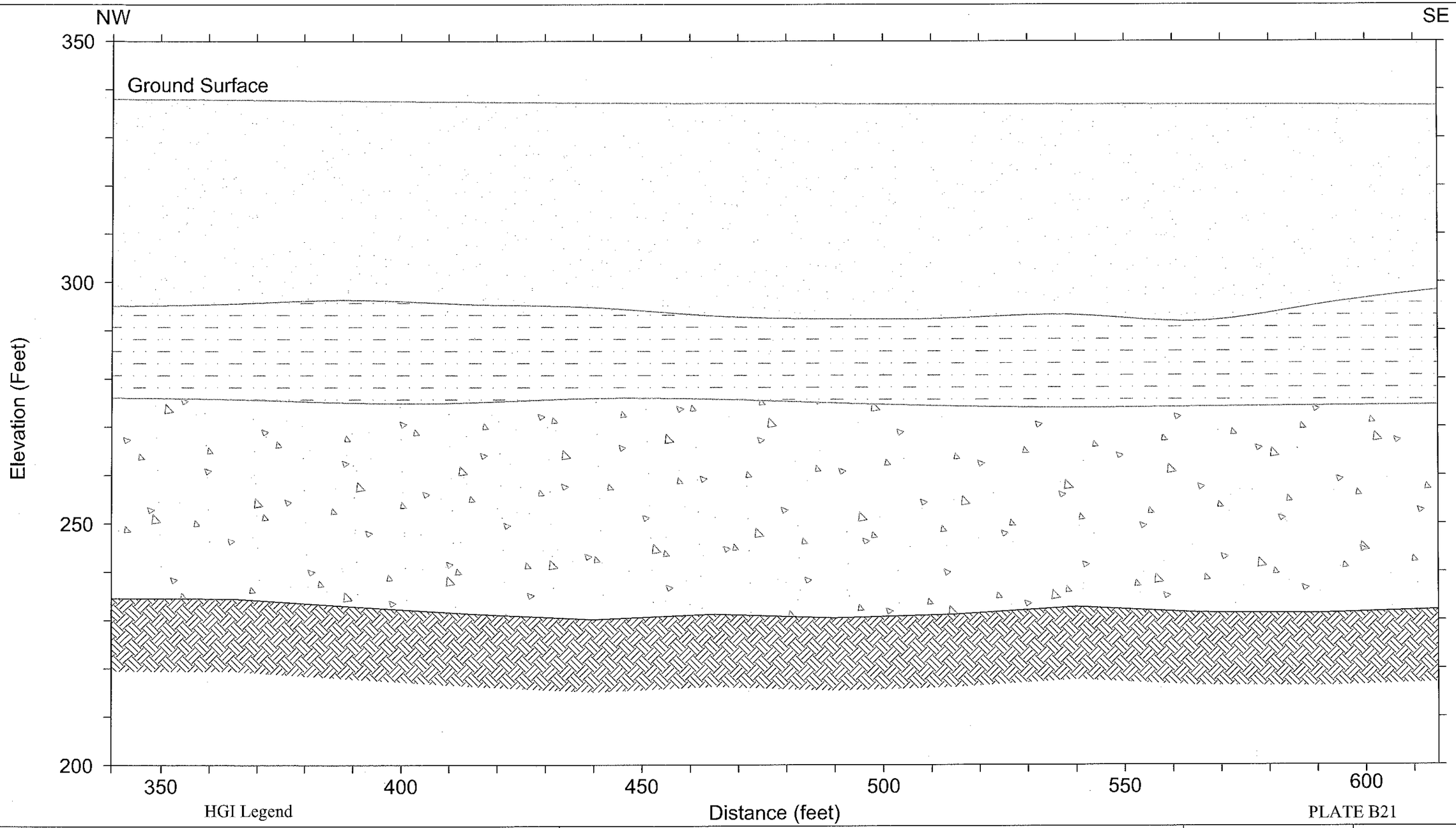
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 18
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B21

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

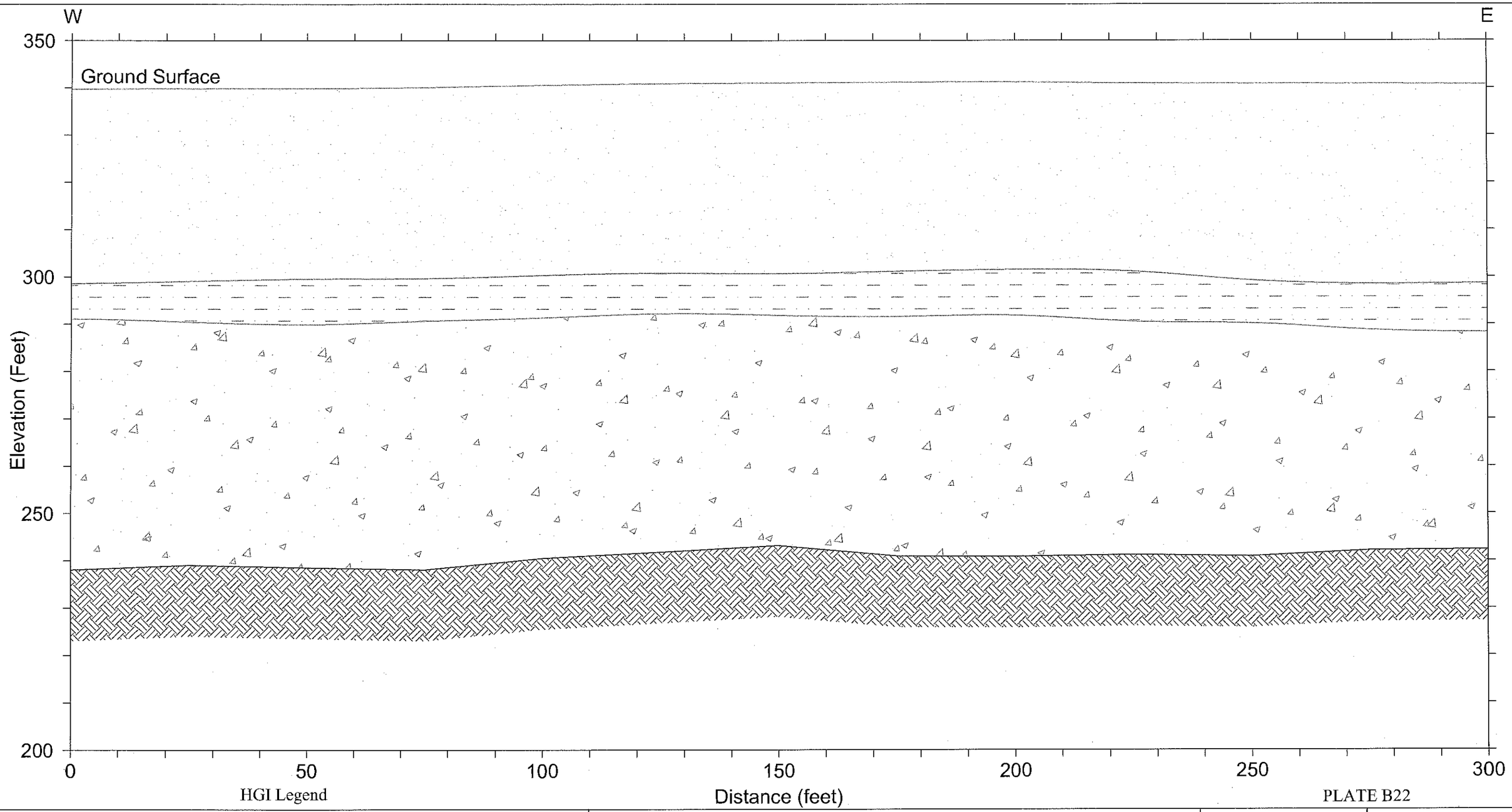
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 17
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B22

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

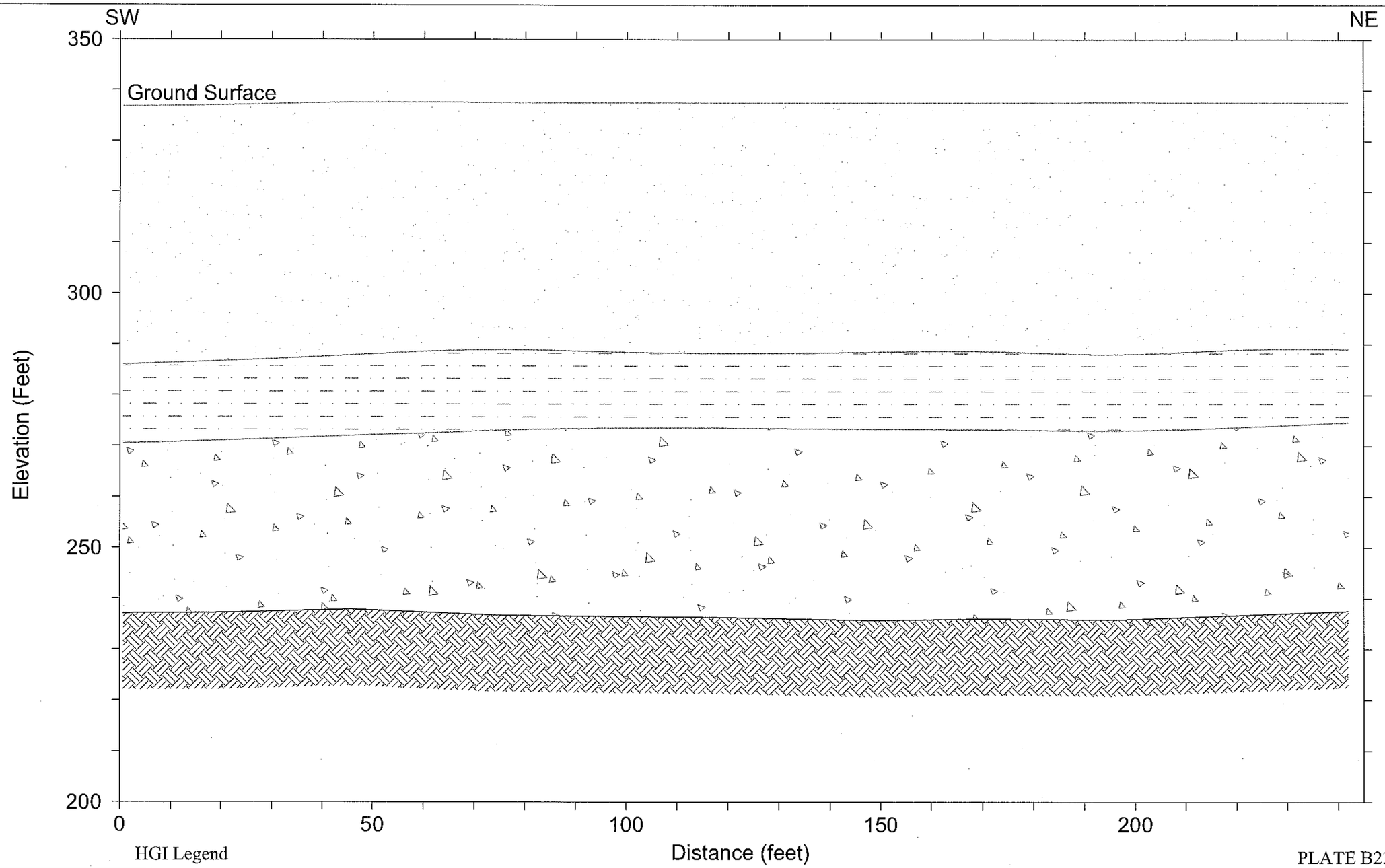
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 19
Commerce Street Cross Line
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B23

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

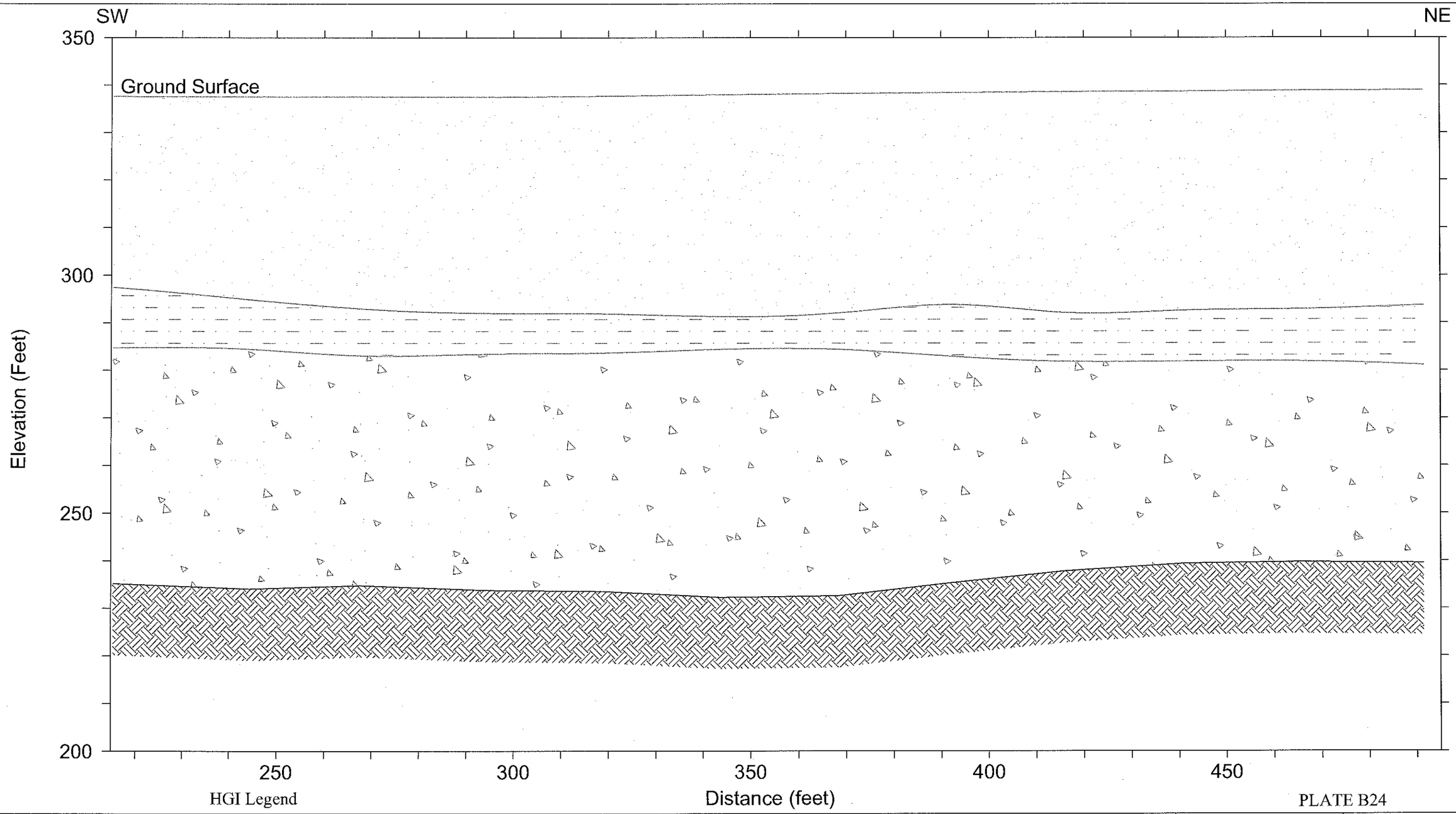
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 22
Southwest of Harvest Lane
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B24

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

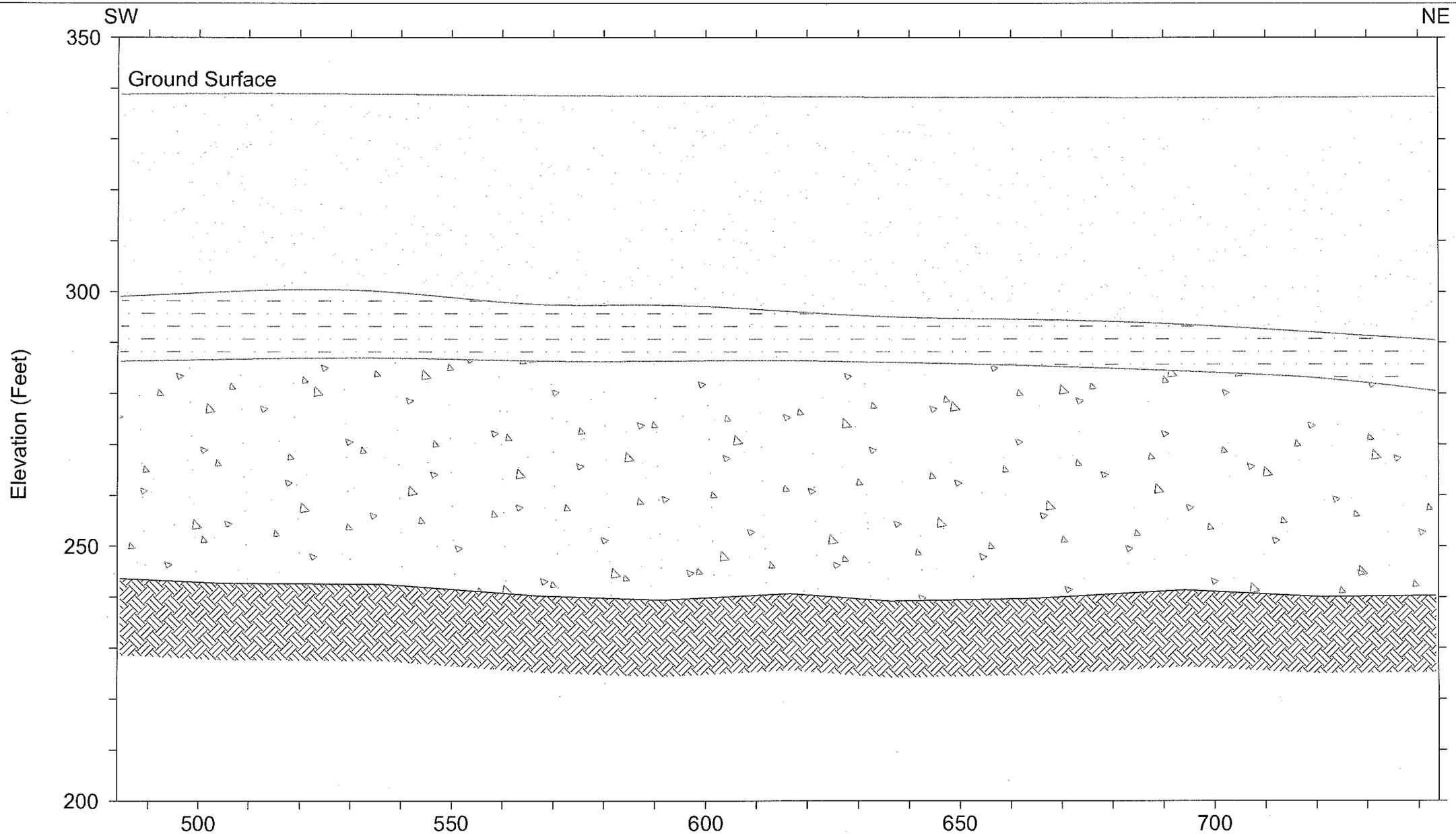
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 21
Southwest of Harvest Lane
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B25

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

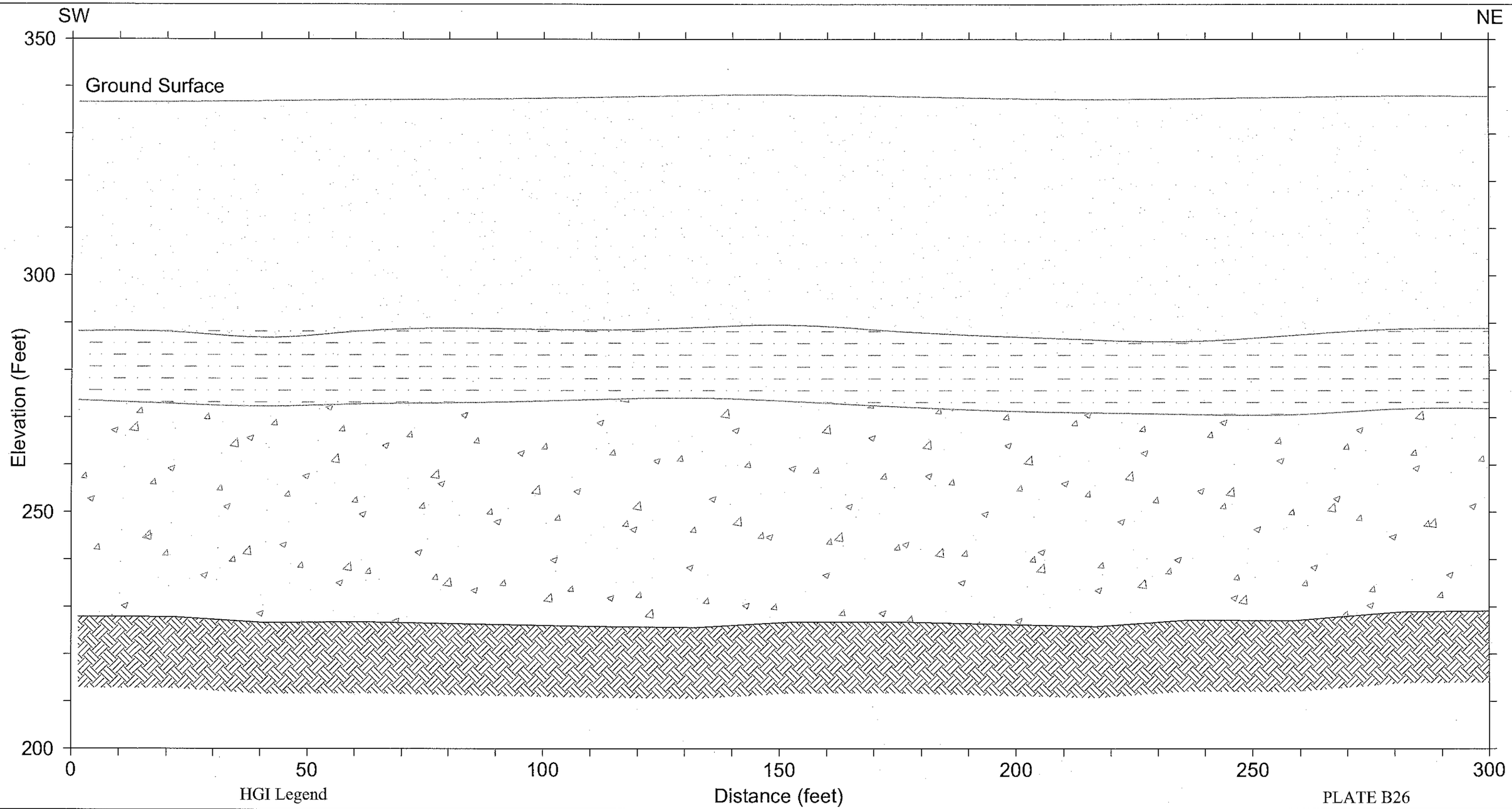
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 20
Southwest of Harvest Lane
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B26

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

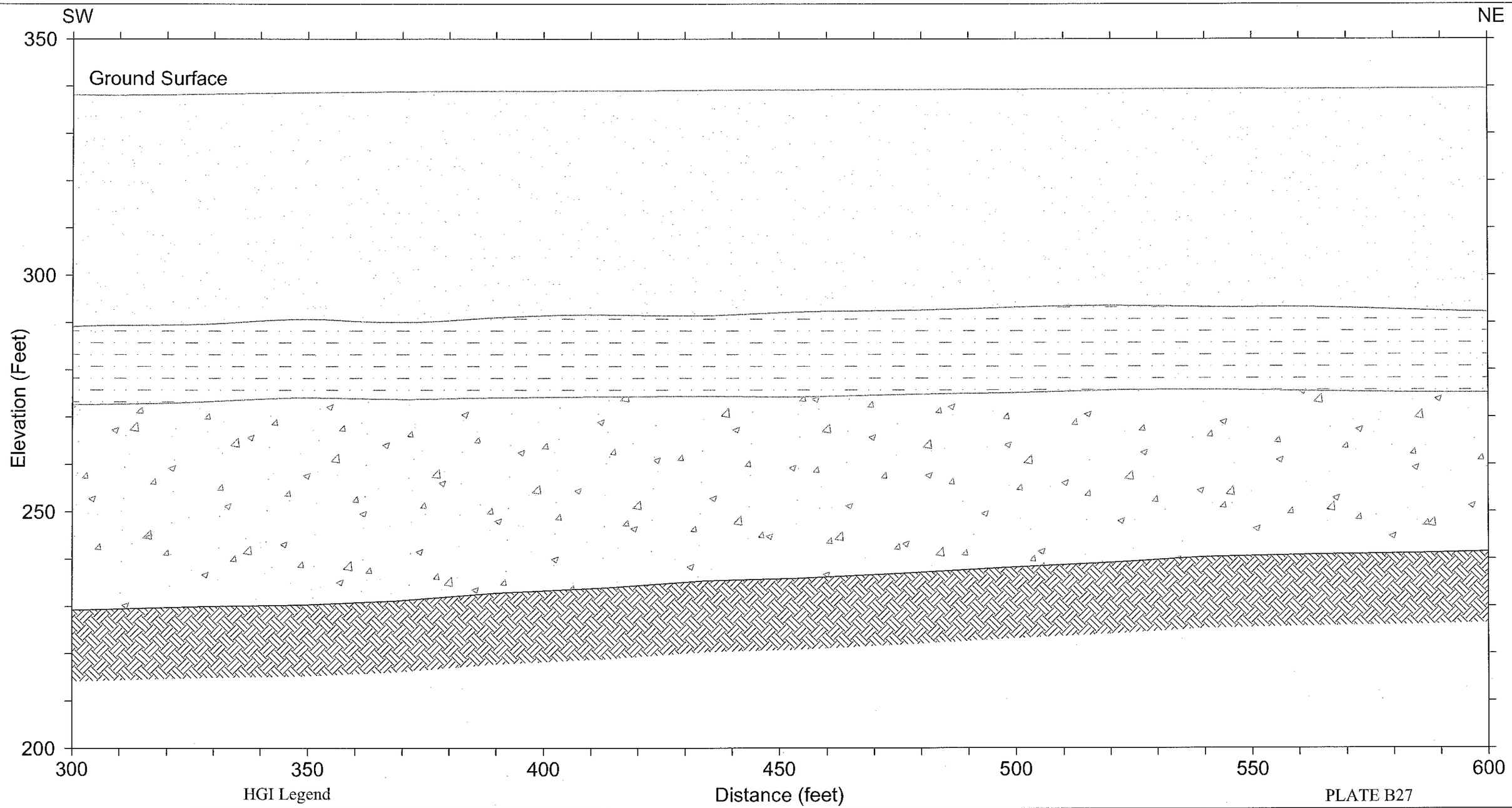
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 23-1
Kirby Lane
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B27

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

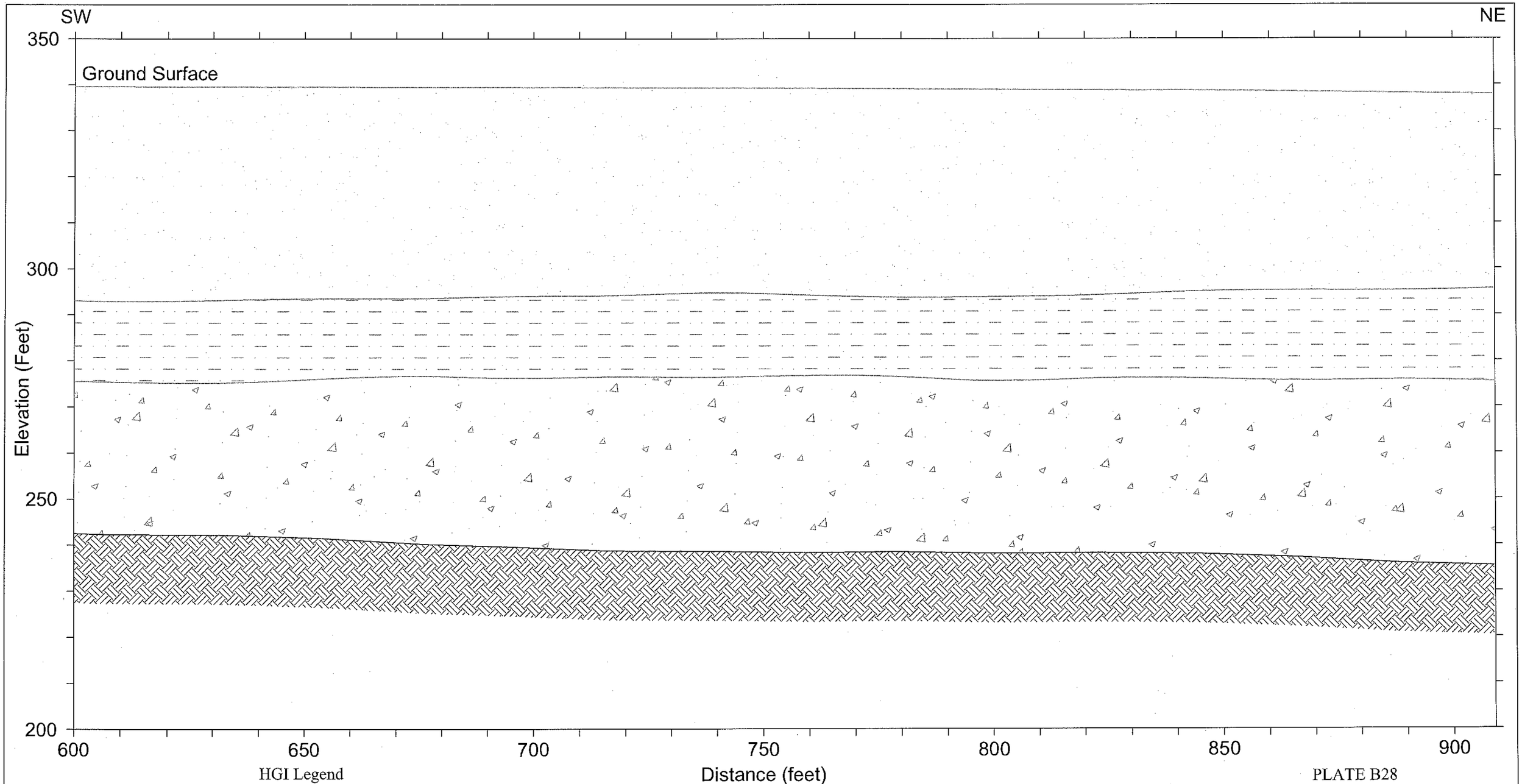
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 23-2
Kirby Lane
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B28

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

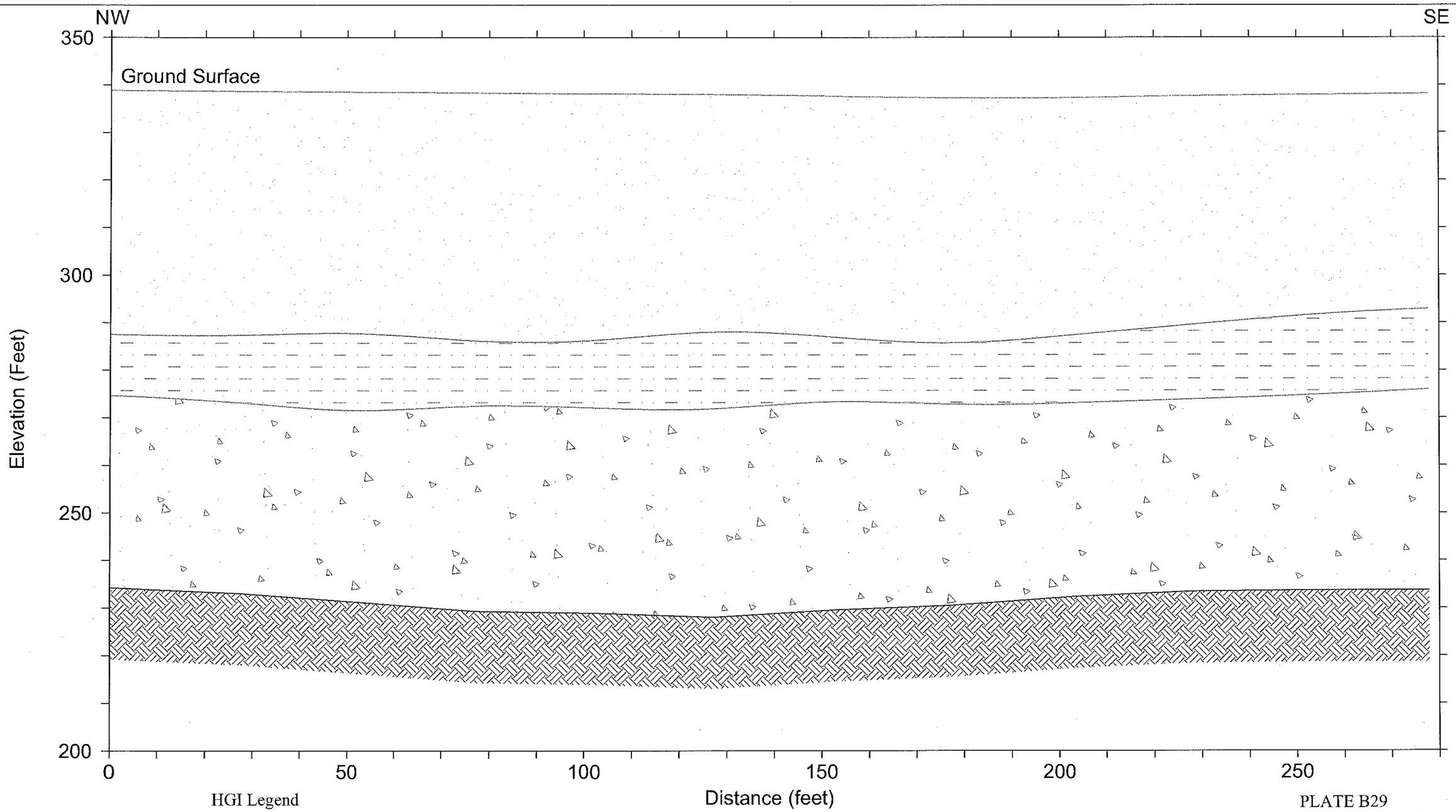
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 23-3
Kirby Lane
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B29

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 25
Kirby Lane
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com

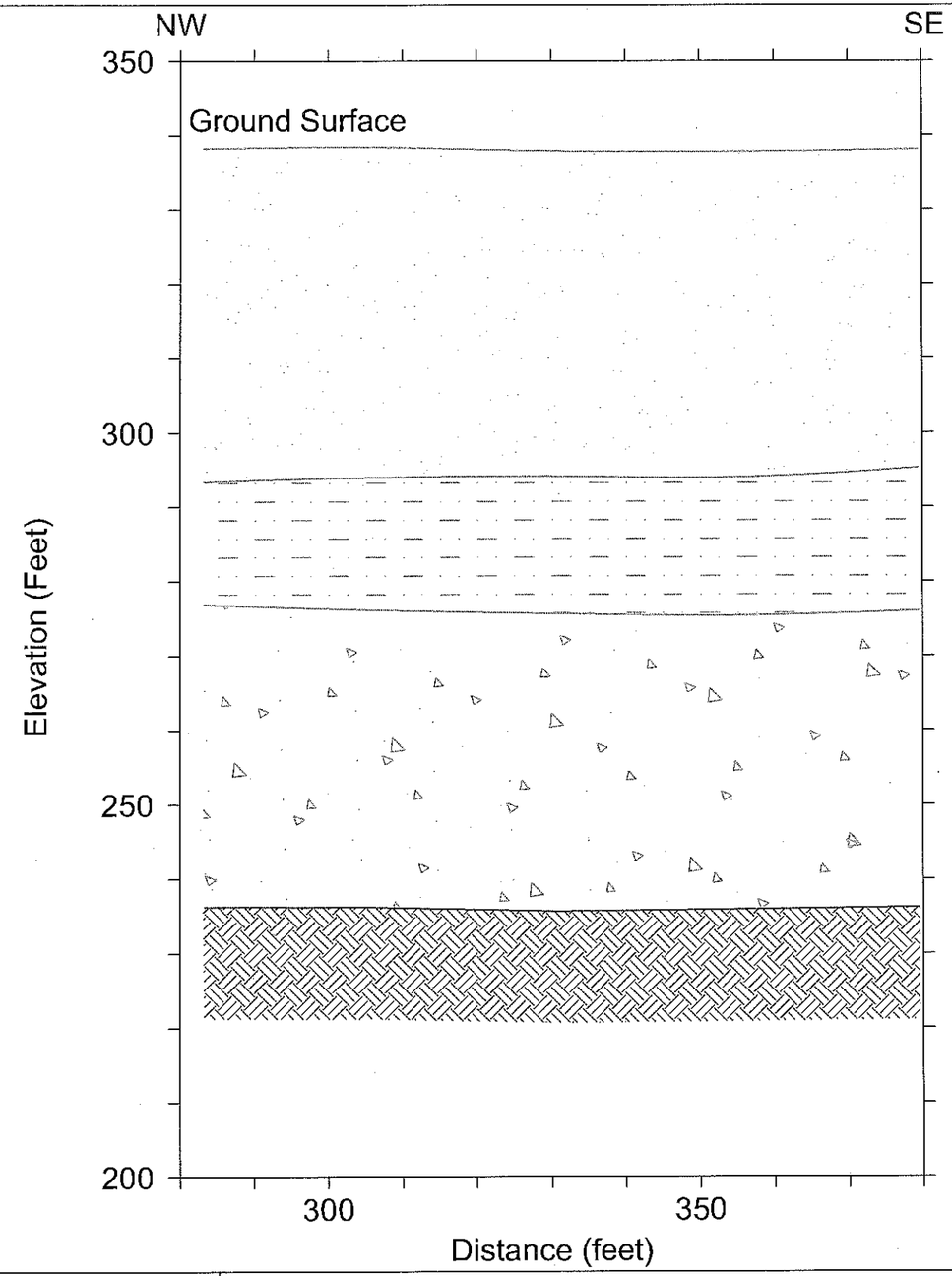


PLATE B30

HGI Legend

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

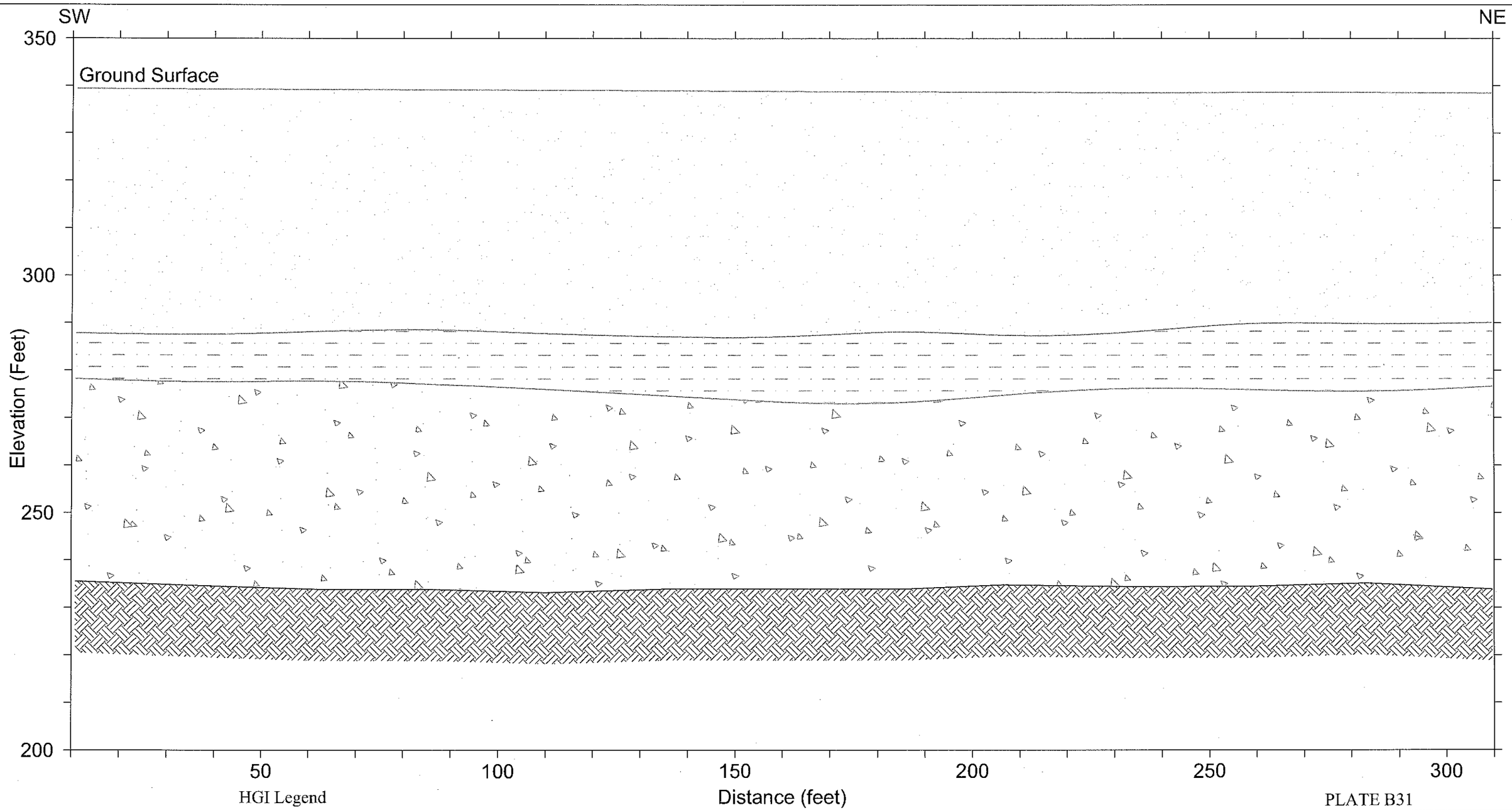
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 24
Kirby Lane
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B31

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

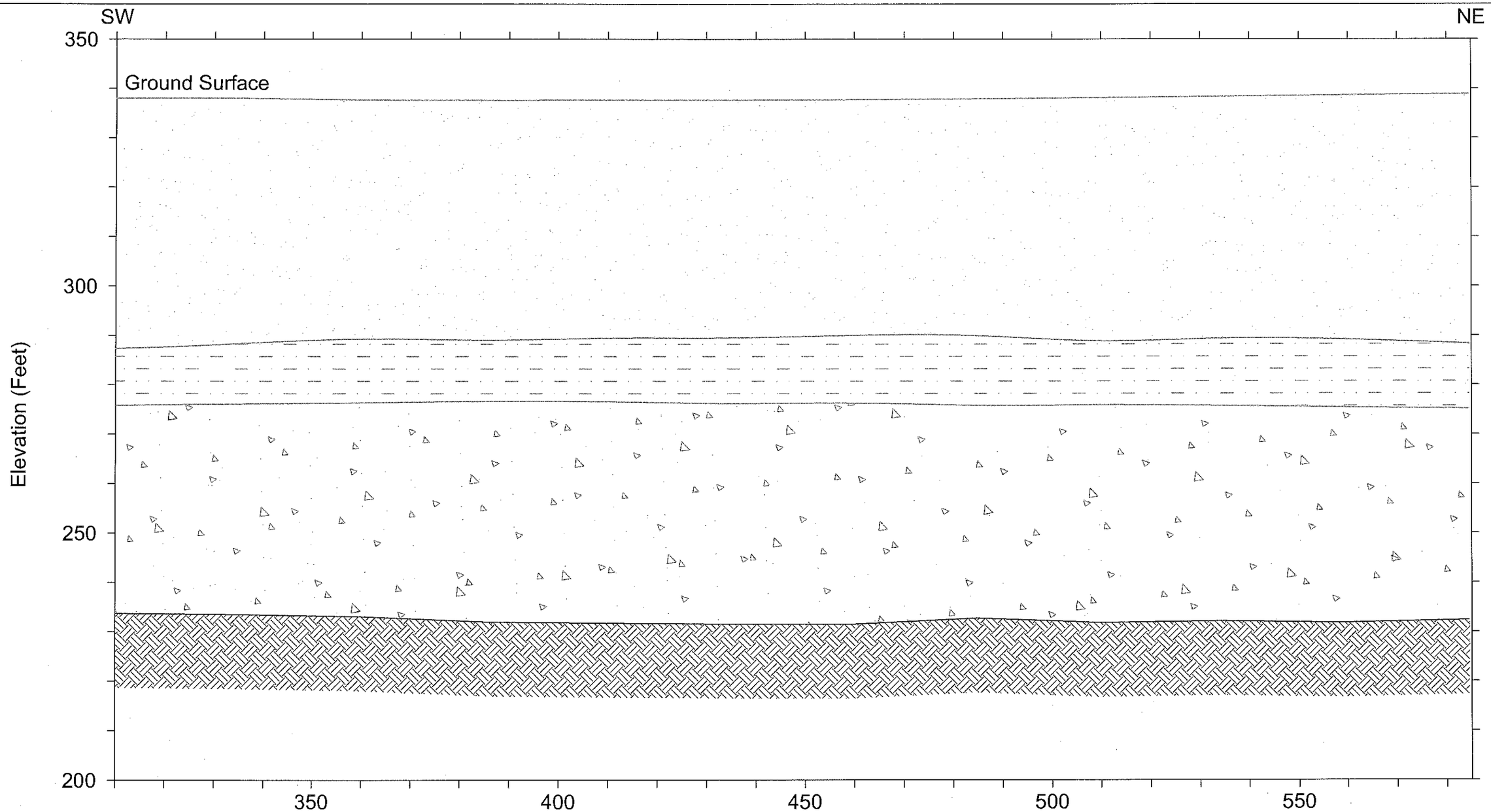
Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 26-2
South Brownell Road
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com



HGI Legend

PLATE B32

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 26-1
South Brownell Road
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com

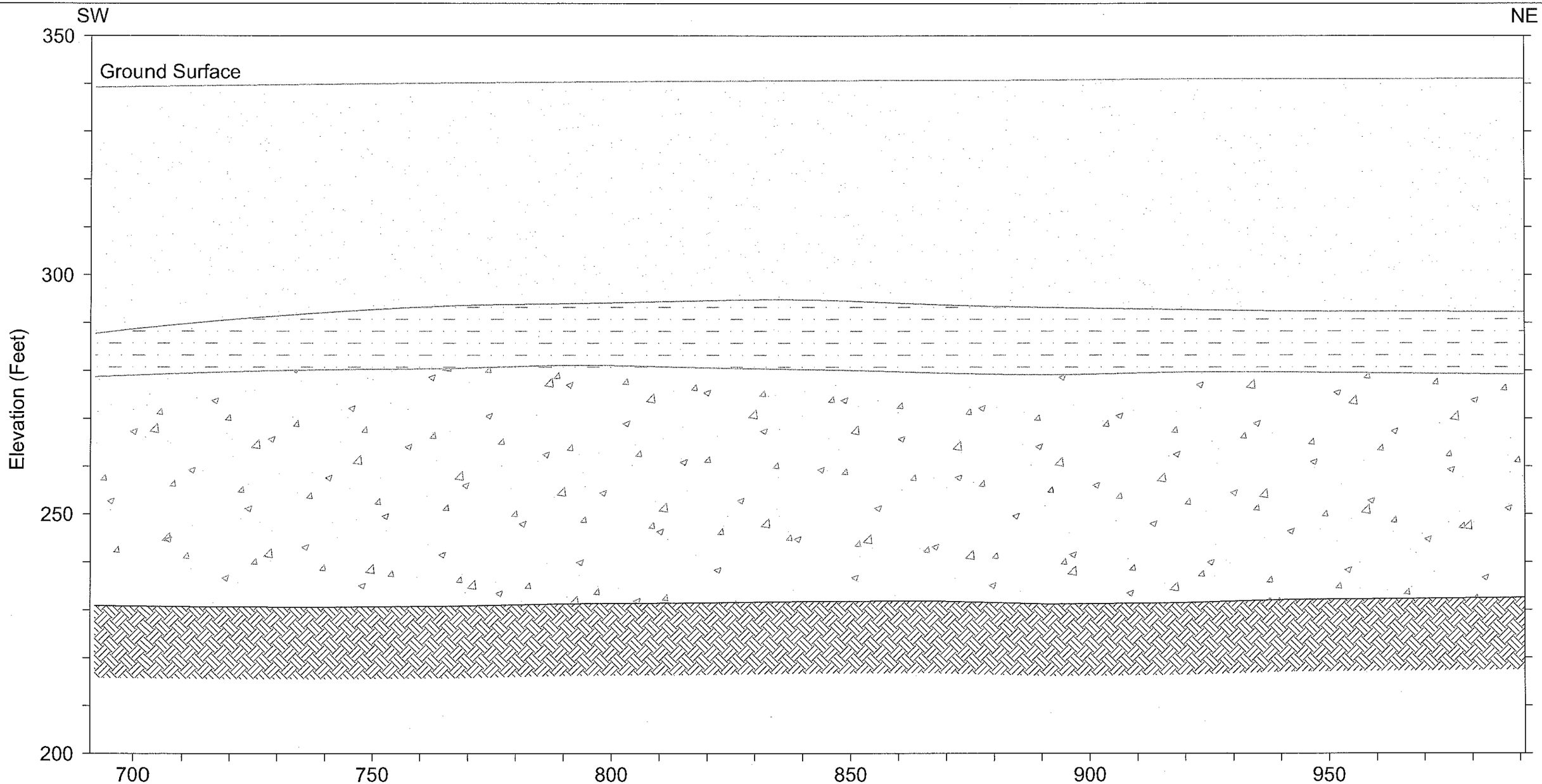


PLATE B33

HGI Legend

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 28-1
South Brownell Road
Commerce Street Superfund Site
Williston, VT

Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com

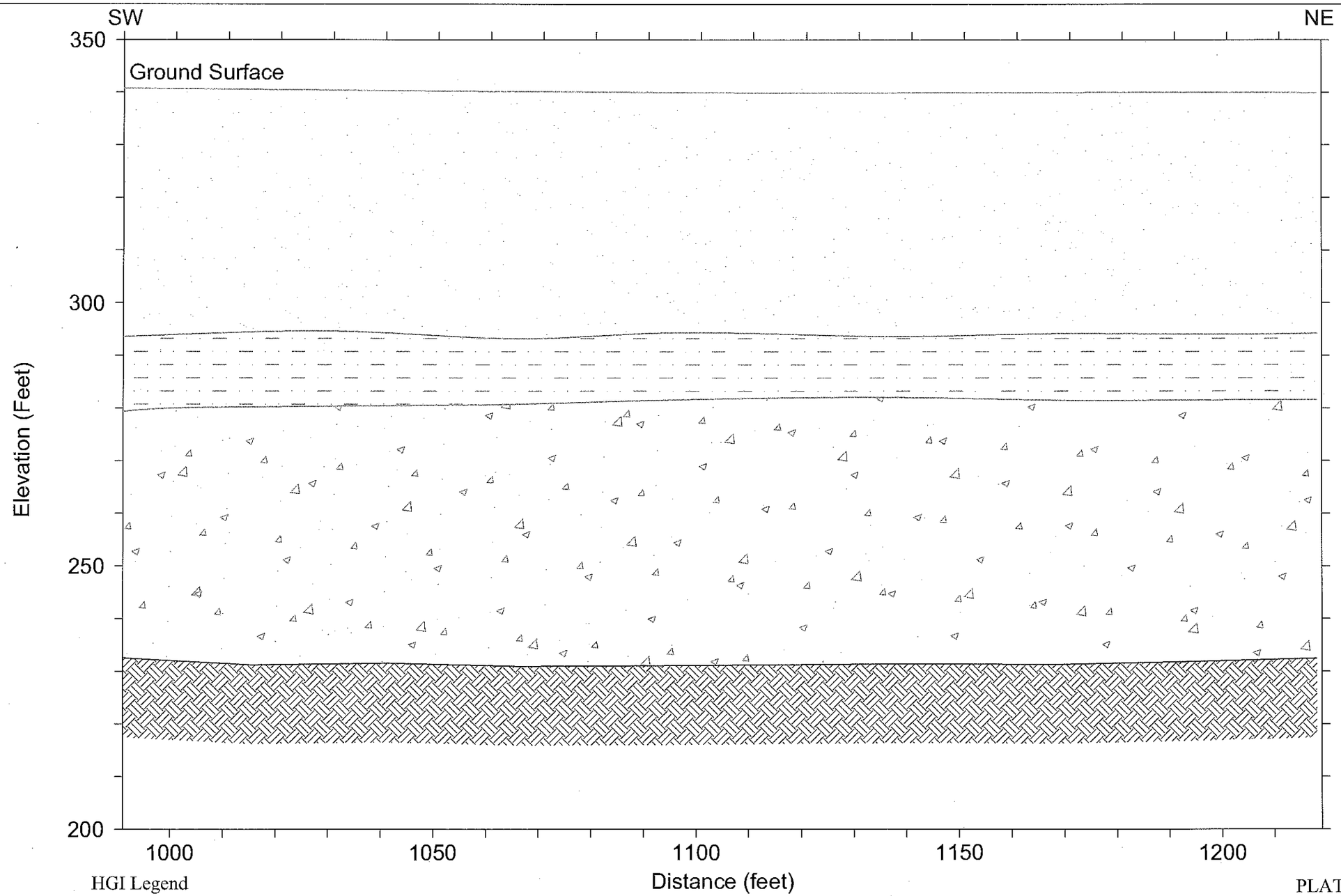


PLATE B34

HGI Legend

Undifferentiated Sediments

Till

Clay

Bedrock

0 5 10 20 40

Scale in Feet

V.E. = 1

AUGUST 2010	FILE NO. 2010036

GPR Cross Section
Line 28-2
South Brownell Road
Commerce Street Superfund Site
Williston, VT

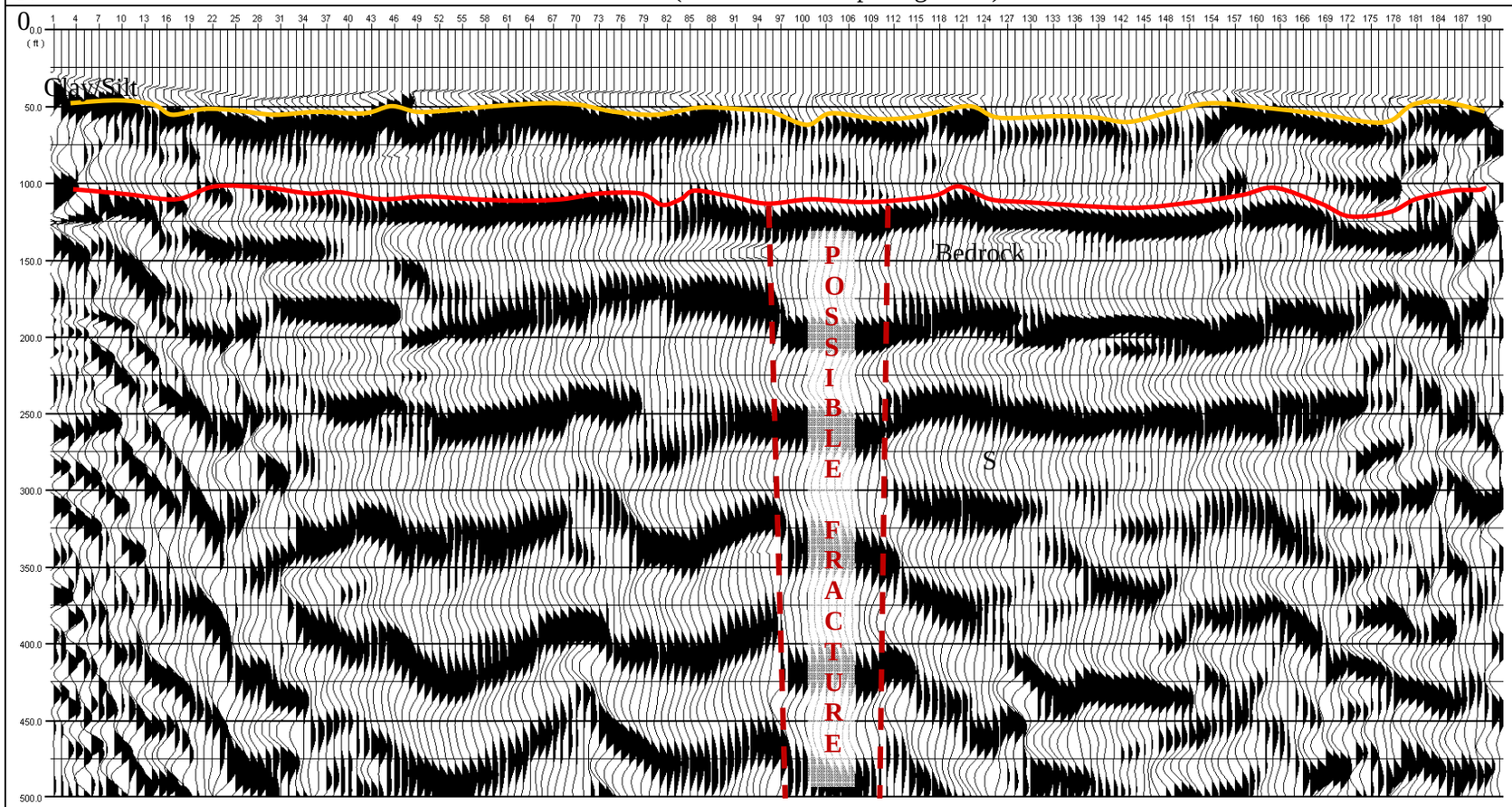
Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781)-935-8111 hgi@hagergeoscience.com

APPENDIX C. REFLECTION PROFILES

"Till"

Figure C-1
LINE 100 CDP Stack
Distance (feet-CDP trace spacing = 5 ft)

N



Hager GeoScience, Incorporated
596 Main St.- Woburn, MA - 01801

Line: 100
Date: 6-11-10
Location: Williston, Vt
Client: Nobis

FIELD PARAMETERS

INSTRUMENTS: Geode	**RECORD LENGTH:** 1000ms
POLARITY: Positive	**SAMPLE:** 0.125
SOURCE: BSG-PEG	**S.P. OFFSET:** 5 ft In-Line
S.P. INTERVAL: 5 ft	**GEOPHONES:** 48
CABLE: 48 Channel	**SPREAD LENGTH:** 470 feet
G.P. INTERVAL: **10 feet**	**# OF SPREADS:** One roll
AQUISITION FILTER: OUT	**NOTCH: OUT**

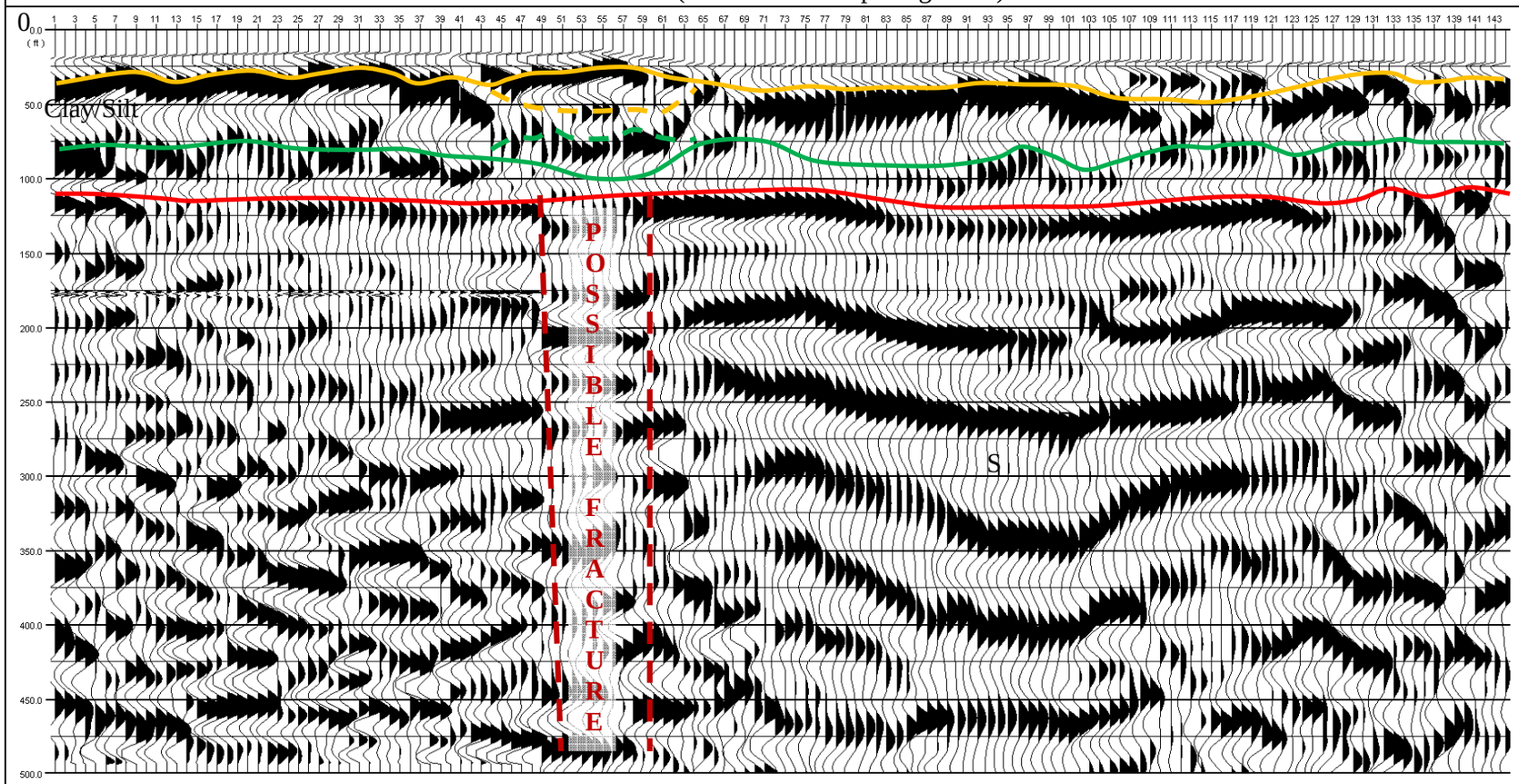
PROCESSING SEQUENCE

1. FREQUENCY FILTER: BP 50-140 Hz
2. PRE-STACK F/K FILTER: Yes
3. TRACE EDIT:
4. FIRST ARRIVAL MUTE: Top Mute
5. DECONVOLUTION: None
6. CDP SORT: Yes
7. APPLICATION OF DATUM STATISCICS:
DATUM= 0 VEL= Semblance File
8. NMO CORRECTION
9. SURFACE CONSISTENT AUTO RESIDUAL STASTICS
10. FINAL NMO CORRECTION
11. TRIM STATISTICS
12. CDP STACK; FOLD= 24 Max.
13. POST STACK F/K FILTER:
14. MIGRATION
15. FREQUENCY FILTER BP 50-120 Hz
16. TRACE SCALING: RMS and AGC

"Till"

Bedrock

Figure C-2
LINE 200 CDP Stack
Distance (feet-CDP trace spacing = 5 ft)



Hager GeoScience, Incorporated
596 Main St.- Woburn, MA - 01801

Line: 200
Date: 6-14-10
Location: Williston, Vt
Client: Nobis

FIELD PARAMETERS

INSTRUMENTS: Geode	**RECORD LENGTH:** 1000ms
POLARITY: Positive	**SAMPLE:** 0.125
SOURCE: BSG-PEG	**S.P. OFFSET:** 5 ft In-Line
S.P. INTERVAL: 5 ft	**GEOPHONES:** 48
CABLE: 48 Channel	**SPREAD LENGTH:** 470 feet
G.P. INTERVAL: **10 feet**	**# OF SPREADS:** One roll
AQUISITION FILTER: OUT	**NOTCH: OUT**

PROCESSING SEQUENCE

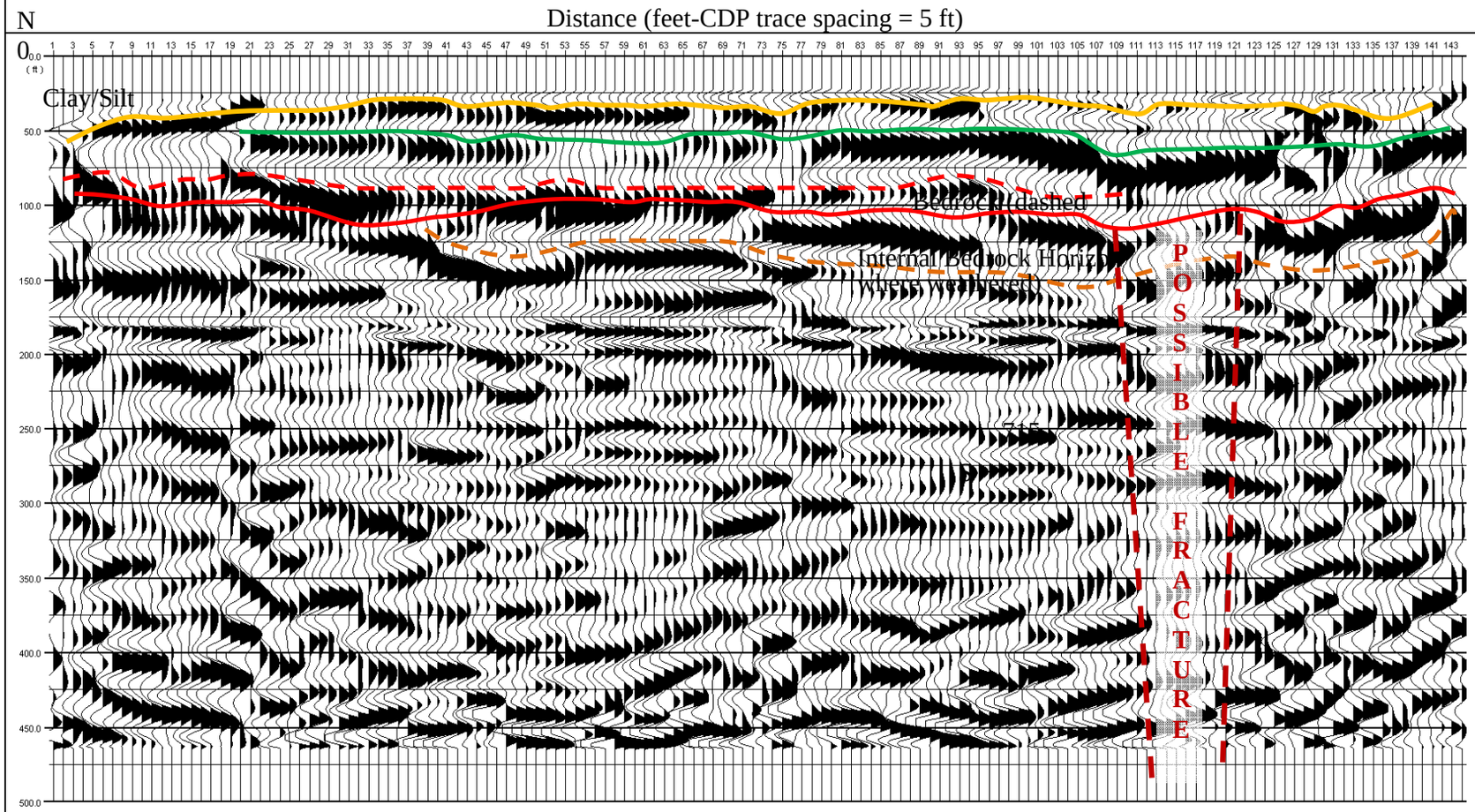
1. FREQUENCY FILTER: BP 50-140 Hz
2. PRE-STACK F/K FILTER: Yes
3. TRACE EDIT:
4. FIRST ARRIVAL MUTE: Top Mute
5. DECONVOLUTION: De-spiking
6. CDP SORT: Yes
7. APPLICATION OF DATUM STATISCICS:
DATUM= 0 VEL= Semblance File
8. NMO CORRECTION
9. SURFACE CONSISTENT AUTO RESIDUAL STASTICS
10. FINAL NMO CORRECTION
11. TRIM STATISTICS
12. CDP STACK; FOLD= 24 Max.
13. POST STACK F/K FILTER:
14. MIGRATION
15. FREQUENCY FILTER BP 50-120 Hz
16. TRACE SCALING: RMS and AGC

Hager GeoScience, Incorporated
596 Main St.- Woburn, MA - 01801

Line: 300
Date: 6-15-10
Location: Williston, Vt
Client: Nobis

"Till"

Figure C-3
LINE 300 CDP Stack
Distance (feet-CDP trace spacing = 5 ft)



FIELD PARAMETERS

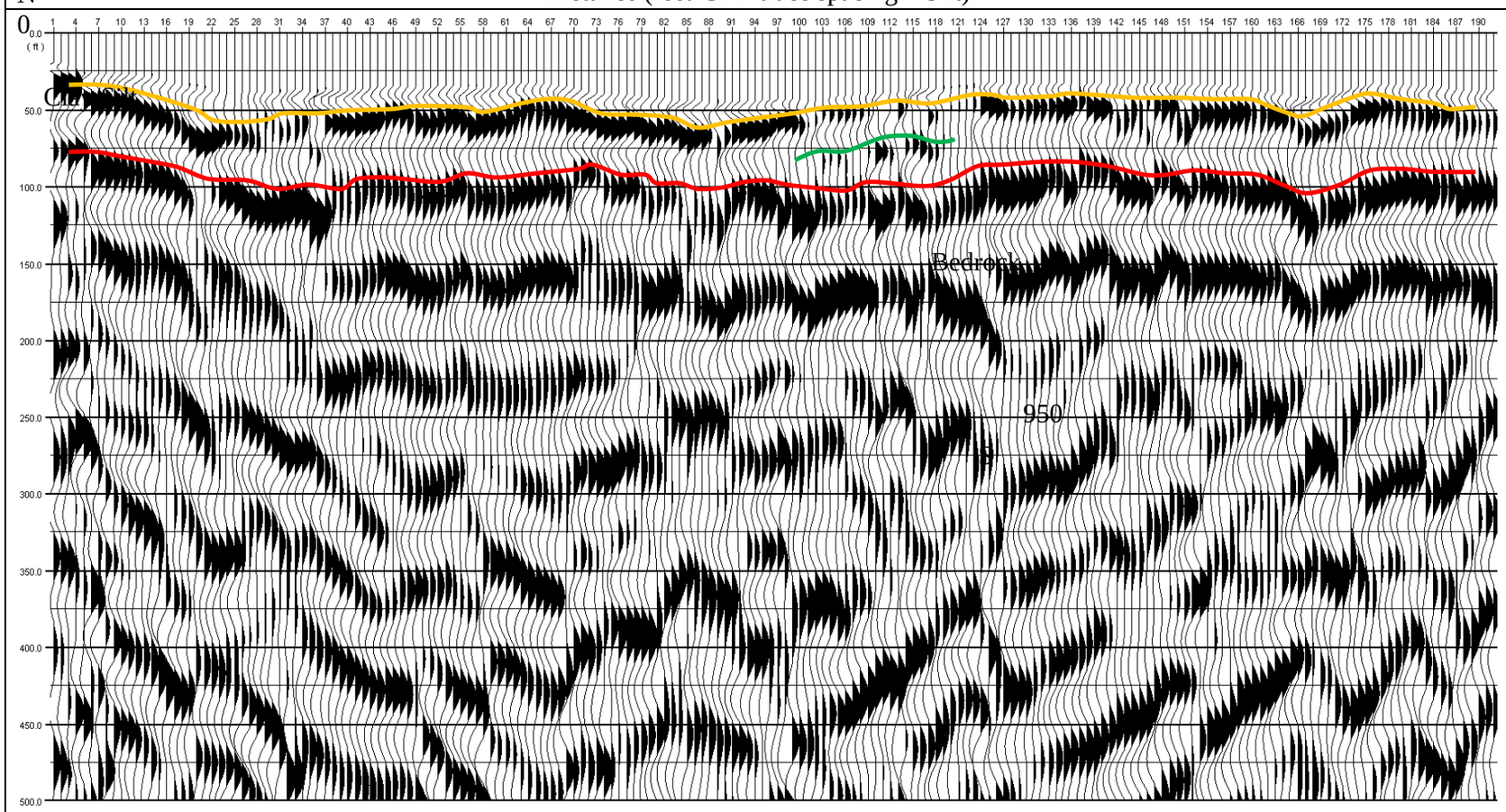
INSTRUMENTS: Geode	**RECORD LENGTH:** 1000ms
POLARITY: Positive	**SAMPLE:** 0.125
SOURCE: BSG-PEG	**S.P. OFFSET:** 5 ft In-Line
S.P. INTERVAL: 5 ft	**GEOPHONES:** 48
CABLE: 48 Channel	**SPREAD LENGTH:** 470 feet
G.P. INTERVAL: 10 feet	**# OF SPREADS:** One roll
AQUISITION FILTER: OUT	**NOTCH: OUT**

PROCESSING SEQUENCE

1. FREQUENCY FILTER: BP 50-140 Hz
2. PRE-STACK F/K FILTER: Yes
3. TRACE EDIT:
4. FIRST ARRIVAL MUTE: Top Mute
5. DECONVOLUTION: De-spiking
6. CDP SORT: Yes
7. APPLICATION OF DATUM STATISCICS:
DATUM= 0 VEL= Semblance File
8. NMO CORRECTION
9. SURFACE CONSISTENT AUTO RESIDUAL STASTICS
10. FINAL NMO CORRECTION
11. TRIM STATISTICS
12. CDP STACK; FOLD= 24 Max.
13. POST STACK F/K FILTER:
14. MIGRATION
15. FREQUENCY FILTER BP 50-120 Hz
16. TRACE SCALING: RMS and AGC

"Till"

Figure C-4
LINE 400 CDP Stack
Distance (feet-CDP trace spacing = 5 ft)



Hager GeoScience, Incorporated
596 Main St.- Woburn, MA - 01801

Line: 400
Date: 6-16-10
Location: Williston, Vt
Client: Nobis

FIELD PARAMETERS

INSTRUMENTS: Geode	**RECORD LENGTH:** 1000ms
POLARITY: Positive	**SAMPLE:** 0.125
SOURCE: BSG-PEG	**S.P. OFFSET:** 5 ft In-Line
S.P. INTERVAL: 5 ft	**GEOPHONES:** 48
CABLE: 48 Channel	**SPREAD LENGTH:** 470 feet
G.P. INTERVAL: **10 feet**	**# OF SPREADS:** One roll
AQUISITION FILTER: OUT	**NOTCH: OUT**

PROCESSING SEQUENCE

1. FREQUENCY FILTER: BP 50-140 Hz
2. PRE-STACK F/K FILTER: Yes
3. TRACE EDIT:
4. FIRST ARRIVAL MUTE: Top Mute
5. DECONVOLUTION: None
6. CDP SORT: Yes
7. APPLICATION OF DATUM STATISCICS:
DATUM= 0 VEL= Semblance File
8. NMO CORRECTION
9. SURFACE CONSISTENT AUTO RESIDUAL STASTICS
10. FINAL NMO CORRECTION
11. TRIM STATISTICS
12. CDP STACK; FOLD= 24 Max.
13. POST STACK F/K FILTER:
14. MIGRATION
15. FREQUENCY FILTER BP 50-120 Hz
16. TRACE SCALING: RMS and AGC

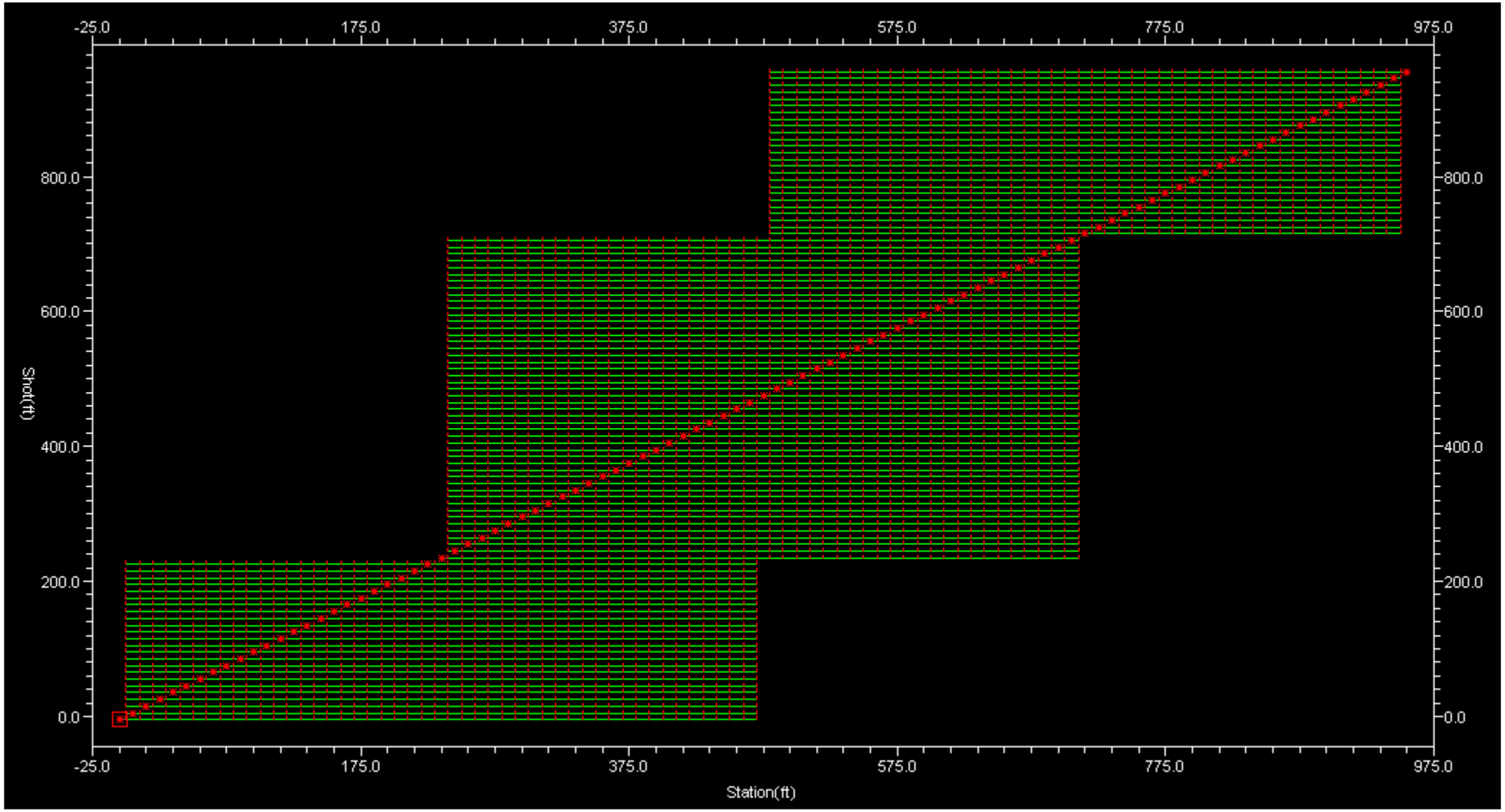


Figure C-5 Survey geometry for seismic reflection Line 100

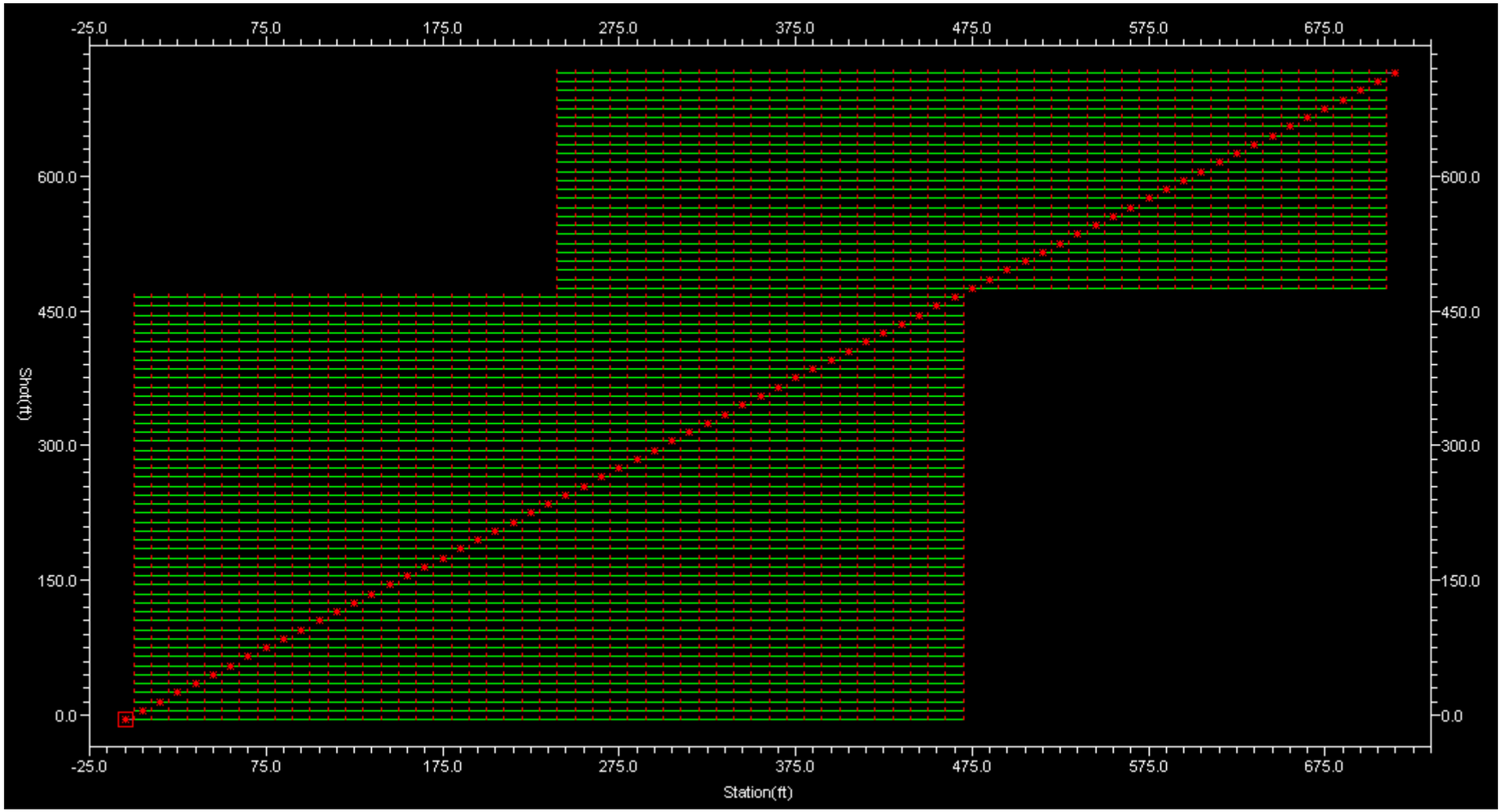


Figure C-6 Survey geometry for seismic reflection Line 200

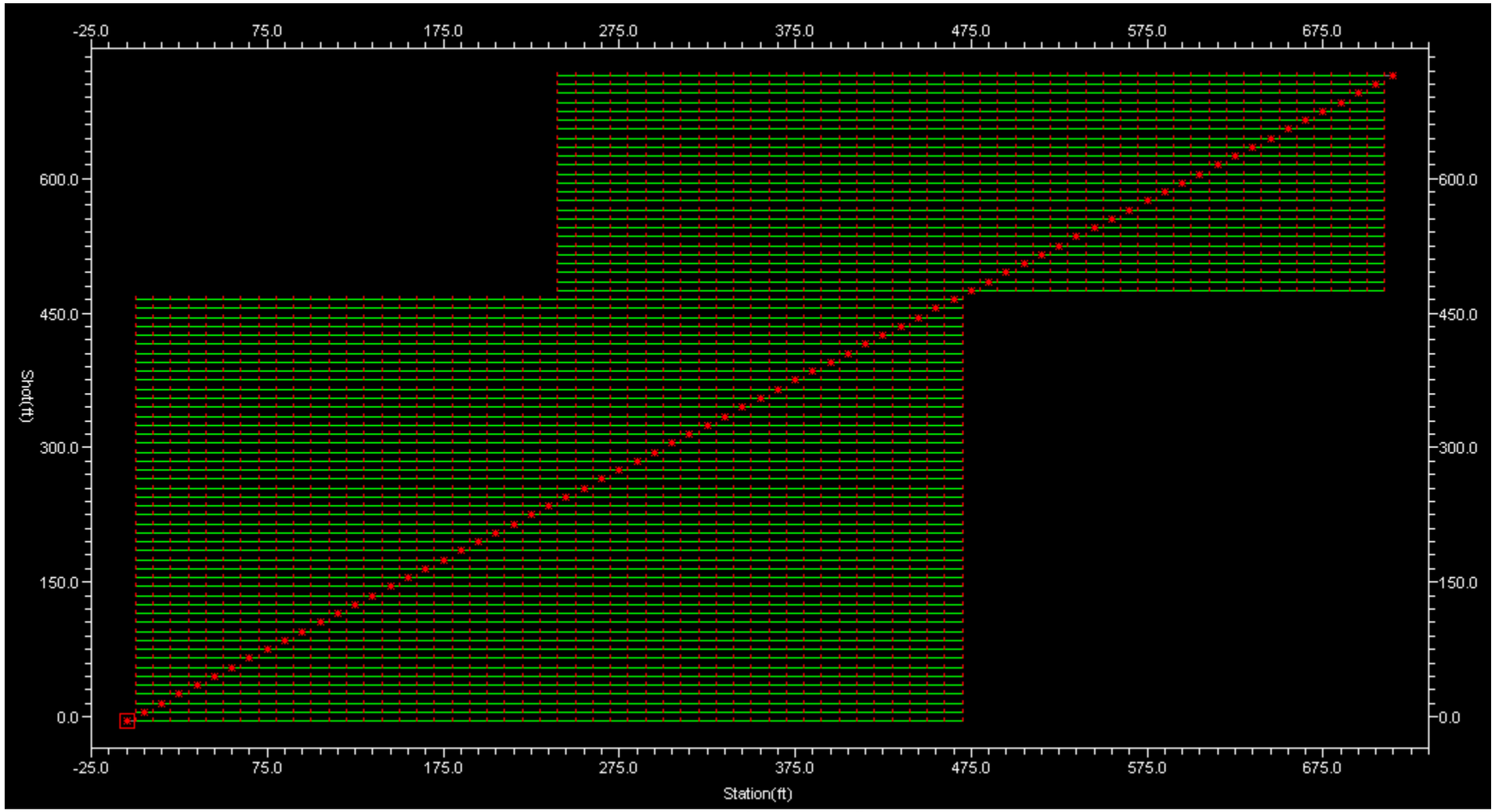


Figure C-7 Survey geometry for seismic reflection Line 300

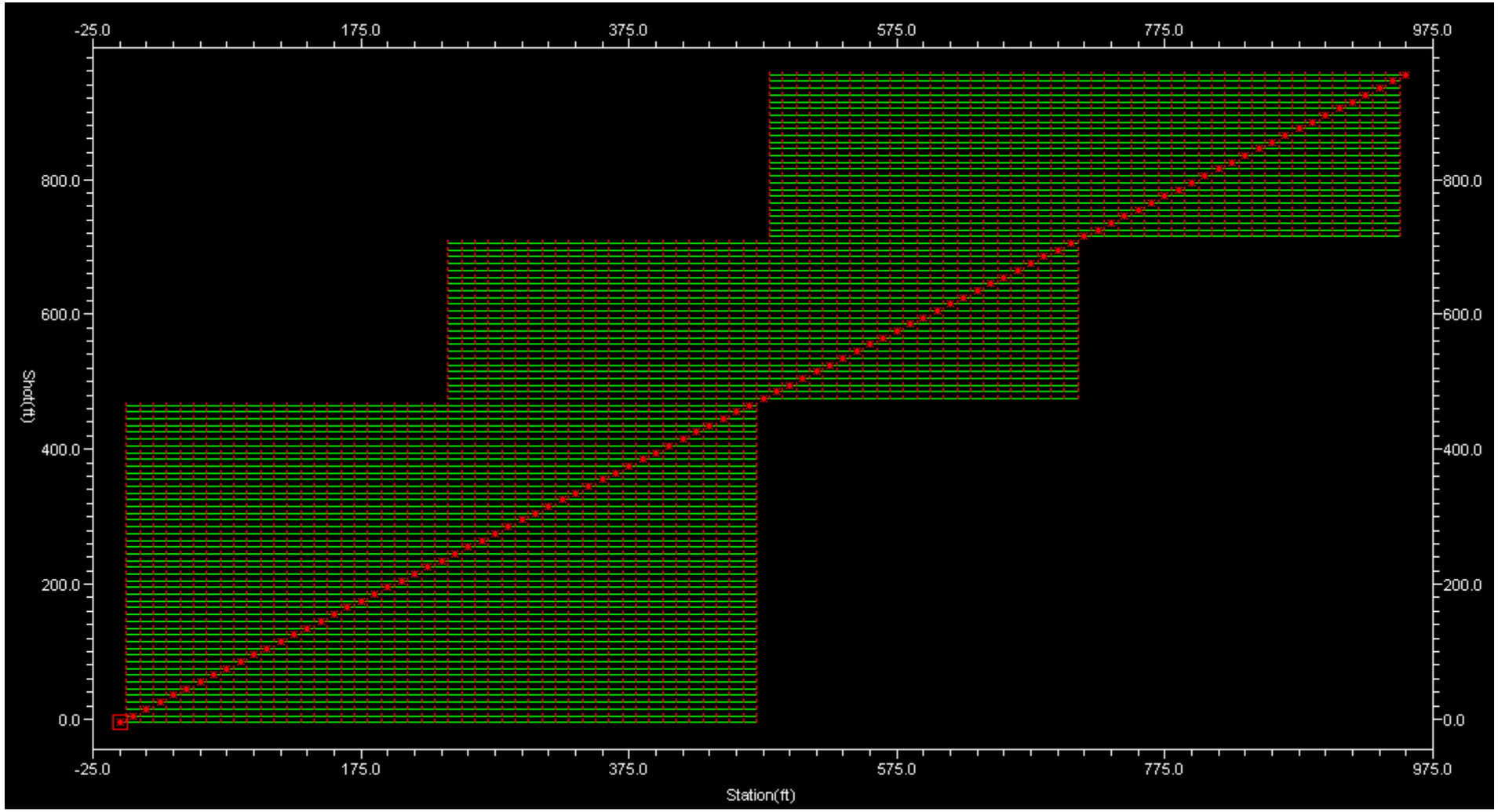


Figure C-8 Survey geometry for seismic reflection Line 400

APPENDIX F

Appendix F
December 2008 Groundwater Field Parameter Measurements
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Initial DTW (ft.)	Pump Type	Sample Date	Beginning Time	Ending Time	Purge Rate (mL/min)	Temperature (°C)	Conductivity (µS/cm2)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
AL-1	8.18	Peristaltic	12/17/2008	8:50	10:50	220	11.00	1269	7.35	-171.0	0.66	1.0
AL-14	7.30	Peristaltic	12/16/2008	13:20	14:40	250	10.29	219	5.74	219.6	0.34	5.1
AL-15	7.59	Peristaltic	12/19/2008	10:10	10:50	200	8.44	178	5.50	182.2	2.36	4.0
ARC-3	4.35	Peristaltic	12/17/2008	10:00	10:40	200	10.61	46	5.72	208.6	11.09	4.6
ASI-02D2	6.75	Peristaltic	12/18/2008	9:10	10:15	200	10.28	1088	6.92	-143.8	0.44	0.0
ASI-02D2	6.75	Peristaltic	12/18/2009	9:10	10:15	200	10.28	1088	6.92	-143.8	0.44	0.0
ASI-04D2	6.27	Peristaltic	12/18/2008	13:20	15:25	220	6.81	544	7.74	-183.8	2.80	0.2
ASI-05D2	6.82	Peristaltic	12/18/2008	9:15	11:35	240	8.11	415	7.84	-198.1	2.10	0.0
ASI-11D2	2.86	Peristaltic	12/19/2008	8:30	9:55	240	10.07	438	7.59	-211.6	2.20	0.8
ASI-14S	7.25	Peristaltic	12/16/2008	9:50	10:25	100	6.29	109	6.09	-23.3	0.51	4.7
ASI-14D2	6.57	Peristaltic	12/16/2008	8:48	11:20	350	8.33	581	6.56	-23.9	1.70	0.0
ASI-14D2	6.57	Peristaltic	12/16/2008	8:48	11:55	350	8.33	581	6.56	-23.9	1.70	0.0
ASI-15D2	7.11	Peristaltic	12/18/2008	8:55	10:00	225	9.12	981	7.06	-168.4	0.39	3.8
AS-23D2	7.01	Peristaltic	12/16/2008	14:10	15:05	350	8.60	828	6.58	-30.5	1.40	0.0
ASI-23S	8.32	Peristaltic	12/16/2008	15:40	16:25	230	8.06	591	4.57	-9.6	6.50	0.0
BF-4	8.42	Peristaltic	12/19/2008	8:40	8:55	200	8.78	206	6.55	-42.5	0.64	30.0
BM-3D	6.42	Peristaltic	12/17/2008	9:25	10:40	250	10.23	755	6.75	-133.7	2.30	21.0
BM-3S	7.42	Peristaltic	12/18/2008	9:05	9:40	200	9.23	488	6.57	69.9	2.59	19.1
BR-1	8.77	Peristaltic	12/17/2008	12:00	13:15	120	9.76	66257	12.43	-120.1	3.34	9.3
BW-13S	5.65	Peristaltic	12/18/2008	13:00	14:30	125	7.06	639	5.70	136.1	3.89	2.6
MI-1	7.20	Peristaltic	12/15/2008	14:40	15:20	250	10.88	409	6.48	373.5	25.90	6.6
MI-2	6.86	Peristaltic	12/15/2008	15:30	16:25	200	11.32	159	5.89	188.9	4.56	1.2
MI-8	4.10	Peristaltic	12/19/2008	9:08	10:20	300	8.77	549	5.47	245.0	1.81	2.0
OE-2A	7.42	Peristaltic	12/17/2008	13:20	14:20	250	8.07	1274	7.63	-152.5	4.00	6.3
OE-2B	7.34	Peristaltic	12/17/2008	13:25	14:35	200	8.24	65	5.13	164.6	5.21	1.5

Appendix F
2010 Groundwater Field Parameter Measurements
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Initial DTW (ft.)	Pump Type	Sample Date	Beginning Time	Ending Time	Purge Rate (mL/min)	Temperature (°C)	Conductivity (µS/cm)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
Spring 2010												
AIP-01	11.95	Bladder	5/19/2010	10:40	11:35	225	10.80	629	7.04	-132.3	0.33	3.5
AL-02	7.57	Bladder	5/19/2010	15:45	16:35	200	10.40	682	6.01	97.5	0.64	4.9
AL-12	8.34	Bladder	5/20/2010	8:46	9:50	250	10.34	630	5.59	60.1	0.59	19.9
AL-14	6.26	Bladder	5/18/2010	15:05	16:35	400	8.60	313	6.01	118.1	6.38	4.5
AL-15	7.09	Peristaltic	5/19/2010	15:26	16:20	150	9.78	1001	5.58	93.6	1.53	2.4
ARC-03	4.03	Bladder	5/19/2010	14:15	15:50	200	9.95	79	5.07	63.7	8.09	4.9
ASI-02D2	6.66	Peristaltic	5/18/2010	8:30	9:30	350	10.57	2044	6.99	-102.1	0.28	21.0
ASI-03D2	5.49	Peristaltic	5/18/2010	12:50	13:50	100	11.11	1503	7.20	-100.1	0.69	2.3
ASI-04D2	7.56	Peristaltic	5/17/2010	15:50	16:35	150	10.29	626	7.08	-110.4	0.57	0.8
ASI-05D2	6.55	Peristaltic	5/20/2010	14:25	15:20	200	11.11	1044	7.23	-118.3	0.36	2.7
ASI-11D2	2.33	Peristaltic	5/17/2010	15:58	16:58	350	11.20	1384	7.06	-128.8	0.50	1.1
ASI-14S	4.87	Peristaltic	5/18/2010	10:05	11:40	100	8.58	220	6.21	-14.1	1.02	5.0
ASI-14D2	6.11	Peristaltic	5/18/2010	8:20	8:55	150	8.17	841	6.96	-78.3	0.46	1.1
ASI-15D2	6.42	Peristaltic	5/20/2010	11:06	12:00	150	10.06	1417	6.84	-103.4	0.42	3.0
ASI-16D2	8.02	Peristaltic	5/19/2010	12:32	13:30	200	11.21	785	7.21	-125.7	0.31	1.3
ASI-23S	NA	Peristaltic	5/18/2010	11:45	12:05	100	11.09	497	6.65	-39.8	7.23	5.5
ASI-23D2	6.88	Peristaltic	5/18/2010	10:17	11:10	375	9.17	1207	6.55	1.3	0.49	1.5
BF-04	8.04	Bladder	5/20/2010	14:53	15:58	300	8.22	196	6.24	4.8	0.73	53.9
BM-03S	6.93	Bladder	5/19/2010	12:15	13:40	150	9.87	491	6.59	69.9	4.42	6.0
BM-03D	5.88	Bladder	5/19/2010	8:55	11:00	200	10.10	992	6.44	-59.4	0.32	54.9
BW-13S	5.55	Peristaltic	5/20/2010	9:02	10:05	100	10.67	737	5.89	218.7	2.15	1.4
MI-01	6.29	Bladder	5/19/2010	9:00	9:45	250	7.86	483	6.20	193.4	4.25	1.9
MI-02	5.98	Bladder	5/18/2010	14:46	15:38	175	9.72	195	6.11	126.1	5.62	9.3
MI-08	5.81	Bladder	5/20/2010	8:55	9:45	150	8.77	175	5.52	177.4	0.82	2.5
OE-02B	6.95	Bladder	5/20/2010	11:15	12:23	250	8.20	68	4.54	67.0	3.38	11.2
BR-01	17.25	Peristaltic	5/20/2010	14:55	16:45	100	15.20	4831	13.28	-124.7	2.57	19.5

Appendix F
2010 Groundwater Field Parameter Measurements
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Initial DTW (ft.)	Pump Type	Sample Date	Beginning Time	Ending Time	Purge Rate (mL/min)	Temperature (°C)	Conductivity (µS/cm)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
Fall 2010												
AIP-01	5.40	Bladder	12/2/2010	13:50	15:15	100	10.94	646	7.45	-135.8	0.88	1.0
AL-02	8.10	Bladder	12/1/2010	11:50	12:55	300	12.17	805	6.15	88.8	0.51	3.2
AL-12	8.36	Bladder	12/1/2010	9:15	10:35	200	12.64	1251	5.54	140.1	85.00	6.5
AL-14	7.25	Bladder	11/30/2010	9:00	9:55	240	10.87	327	6.30	171.3	0.36	1.1
AL-15	7.30	Peristaltic	12/1/2010	12:33	14:05	300	11.46	432	5.57	2.2	4.43	0.7
ARC-03	4.85	Bladder	12/1/2010	12:27	13:10	180	11.90	55	5.87	150.4	10.13	3.7
ASI-02D2	4.86	Peristaltic	11/29/2010	14:15	15:05	225	11.08	2608	7.00	-127.4	0.61	1.6
ASI-03D2	5.34	Peristaltic	11/29/2010	13:55	15:20	150	11.09	1590	7.08	-123.0	0.60	3.8
ASI-04D2	7.14	Peristaltic	11/30/2010	10:52	11:45	120	9.55	641	10.24	-118.3	0.45	1.1
ASI-05D2	5.77	Peristaltic	12/2/2010	9:50	13:30	200	10.48	939	7.33	-35.8	0.47	0.6
ASI-11D2	2.88	Peristaltic	11/30/2010	13:18	14:15	180	11.13	2270	9.38	-115.5	0.45	1.4
ASI-14S	5.50	Peristaltic	11/30/2010	14:35	15:30	150	9.66	393	5.87	-24.8	2.15	1.3
ASI-14D2	6.53	Peristaltic	11/30/2010	14:55	15:40	200	8.59	816	6.88	-99.9	0.49	0.2
ASI-15D2	6.20	Peristaltic	12/1/2010	14:28	15:10	200	10.09	1284	7.13	-146.3	0.53	0.8
ASI-16D2	8.05	Peristaltic	12/1/2010	11:43	12:35	225	12.02	850	7.43	-166.0	0.25	0.3
ASI-23S	8.10	Peristaltic	12/1/2010	8:45	9:45	100	10.11	541	6.33	-37.0	3.00	21.1
ASI-23D2	6.67	Peristaltic	12/1/2010	8:55	10:05	200	9.83	1313	6.49	-34.1	0.26	0.0
BF-04	8.15	Bladder	12/1/2010	12:00	13:25	200	12.09	394	6.42	-74.0	0.41	7.8
BM-03S	7.41	Bladder	11/29/2010	13:25	15:10	300	11.37	699	6.64	90.9	2.19	0.0
BM-03D	6.46	Bladder	11/29/2010	13:25	15:25	200	10.86	976	6.63	-92.7	0.85	16.5
BW-13S	4.62	Peristaltic	12/2/2010	12:05	13:00	100	8.42	593	6.43	44.5	2.95	0.3
MI-01	6.91	Bladder	11/29/2010	10:20	11:20	190	10.84	1217	7.75	112.1	4.52	2.2
MI-02	6.62	Bladder	11/29/2010	10:25	11:55	220	12.10	328	6.11	187.7	3.94	0.6
MI-08	5.61	Bladder	12/2/2010	13:33	14:15	325	9.84	249	5.91	148.6	1.30	0.3
OE-02A	7.09	Bladder	11/30/2010	12:40	13:55	100	8.97	1895	7.57	-157.8	0.17	45.7
OE-02B	7.09	Bladder	11/30/2010	12:50	14:05	250	9.49	90	5.32	128.8	3.23	3.1
BR-01	17.85	Peristaltic	12/2/2010	8:42	9:45	75	9.47	5555	12.27	57.2	2.02	3.3

Appendix F
2010 Groundwater Field Parameter Measurements
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Initial DTW (ft.)	Pump Type	Sample Date	Beginning Time	Ending Time	Purge Rate (mL/min)	Temperature (°C)	Conductivity (µS/cm)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
Fall 2010 (cont.)												
MW-01D	2.62	Bladder	12/1/2010	9:02	10:40	220	11.29	754	7.26	-238.7	1.35	75.4
MW-02M	3.22	Bladder	11/29/2010	13:57	15:25	250	10.09	809	8.45	-20.7	0.21	27.9
MW-03D	7.33	Bladder	11/29/2010	10:25	11:45	200	11.42	622	7.45	-303.2	4.02	179
MW-04D	3.26	Bladder	12/2/2010	9:18	11:15	150	11.08	1111	7.47	-246.0	0.50	71.6
MW-05D	8.20	Bladder	11/30/2010	8:50	11:00	120	11.66	1081	7.12	-338.9	0.10	202
MW-05D2	6.50	Bladder	11/30/2010	9:00	10:15	400	11.35	422	7.75	-117.4	5.76	144
MW-06M	5.55	Bladder	11/30/2010	9:15	15:15	220	11.74	1167	7.02	-158.9	0.94	87.8
MW-06D	5.35	Bladder	11/30/2010	9:15	10:20	150	11.27	661	7.66	-247.4	0.49	117
MW-07M	5.41	Bladder	12/2/2010	8:57	10:10	250	10.82	1148	7.40	-125.2	3.20	178
MW-08S	1.85	Bladder	11/30/2010	12:10	13:15	300	11.48	881	5.54	10.3	1.97	7.9
MW-08M	1.83	Bladder	11/30/2010	12:16	13:15	200	10.77	561	6.74	-82.9	0.35	34
MW-09M	9.08	Bladder	12/1/2010	14:35	15:55	250	11.65	1912	6.85	-133.3	1.30	13.8
MW-09D	8.78	Bladder	12/2/2010	9:10	10:55	250	10.61	321	8.45	-337.1	0.27	218
MW-10D	2.59	Bladder	12/2/2010	12:17	13:25	100	11.03	454	7.87	-258.2	0.23	482
MW-11S	6.95	Bladder	12/1/2010	9:24	10:20	340	13.13	1132	6.43	89.4	5.44	8.8

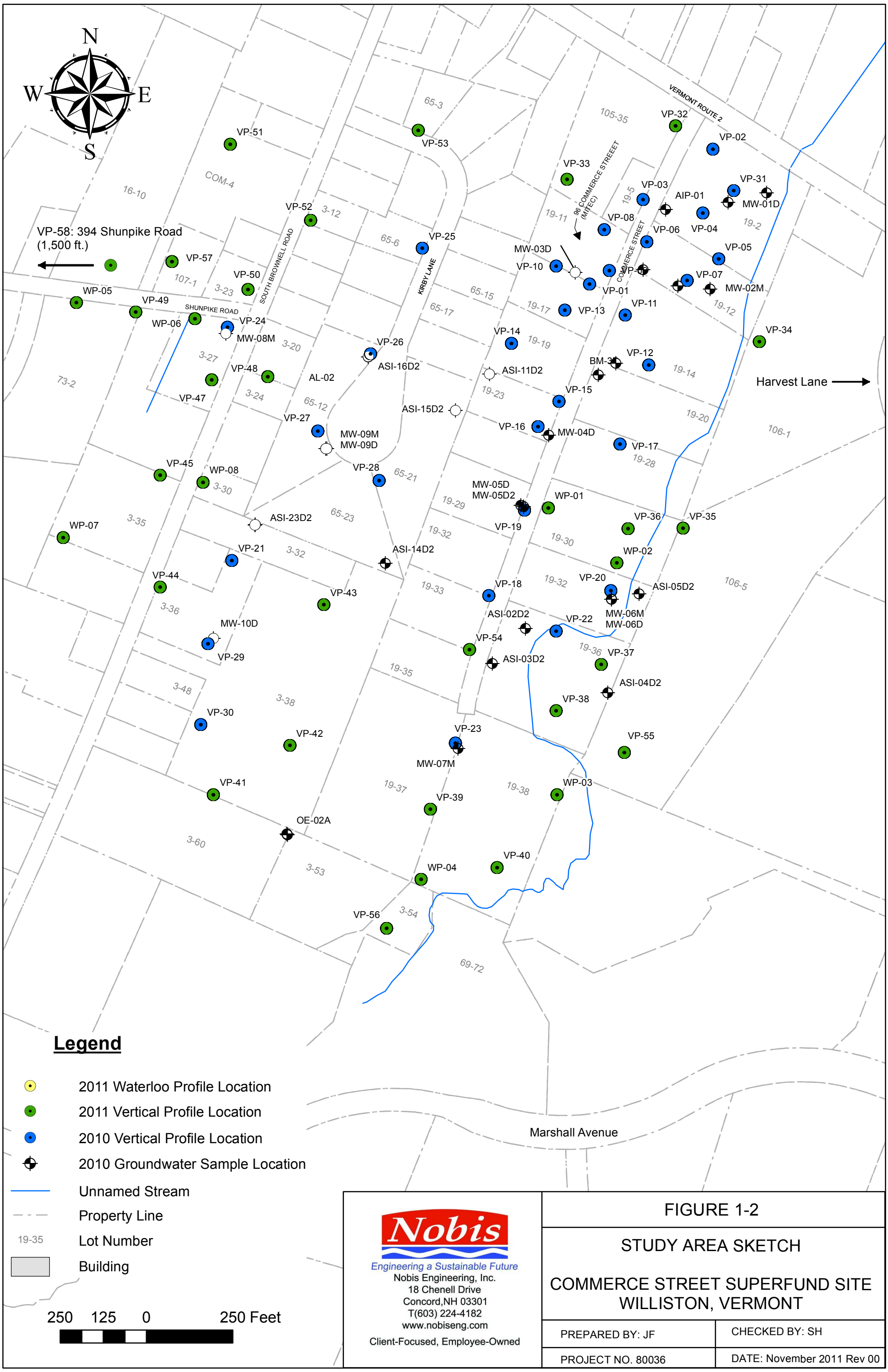
Appendix F
July 2010 Porewater Sample Location Details
Commerce Street Plume Superfund Site
Williston, Vermont

Station ID	Sample Location	Sample Type	Sample Date	Surface Water Temp °C	Porewater Temp. °C	Variation °C
PW-01-072210AX	PW-01	Field Sample	7/22/2010	22.9	13.1	-9.8
PW-02-072210AX	PW-02	Field Sample	7/22/2010	23.0	15.1	-7.9
PW-03-072210AX	PW-03	Field Sample	7/22/2010	22.9	17.7	-5.2
PW-04-072210AX	PW-04	Field Sample	7/22/2010	22.3	13.3	-9.0
PW-05-072210AX	PW-05	Field Sample	7/22/2010	22.4	17.5	-4.9
PW-06-072210AX	PW-06	Field Sample	7/22/2010	23.0	18.2	-4.8
PW-07-072210AX	PW-07	Field Sample	7/22/2010	23.0	16.2	-6.8
PW-08-072210AX	PW-08	Field Sample	7/22/2010	23.0	15.1	-7.9
PW-09-072210AX	PW-09	Field Sample	7/22/2010	23.0	14.2	-8.8
PW-09-072210AD	PW-09	Field Duplicate	7/22/2010	23.0	14.2	-8.8
PW-10-072210AX	PW-10	Field Sample	7/22/2010	23.1	19.6	-3.5
PW-11-072210AX	PW-11	Field Sample	7/22/2010	23.0	17.3	-5.7
PW-12-072210AX	PW-12	Field Sample	7/22/2010	23.1	18.4	-4.7
PW-13-072210AX	PW-13	Field Sample	7/22/2010	23.1	19.1	-4.0
PW-14-072210AX	PW-14	Field Sample	7/22/2010	23.1	18.3	-4.8
PW-15-072210AX	PW-15	Field Sample	7/22/2010	23.0	14.7	-8.3
PW-16-072210AX	PW-16	Field Sample	7/22/2010	24.4	15.7	-8.7
PW-17-072210AX	PW-17	Field Sample	7/22/2010	23.5	18.7	-4.8
PW-18-072210AX	PW-18	Field Sample	7/22/2010	24.0	20.6	-3.4
PW-19-072210AX	PW-19	Field Sample	7/22/2010	23.4	21.5	-1.9
PW-20-072210AX	PW-20	Field Sample	7/22/2010	22.0	18.4	-3.6

Appendix F
2012 Groundwater Field Parameter Measurements
Commerce Street Plume Superfund Site
Williston, Vermont

Sample Location	Initial DTW (ft.)	Pump Type	Sample Date	Beginning Time	Ending Time	Purge Rate (mL/min)	Temperature (°C)	Conductivity (mS/cm)	pH	ORP (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
Summer 2012												
ASI-04D2	7.17	Peristaltic	6/7/2012	8:10	8:55	125	10.55	0.664	7.49	-134.4	0.70	1.1
ASI-05D2	6.55	Peristaltic	6/6/2012	13:20	14:25	150	11.05	0.855	7.30	-128.4	0.67	5.3
BR-1	18.20	Peristaltic	6/5/2012	9:10	10:05	95	14.93	5.397	12.56	-56.6	3.39	1.2
MW-01D	2.90	Bladder	6/7/2012	10:10	10:50	200	11.98	0.954	7.17	-143.7	0.26	136.0
MW-03D	7.53	Bladder	6/6/2012	16:00	16:45	250	11.33	0.541	7.10	-95.6	2.64	176
MW-04D	4.05	Bladder	6/6/2012	12:05	12:45	150	12.00	0.909	7.20	-138.6	0.25	179.0
MW-05D	5.35	Bladder	6/6/2012	14:40	15:10	125	11.99	1.11	7.05	-134.3	0.26	399
MW-05D2	5.25	Bladder	6/5/2012	13:40	15:35	100	11.93	0.475	7.74	-166.70	0.6	out of range
MW-06M	5.63	Bladder	6/6/2012	9:15	9:40	190	11.64	1.433	7.06	122.5	0.45	68.2
MW-06D	5.55	Bladder	6/6/2012	11:50	12:20	125	11.88	0.712	7.49	-147.3	0.24	292
MW-07M	6.56	Bladder	6/5/2012	16:00	16:55	300	11.22	0.783	7.51	138.8	0.14	451
MW-08S	2.11	Bladder	6/7/2012	8:40	9:15	150	10.61	0.732	5.74	201.4	0.42	8.6
MW-08M	2.11	Bladder	6/6/2012	8:15	10:25	275	10.80	0.508	6.62	-3.0	0.17	25
MW-09M	9.87	Bladder	6/5/2012	9:05	11:20	125	11.54	1.743	6.80	-40.2	0.27	33.0
MW-09D	9.97	Bladder	6/5/2012	9:20	10:15	125	11.16	0.523	7.50	-104.5	2.43	303
MW-10D	3.62	Bladder	6/5/2012	13:15	14:50	10	13.07	0.582	7.43	73.8	0.27	350
MW-11S	7.12	Bladder	6/6/2012	12:20	14:45	275	10.66	2.238	6.60	169.3	4.94	4.0

APPENDIX G



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Nobis Engineering, Inc.
18 Chenell Drive
Concord,NH 03301
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www.nobiseng.com
Client-Focused, Employee-Owned

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

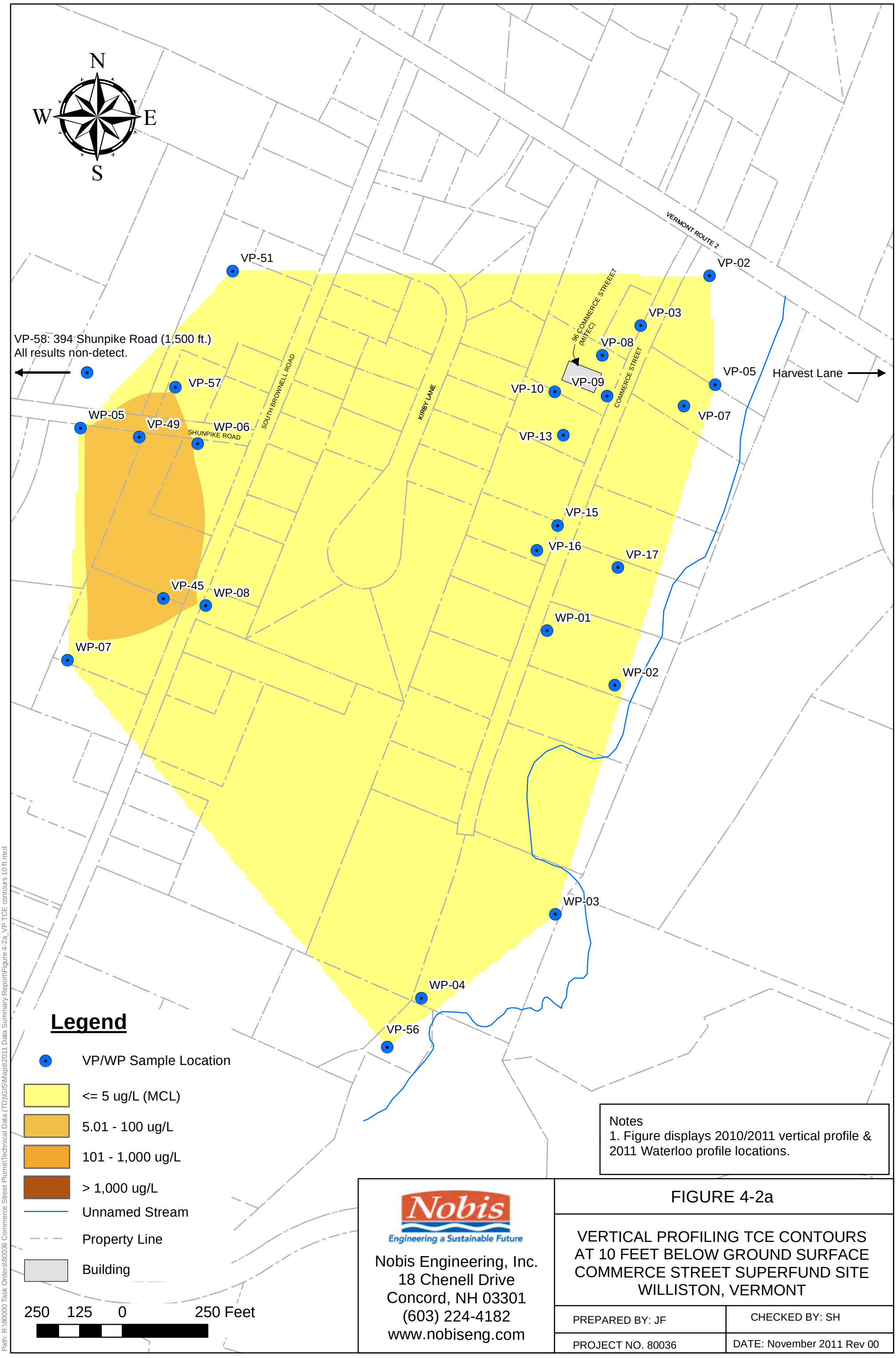
N
W
E
S
VERMONT ROUTE 2
VP-51
VP-02
VP-03
96 COMMERCE STREEET (MITEC)
VP-08
VP-58: 394 Shunpike Road (1,500 ft.)
All results non-detect.
VP-57
SOUTH BROWNELL ROAD
KIRBY LANE
VP-09
VP-10
COMMERCE STREET
VP-05
Harvest Lane
VP-07
WP-05
VP-49
WP-06
SHUNPIKE ROAD
VP-13
VP-15
VP-16
VP-17
VP-45
WP-08
WP-01
WP-07
WP-02
WP-03
WP-04
VP-56
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
250 125 0 250 Feet
Notes
1. Figure displays 2010/2011 vertical profile & 2011 Waterloo profile locations.
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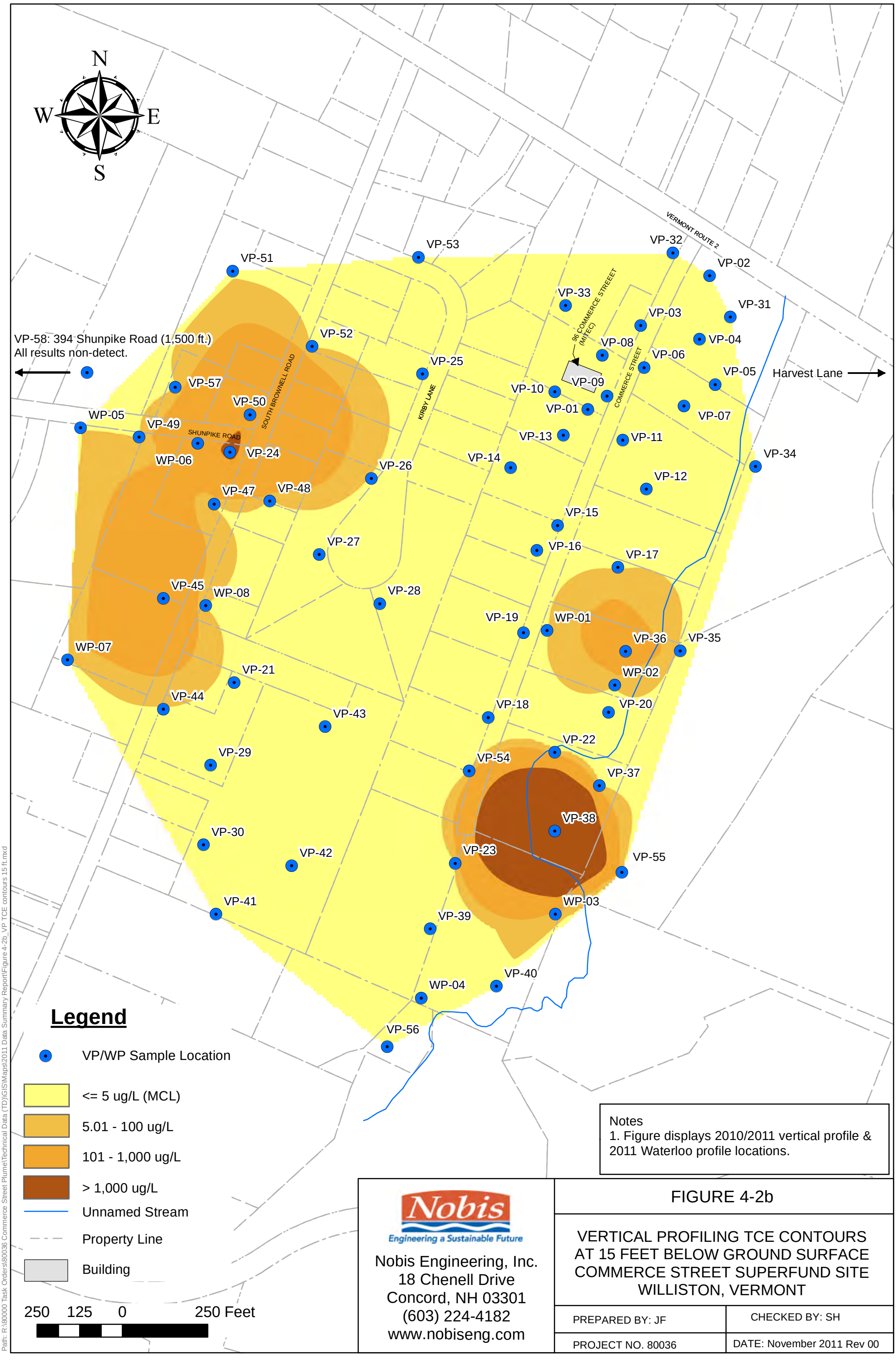
FIGURE 4-2a
VERTICAL PROFILING TCE CONTOURS AT 10 FEET BELOW GROUND SURFACE
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT
PREPARED BY: JF
CHECKED BY: SH
PROJECT NO. 80036
DATE: November 2011 Rev 00
Path: R:\80000 Task Orders\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\2011 Data Summary Report\Figure 4-2a_VP TCE contours 10 ft.mxd



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

Path: R:\80000 Task Orders\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\2011 Data Summary Report\Figure 4-2b_VP TCE contours 15 ft.mxd

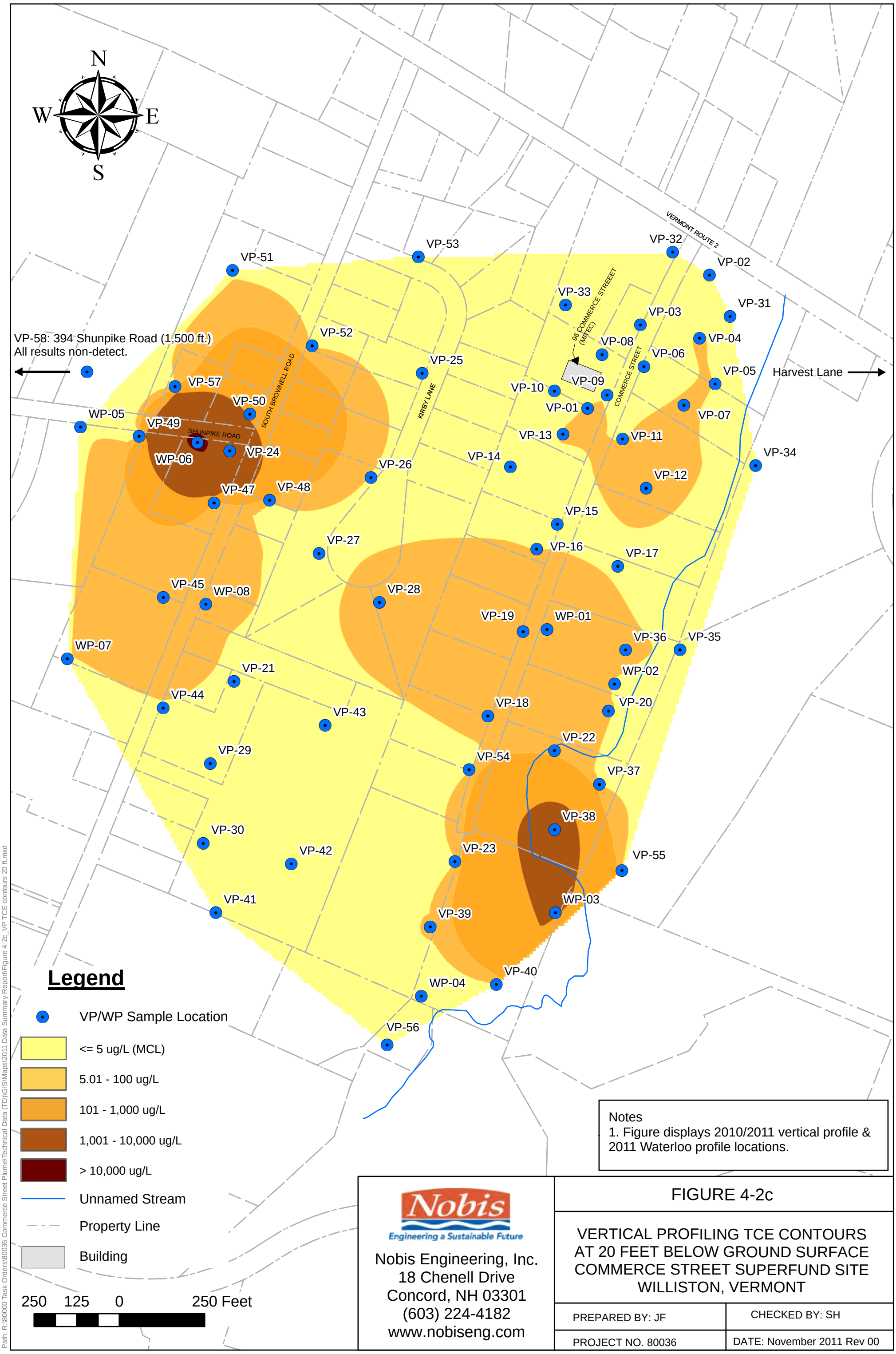
N
W
E
S
VERMONT ROUTE 2
VP-53
VP-32
VP-51
VP-02
VP-33
96 COMMERCE STREEET (MITEC)
VP-03
VP-31
VP-52
VP-08
VP-04
VP-58: 394 Shunpike Road (1,500 ft.)
All results non-detect.
VP-25
VP-06
VP-05
Harvest Lane
VP-57
VP-09
VP-10
SOUTH BROWNELL ROAD
KIRBY LANE
COMMERCE STREET
VP-50
VP-01
VP-07
WP-05
VP-49
SHUNPIKE ROAD
VP-13
VP-11
VP-24
VP-34
WP-06
VP-14
VP-26
VP-12
VP-47
VP-48
VP-15
VP-27
VP-16
VP-17
VP-45
WP-08
VP-28
VP-19
WP-01
VP-36
VP-35
WP-07
VP-21
WP-02
VP-44
VP-18
VP-20
VP-43
VP-22
VP-29
VP-54
VP-37
VP-38
VP-30
VP-42
VP-23
VP-55
VP-41
WP-03
VP-39
VP-40
WP-04
VP-56
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
250 125 0 250 Feet
Notes
1. Figure displays 2010/2011 vertical profile & 2011 Waterloo profile locations.
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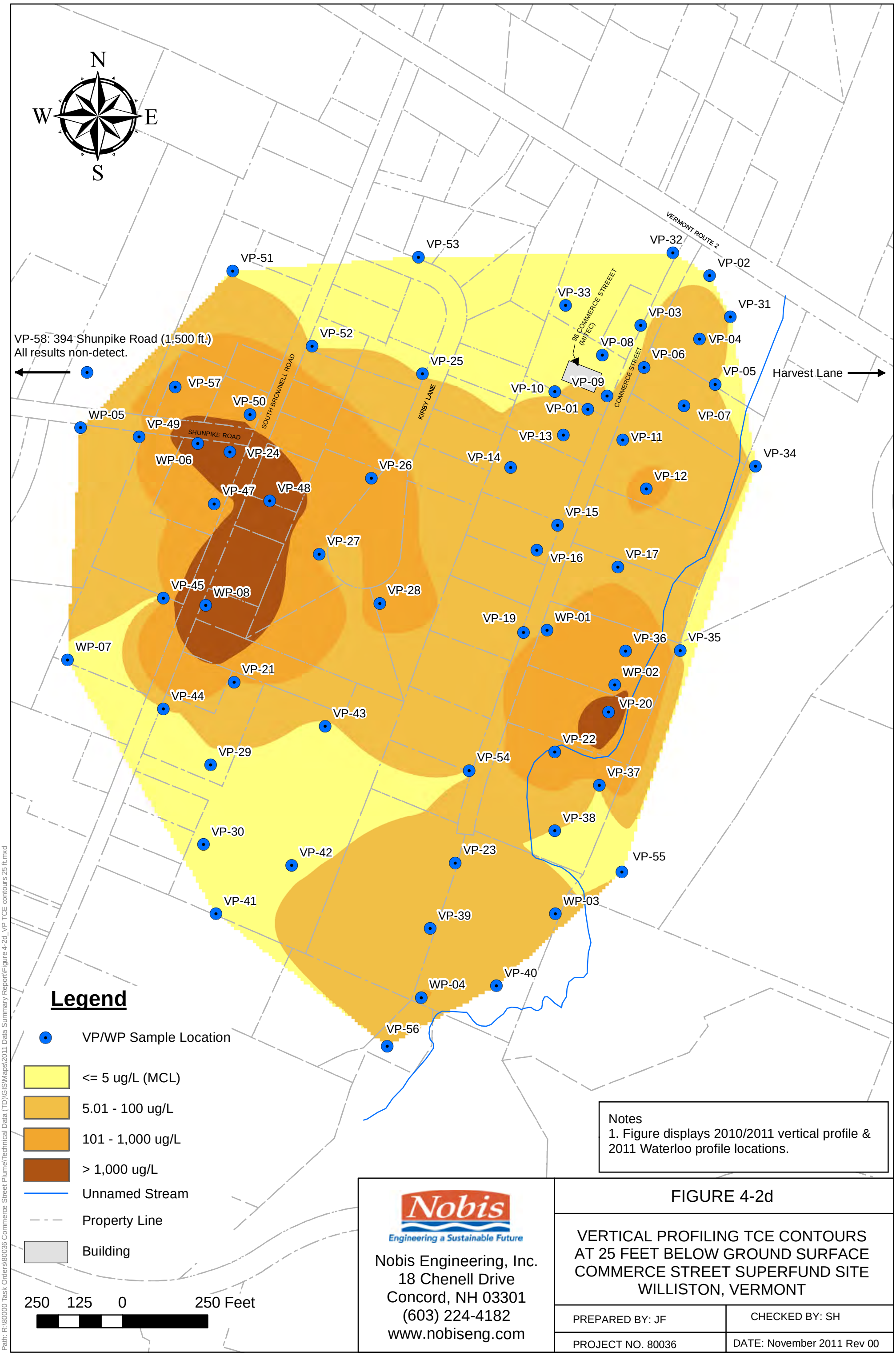
FIGURE 4-2c
VERTICAL PROFILING TCE CONTOURS AT 20 FEET BELOW GROUND SURFACE
COMMERCE STREET SUPERFUND SITE
WILLISTON, VERMONT
PREPARED BY: JF
CHECKED BY: SH
PROJECT NO. 80036
DATE: November 2011 Rev 00
Path: R:\80000 Task Orders\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\2011 Data Summary Report\Figure 4-2c_VP TCE contours 20 ft.mxd



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

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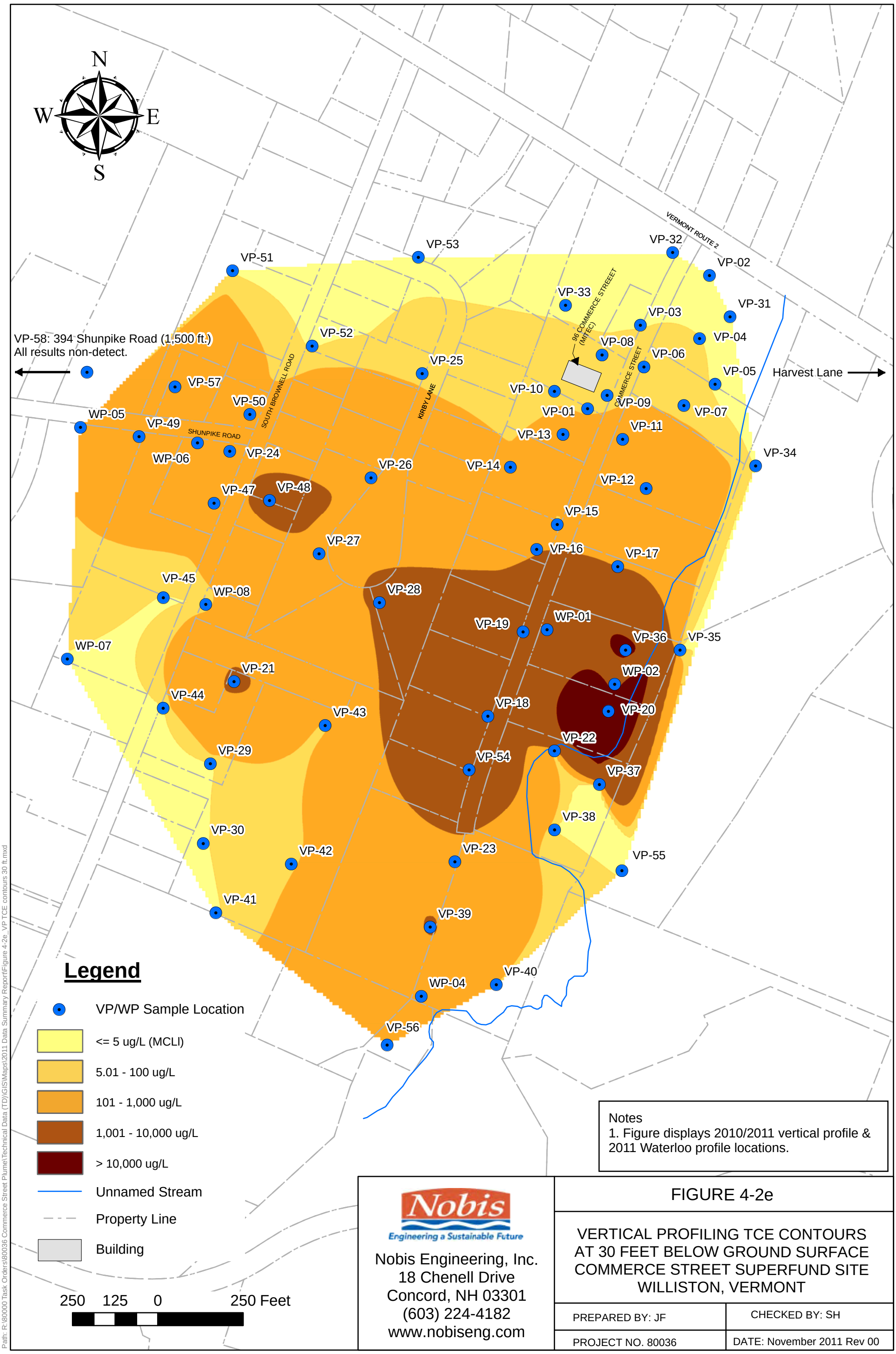
FIGURE 4-2d

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



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

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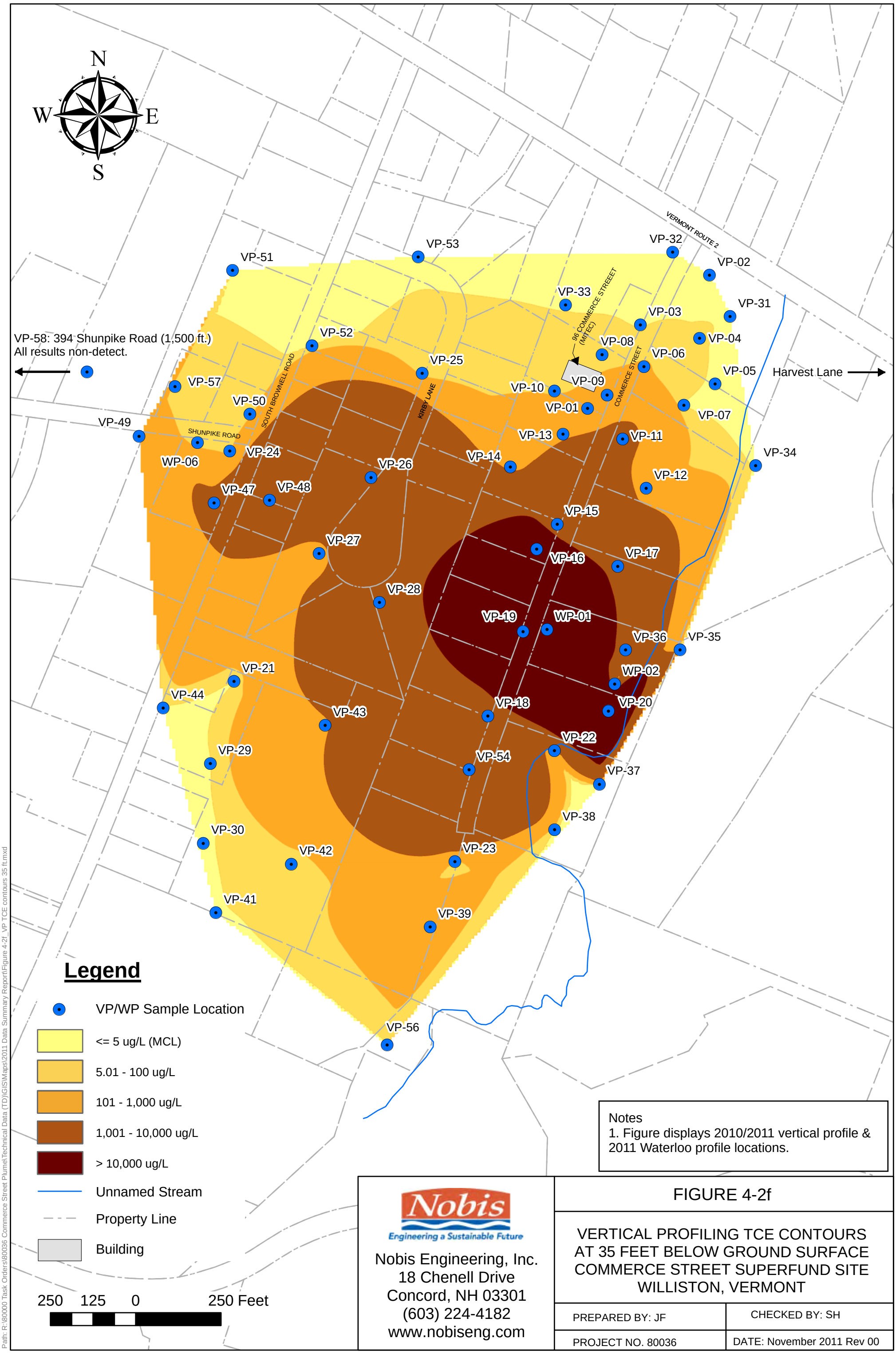
FIGURE 4-2e

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



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

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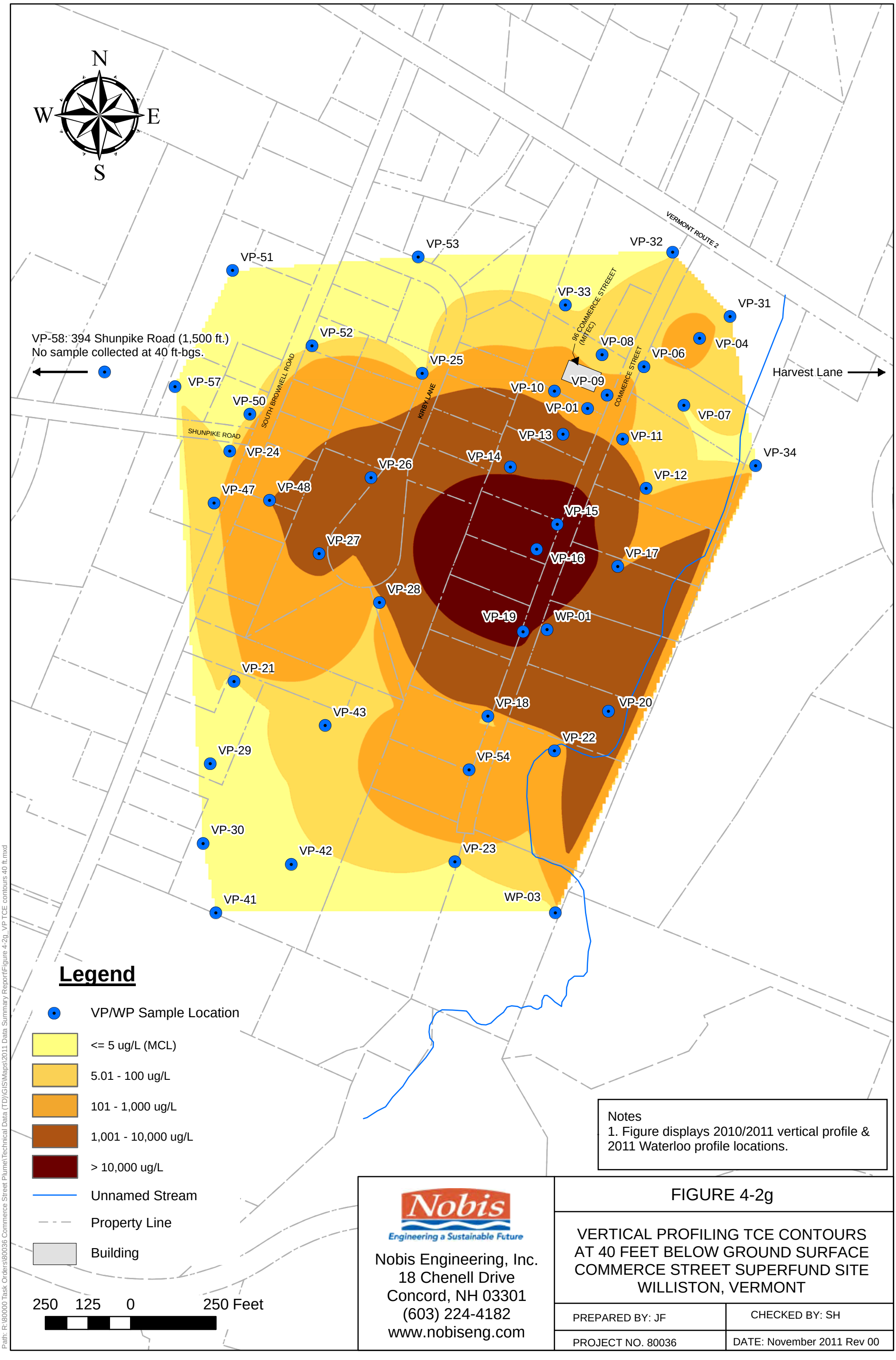
FIGURE 4-2f

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 (TD)\GIS\Maps\2011 Data Summary Report\Figure 4-2f_VP TCE contours 35 ft.mxd


N
W
E
S
VERMONT ROUTE 2
VP-53
VP-32
VP-51
VP-33
VP-31
96 COMMERCE STREEET (MITEC)
VP-52
VP-08
VP-04
VP-06
VP-58: 394 Shunpike Road (1,500 ft.)
No sample collected at 40 ft-bgs.
VP-25
VP-09
Harvest Lane
VP-57
VP-10
VP-50
SOUTH BROWNELL ROAD
KIRBY LANE
COMMERCE STREET
VP-01
VP-07
SHUNPIKE ROAD
VP-13
VP-11
VP-24
VP-14
VP-34
VP-26
VP-12
VP-47
VP-48
VP-15
VP-27
VP-16
VP-17
VP-28
VP-19
WP-01
VP-21
VP-18
VP-20
VP-43
VP-22
VP-29
VP-54
VP-30
VP-42
VP-23
VP-41
WP-03
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
250 125 0 250 Feet
Notes
1. Figure displays 2010/2011 vertical profile & 2011 Waterloo profile locations.
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Concord, NH 03301
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www.nobiseng.com
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
Path: R:\80000 Task Orders\80036 Commerce Street Plume\Technical Data (TD)\GIS\Maps\2011 Data Summary Report\Figure 4-2g_VP TCE contours 40 ft.mxd

APPENDIX H

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
18 Chenell Drive
Concord, NH 03301
Tel. / 603.224.4182

E-Mail / JFopiano@nobiseng.com

Prepared by:
Stone Environmental, Inc.
Integrated Site Investigation Services
535 Stone Cutters Way
Montpelier, VT 05602
Tel. / 802.229.4541
Fax / 802.229 5417
E-Mail / sei@stone-env.com

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1. PLOTS OF PHYSIOCHEMICAL AND (I_K) DATA

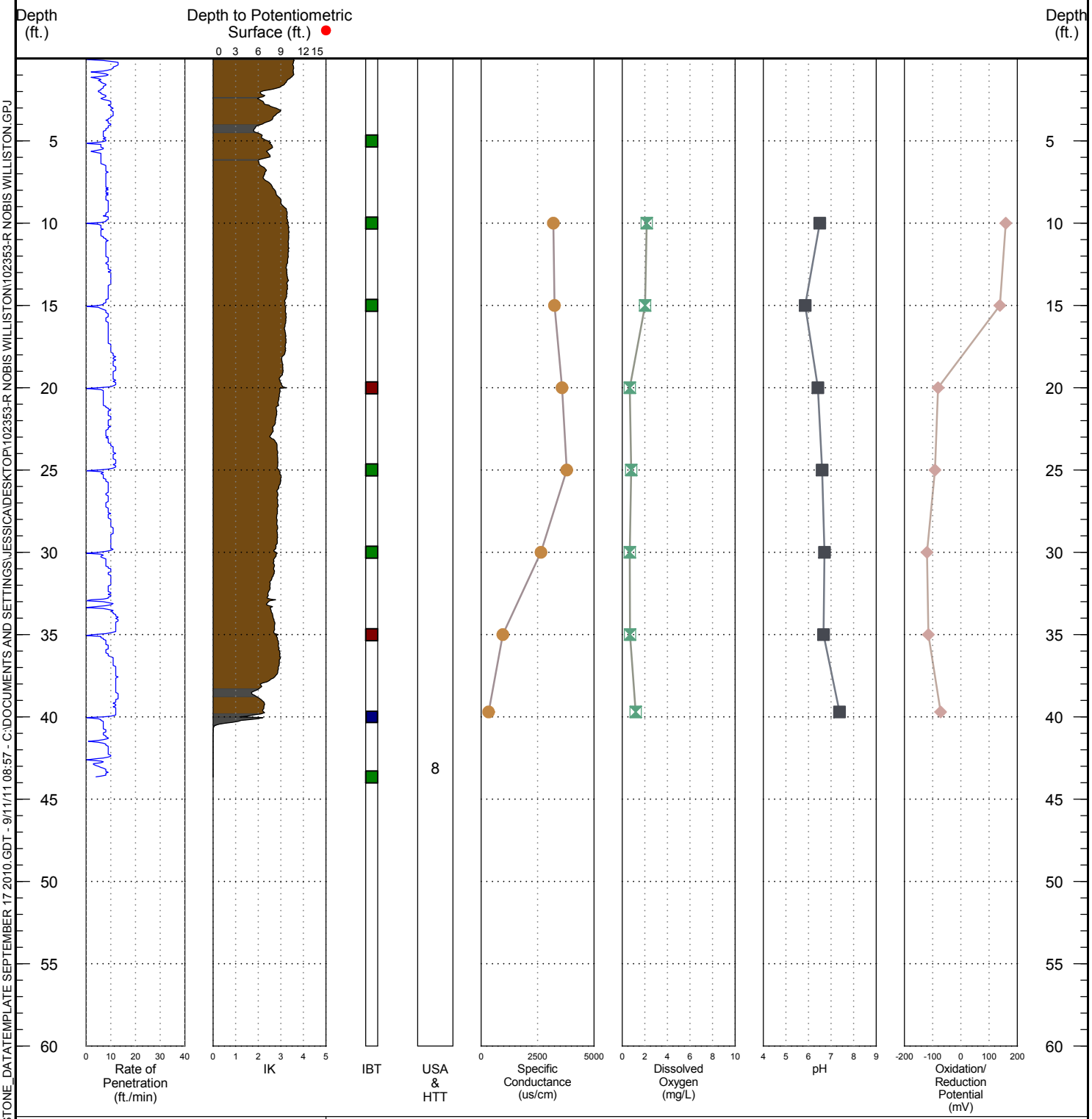
BORING NAME WP-01

Total Depth 43.65 ft.

Waterloo APS-D™
ADVANCED PROFILING SYSTEM

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



IK Scale

- 0 to 0.1
- 0.1 to 2
- 2 to 4
- 4 to 6
- >6

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

WATERLOO APS - STONE_DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 08:57 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ

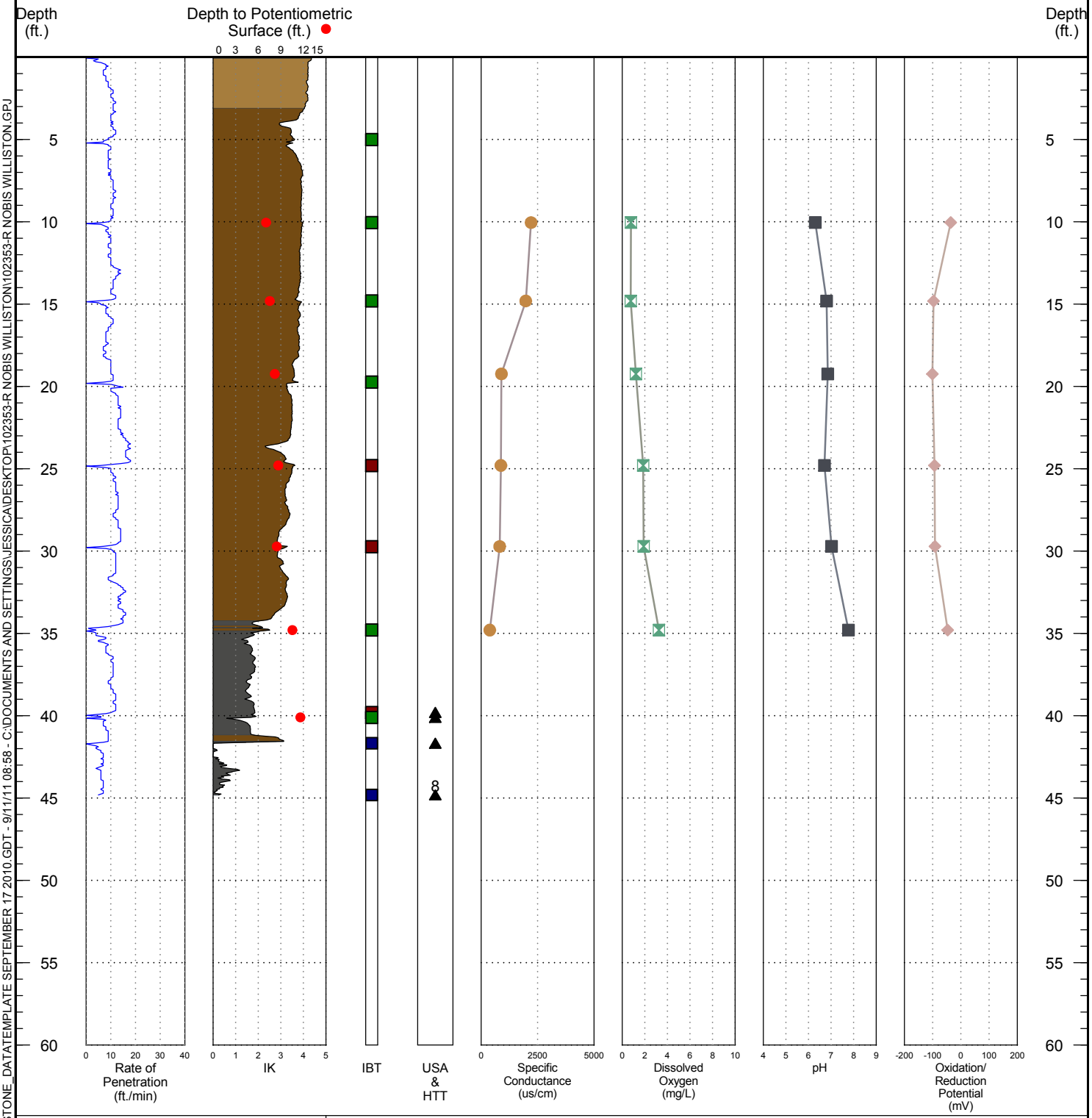
BORING NAME WP-02

Total Depth 44.81 ft.

Waterloo APS-D™
ADVANCED PROFILING SYSTEM

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



IK Scale

- 0 to 0.1
- 0.1 to 2
- 2 to 4
- 4 to 6
- >6

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

WATERLOO APS - STONE_DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 08:58 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ

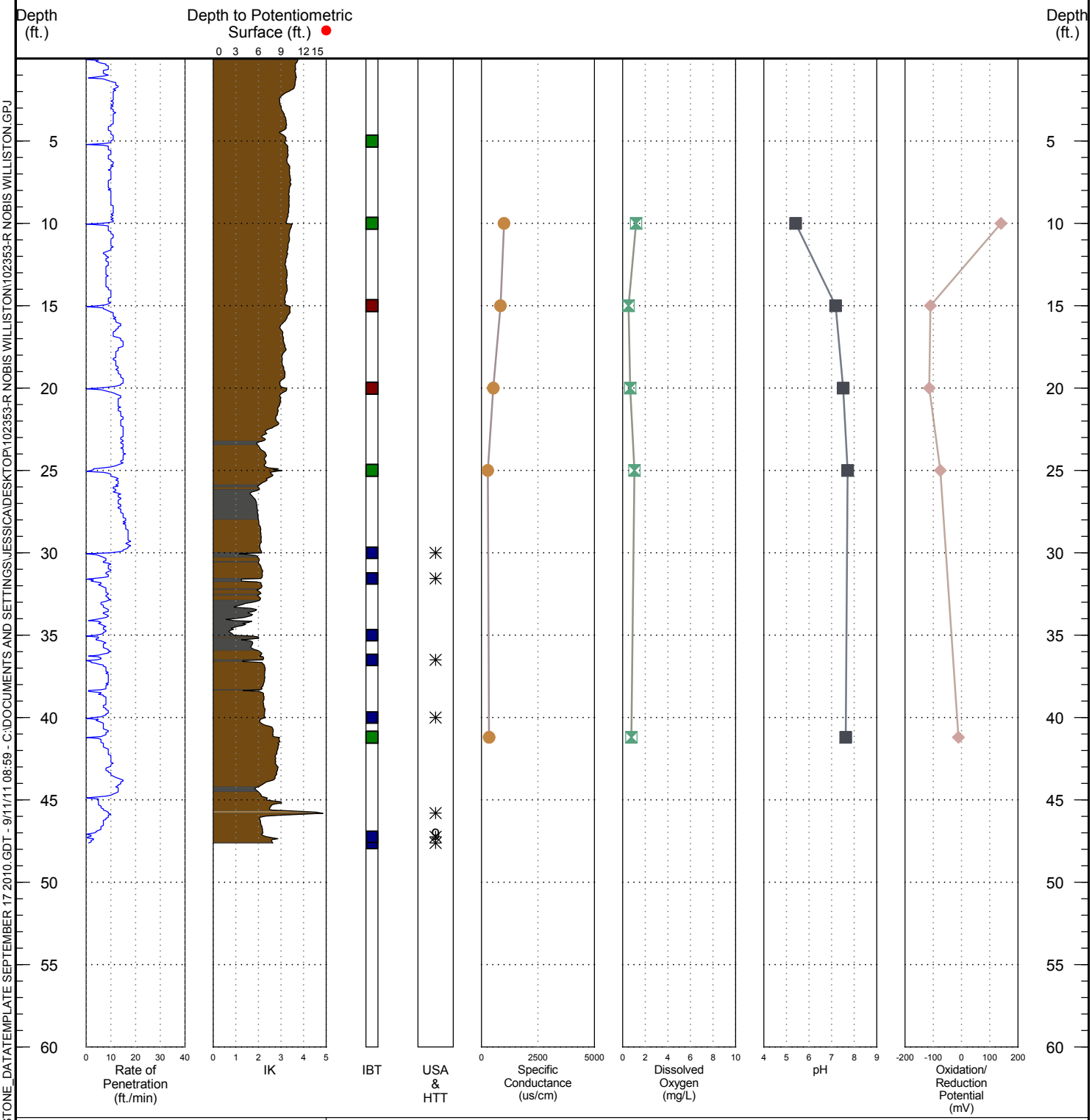
BORING NAME WP-03

Total Depth 45.8 ft.

Waterloo APS-D™ ADVANCED PROFILING SYSTEM

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



IK Scale

- 0 to 0.1
- 0.1 to 2
- 2 to 4
- 4 to 6
- >6

Legend

IBT = IK Behavior Type
- = IK increase when hammer stops
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USA = Unsuccessful Sample Attempt
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HTT = Hole Termination Type
- 7 = Broken downhole equipment
- 8 = Reached Target Depth
- 9 = ROP dropped below threshold
- 10 = Sudden Hard Refusal

WATERLOO APS - STONE_DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 08:59 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ

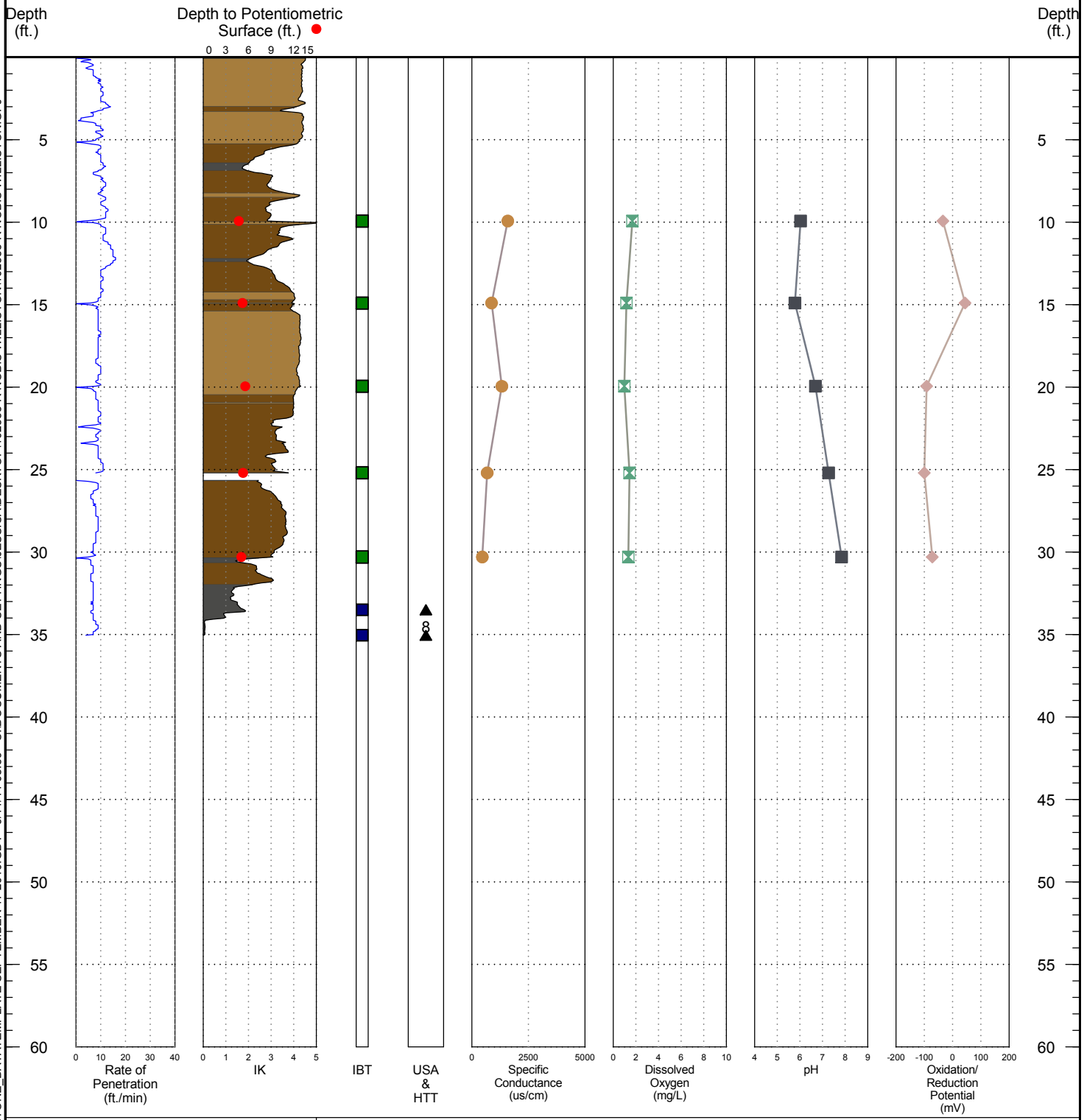
BORING NAME WP-04

Total Depth 35.05 ft.

Waterloo APS-D™ ADVANCED PROFILING SYSTEM

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



IK Scale

- 0 to 0.1
- 0.1 to 2
- 2 to 4
- 4 to 6
- >6

Legend

IBT = IK Behavior Type
- = IK increase when hammer stops
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- 9 = ROP dropped below threshold
- 10 = Sudden Hard Refusal

WATERLOO APS - STONE_DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 08:59 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ

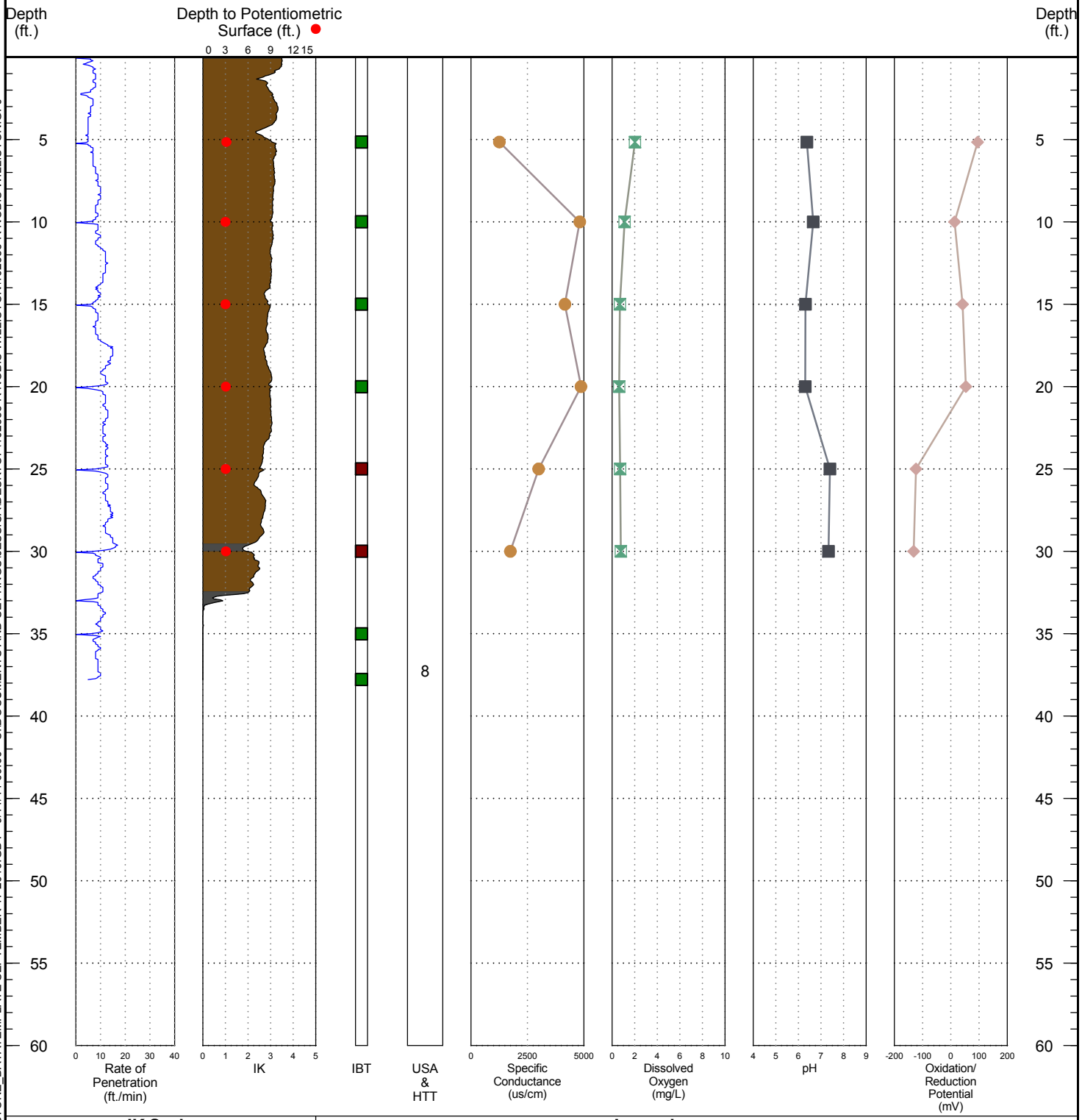
BORING NAME WP-05

Total Depth 37.78 ft.

Waterloo APS-D™ ADVANCED PROFILING SYSTEM

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



IK Scale

- 0 to 0.1
- 0.1 to 2
- 2 to 4
- 4 to 6
- >6

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

WATERLOO APS - STONE_DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 09:00 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ

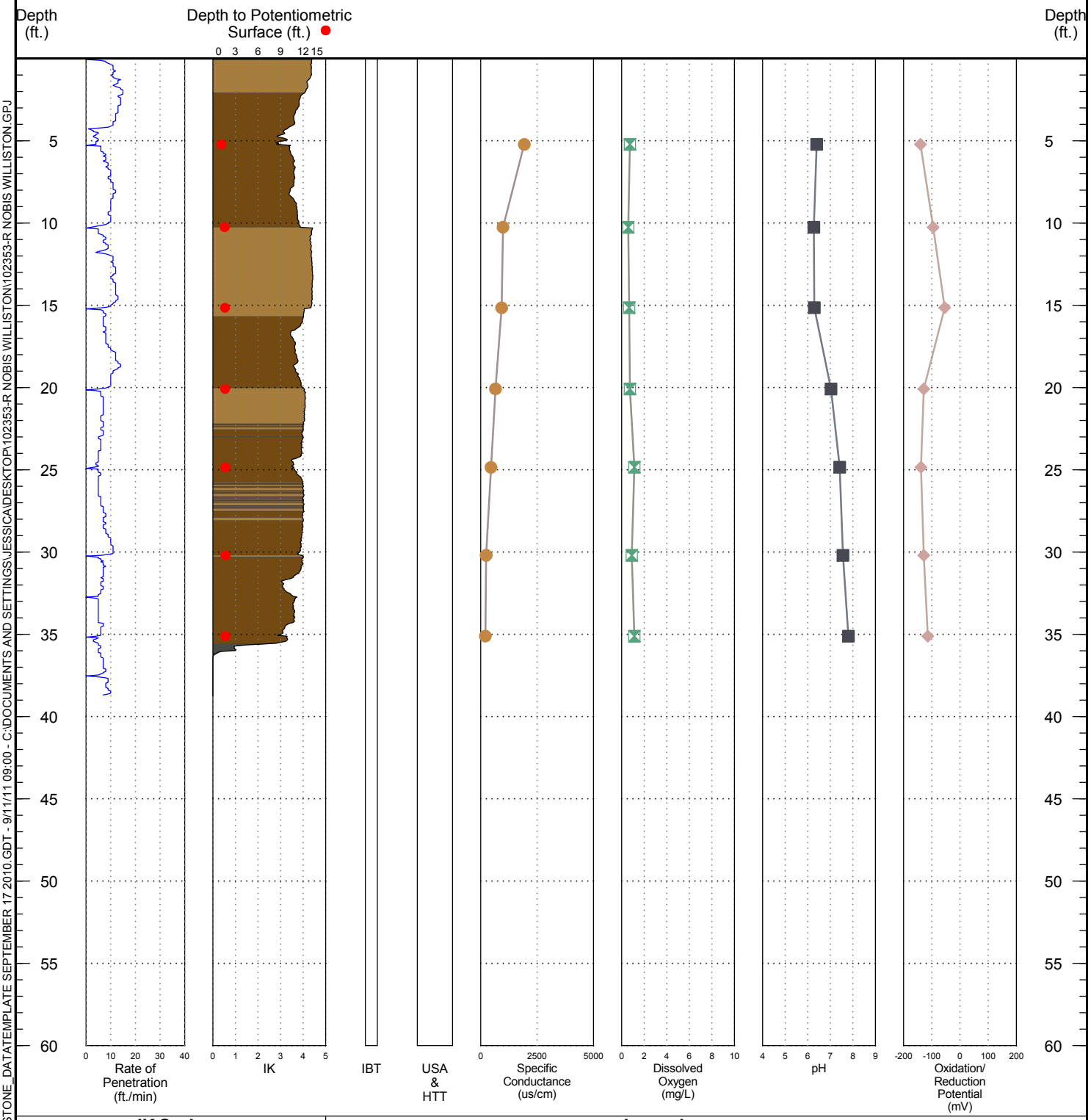
BORING NAME WP-06

Total Depth 38.68 ft.

Waterloo APS-D™ ADVANCED PROFILING SYSTEM

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



IK Scale

- 0 to 0.1
- 0.1 to 2
- 2 to 4
- 4 to 6
- >6

Legend

IBT = IK Behavior Type
- = IK increase when hammer stops
- = IK decrease when hammer stops
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USA = Unsuccessful Sample Attempt
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- ▲ = 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

WATERLOO APS - STONE_DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 09:00 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ

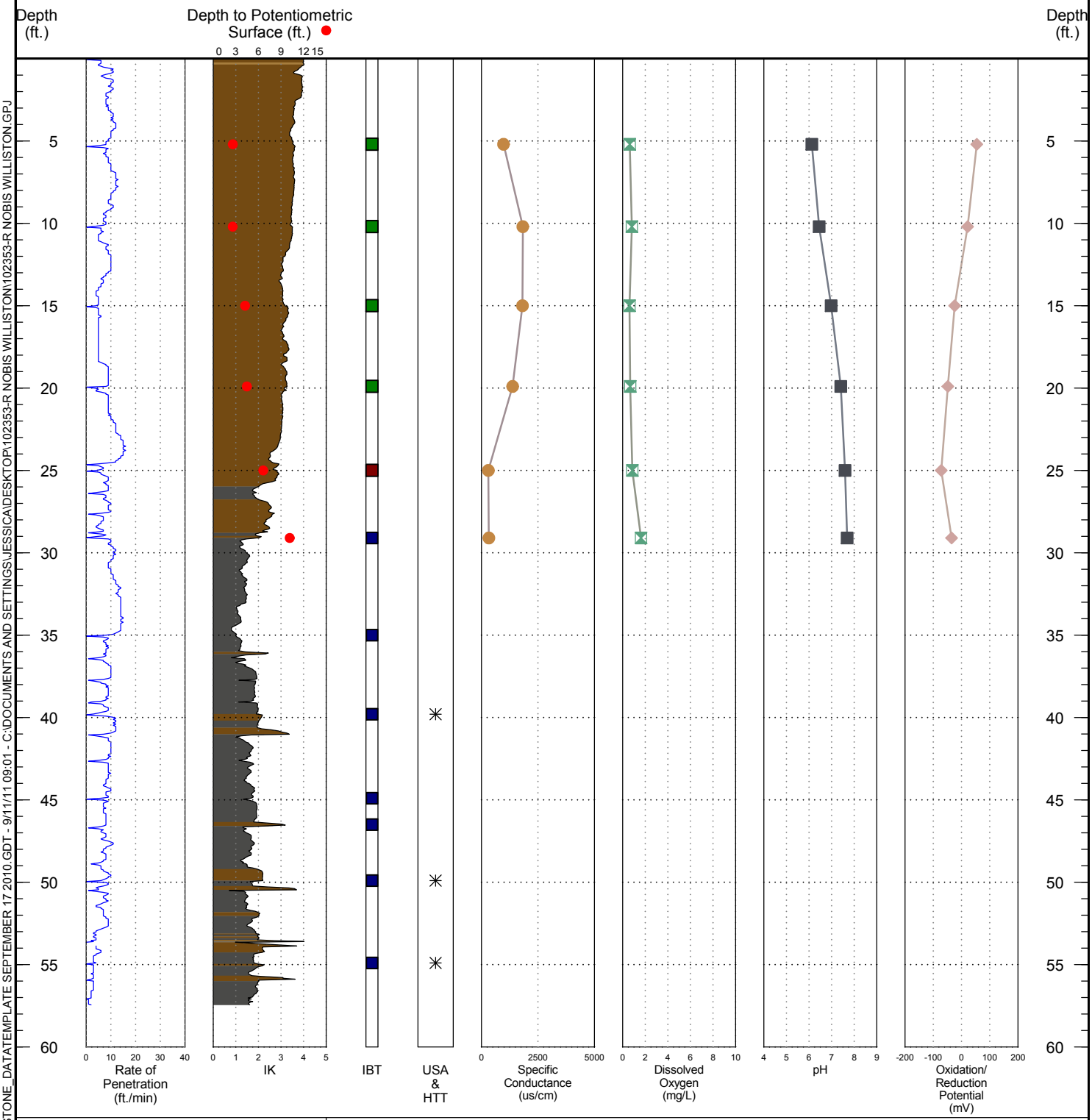
BORING NAME WP-07

Total Depth 57.34 ft.

Waterloo APS-D™ ADVANCED PROFILING SYSTEM

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



IK Scale

- 0 to 0.1
- 0.1 to 2
- 2 to 4
- 4 to 6
- >6

Legend

IBT = IK Behavior Type
- = IK increase when hammer stops
- = IK decrease when hammer stops
- = No change when hammer stops

USA = Unsuccessful Sample Attempt
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- ▲ = 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

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

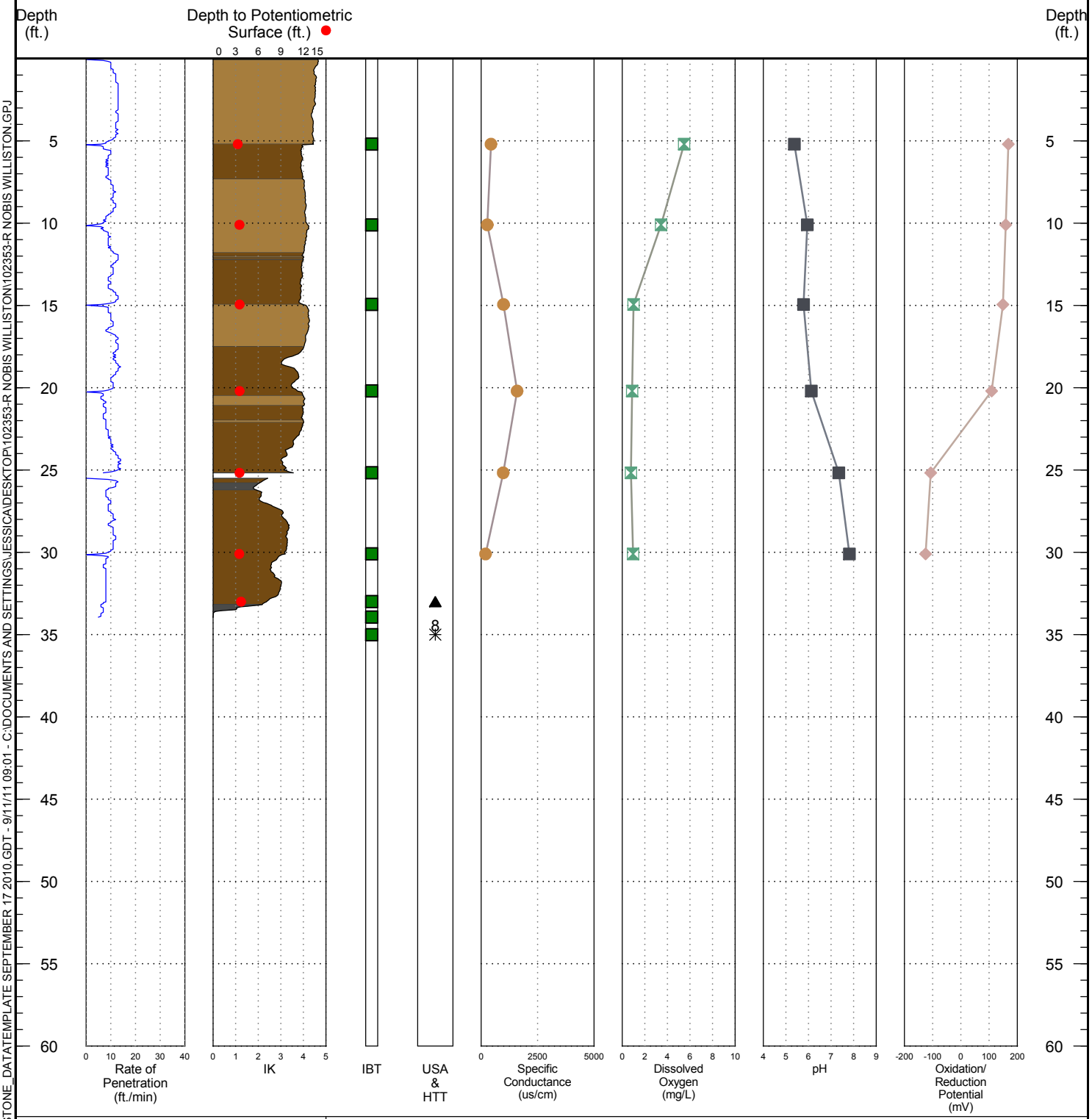
BORING NAME WP-08

Total Depth 33.94 ft.

Waterloo APS-D™ ADVANCED PROFILING SYSTEM

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



IK Scale

0 to 0.1	
0.1 to 2	
2 to 4	
4 to 6	
>6	

Legend

IBT = IK Behavior Type
- = IK increase when hammer stops
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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

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

2. PHYSIOCHEMICAL DAILY LOGS

GROUNDWATER PROFILE LOG

STONE ENVIRONMENTAL INC

Client: Nobis

Profile Location: WP01

Dates:	8/31/2011 (Started) 8/31/2011 (Completed)	KPRO Box Serial # / Acquisition Laptop:	SEI-803/Rasc6	Gas Drive or Peri Pump:	Peri Pump
Location:	Williston, VT	Troll Serial #:	Hydrolab 070600	Atmospheric Pressure:	33.74
SEI #:	102353-R	Drilling Contractor:	Platform	KPRO N_2 Pressure (set via P transducer):	77.36
Sampler(s):	LJR	Average Depth to Water:	NA	Gas Drive Pump N_2 Pressure:	NA

PHYSICOCHEMICAL PARAMETERS

Depth (ft)	Date / Time	Volume Purged (mL)	Head (ft)	SC (uS/cm)	DO (PPM)	pH	ORP (mV)	COMMENTS
-10.00	8/31/11 8:36	1000	NC	3198	2.17	6.50	159	zeroes pressure not stabalizing
-15.00	8/31/11 9:06	800	NC	3248	2.03	5.85	138	zeroed pressure not stabalizing
-20.00	8/31/11 9:56	1200	NC	3582	0.66	6.42	-81	zeroed pressure not stabalizing
-25.00	8/31/11 10:26	1000	NC	3791	0.80	6.60	-92	zeroed pressure not stabalizing
-30.00	8/31/11 10:57	1100	NC	2648	0.66	6.71	-120	zeroed pressure not stabalizing
-35.00	8/31/11 11:31	1050	NC	959	0.69	6.67	-115	zeroed pressure not stabalizing
-39.70	8/31/11 12:28	1150	NC	330	1.19	7.37	-72	zeroed pressure not stabalizing

GROUNDWATER PROFILE LOG

STONE ENVIRONMENTAL INC

Client: Nobis

Profile Location: WP02

Dates:	8/31/2011 (Started) 8/31/2011 (Completed)	KPRO Box Serial # / Acquisition Laptop:	SEI-806 / Rasc5	Gas Drive or Peri Pump:	Peri Pump
Location:	Williston, VT	Troll Serial #:	Hydrolab 070600045357	Atmospheric Pressure:	32.9
SEI #:	102353-R	Drilling Contractor:	Platform	KPRO N_2 Pressure (set via P transducer):	69.6
Sampler(s):	DC	Average Depth to Water:	-8.86	Gas Drive Pump N_2 Pressure:	NA

PHYSICOCHEMICAL PARAMETERS

Depth (ft)	Date / Time	Volume Purged (mL)	Head (ft)	SC (uS/cm)	DO (PPM)	pH	ORP (mV)	COMMENTS
-10.05	8/31/11 9:20	1000	-7.04	2211	0.77	6.30	-36	
-14.81	8/31/11 9:49	1100	-7.53	1976	0.75	6.80	-97	
-19.24	8/31/11 10:15	1000	-8.20	898	1.20	6.85	-101	
-24.80	8/31/11 10:49	950	-8.66	874	1.85	6.71	-93	
-29.72	8/31/11 11:23	1000	-8.46	820	1.90	7.02	-92	
-34.80	8/31/11 12:05	700	-10.54	381	3.24	7.77	-47	
-40.10	8/31/11 12:24	0	-11.60	NA	NA	NA	NA	Could not produce water.

GROUNDWATER PROFILE LOG

STONE ENVIRONMENTAL INC

Client: Nobis

Profile Location: WP03

Dates:	8/31/2011 (Started) 8/31/2011 (Completed)	KPRO Box Serial # / Acquisition Laptop:	SEI-803/Rasc6	Gas Drive or Peri Pump:	Peri Pump
Location:	Williston, VT	Troll Serial #:	Hydrolab 070600	Atmospheric Pressure:	33.89
SEI #:	102353-R	Drilling Contractor:	Platform	KPRO N_2 Pressure (set via P transducer):	69.67
Sampler(s):	LJR	Average Depth to Water:	NA	Gas Drive Pump N_2 Pressure:	NA

PHYSICOCHEMICAL PARAMETERS

Depth (ft)	Date / Time	Volume Purged (mL)	Head (ft)	SC (uS/cm)	DO (PPM)	pH	ORP (mV)	COMMENTS
-10.00	8/31/11 13:59	1200	NC	998	1.18	5.41	140	Head not stabalizing
-15.00	8/31/11 14:38	1100	NC	839	0.52	7.18	-110	Head not stabalizing
-20.00	8/31/11 15:17	1100	NC	526	0.66	7.51	-114	Head not stabalizing
-25.00	8/31/11 15:57	1000	NC	277	1.05	7.71	-75	Head not stabalizing
-41.20	8/31/11 17:14	1200	NC	338	0.77	7.62	-11	Head not stabalizing

GROUNDWATER PROFILE LOG

STONE ENVIRONMENTAL INC

Client: Nobis

Profile Location: WP04

Dates:	8/31/2011 (Started) 9/1/2011 (Completed)	KPRO Box Serial # / Acquisition Laptop:	SEI-806 / Rasc5	Gas Drive or Peri Pump:	Peri Pump
Location:	Williston, VT	Troll Serial #:	Hydrolab 070600045357	Atmospheric Pressure:	32.84
SEI #:	102353-R	Drilling Contractor:	Platform	KPRO N_2 Pressure (set via P transducer):	67.42
Sampler(s):	DC	Average Depth to Water:	-2.93	Gas Drive Pump N_2 Pressure:	NA

PHYSICOCHEMICAL PARAMETERS

Depth (ft)	Date / Time	Volume Purged (mL)	Head (ft)	SC (uS/cm)	DO (PPM)	pH	ORP (mV)	COMMENTS
-9.93	8/31/11 14:59	750	-4.71	1588	1.69	6.03	-34	
-14.90	8/31/11 15:33	1000	-5.20	872	1.17	5.78	44	
-19.95	8/31/11 15:57	900	5.57	1325	0.98	6.69	-92	
-25.20	8/31/11 16:41	900	-5.28	677	1.43	7.27	-100	
-30.30	8/31/11 17:36	900	-5.05	461	1.33	7.84	-72	

GROUNDWATER PROFILE LOG

STONE ENVIRONMENTAL INC

Client: **Nobis**

Profile Location: WP05

	Started	Completed
Dates:	9/1/2011	9/1/2011

Location:	Williston, VT
SEI #:	102353-R
Sampler(s):	LJR

KPRO Box Serial # / Acquisition Laptop:	SEI-803/Rasc6
Troll Serial #:	Hydrolab 070600
Drilling Contractor:	Platform
Average Depth to Water:	-3.04

Gas Drive or Peri Pump:	Peri Pump
Atmospheric Pressure:	34.05
KPRO N_2 Pressure (set via P transducer):	69.63
Gas Drive Pump N_2 Pressure:	NA

PHYSICOCHEMICAL PARAMETERS

Depth (ft)	Date / Time	Volume Purged (mL)	Head (ft)	SC (uS/cm)	DO (PPM)	pH	ORP (mV)	COMMENTS
-5.15	9/1/11 10:37	1000	-3.12	1257	2.02	6.37	95	
-10.00	9/1/11 11:13	1200	-3.00	4817	1.10	6.66	13	
-15.00	9/1/11 11:40	1300	-3.00	4161	0.68	6.31	42	
-20.00	9/1/11 12:16	1400	-3.05	4871	0.63	6.30	53	
-25.00	9/1/11 12:49	1200	-3.03	2995	0.70	7.40	-123	
-30.00	9/1/11 13:31	1200	-3.06	1744	0.77	7.33	-132	

GROUNDWATER PROFILE LOG

STONE ENVIRONMENTAL INC

Client: **Nobis**

Profile Location: WP06

Dates:	9/1/2011 (Started) 9/1/2011 (Completed)	KPRO Box Serial # / Acquisition Laptop:	SEI-806 / Rasc5	Gas Drive or Peri Pump:	Peri Pump
Location:	Williston, VT	Troll Serial #:	Hydrolab 070600045357	Atmospheric Pressure:	32.91
SEI #:	102353-R	Drilling Contractor:	Platform	KPRO N_2 Pressure (set via P transducer):	67.54
Sampler(s):	DC	Average Depth to Water:	-1.55	Gas Drive Pump N_2 Pressure:	NA

PHYSICOCHEMICAL PARAMETERS

Depth (ft)	Date / Time	Volume Purged (mL)	Head (ft)	SC (uS/cm)	DO (PPM)	pH	ORP (mV)	COMMENTS
-5.22	9/1/11 10:32	1000	-1.12	1931	0.72	6.40	-140	
-10.25	9/1/11 10:53	1000	-1.56	985	0.59	6.27	-95	
-15.15	9/1/11 11:25	1000	-1.61	927	0.66	6.29	-54	
-20.08	9/1/11 12:06	1000	-1.62	654	0.72	7.03	-128	
-24.85	9/1/11 12:43	1000	-1.65	455	1.12	7.42	-138	
-30.20	9/1/11 13:12	1000	-1.66	239	0.90	7.56	-128	
-35.11	9/1/11 13:53	1000	-1.65	204	1.13	7.80	-114	

GROUNDWATER PROFILE LOG

STONE ENVIRONMENTAL INC

Client: Nobis

Profile Location: WP07

Dates:	9/1/2011 (Started) 9/1/2011 (Completed)	KPRO Box Serial # / Acquisition Laptop:	SEI-803/Rasc6	Gas Drive or Peri Pump:	Peri Pump
Location:	Williston, VT	Troll Serial #:	Hydrolab 070600	Atmospheric Pressure:	34.01
SEI #:	102353-R	Drilling Contractor:	Platform	KPRO N_2 Pressure (set via P transducer):	68.77
Sampler(s):	LJR	Average Depth to Water:	-5.11	Gas Drive Pump N_2 Pressure:	NA

PHYSICOCHEMICAL PARAMETERS

Depth (ft)	Date / Time	Volume Purged (mL)	Head (ft)	SC (uS/cm)	DO (PPM)	pH	ORP (mV)	COMMENTS
-5.20	9/1/11 14:56	1100	-2.60	976	0.63	6.13	54	
-10.20	9/1/11 15:28	1200	-2.58	1829	0.81	6.45	22	
-15.00	9/1/11 15:56	1300	-4.23	1814	0.61	6.98	-24	
-19.90	9/1/11 16:23	1200	-4.46	1380	0.67	7.41	-48	
-25.00	9/1/11 17:04	1100	-6.64	303	0.85	7.59	-72	
-29.10	9/1/11 18:21	800	-10.15	328	1.62	7.69	-35	

GROUNDWATER PROFILE LOG

STONE ENVIRONMENTAL INC

Client: Nobis

Profile Location: WP08

Dates:	9/1/2011 (Started) 9/1/2011 (Completed)	KPRO Box Serial # / Acquisition Laptop:	SEI-806 / Rasc5	Gas Drive or Peri Pump:	Peri Pump
Location:	Williston, VT	Troll Serial #:	Hydrolab 070600045357	Atmospheric Pressure:	32.75
SEI #:	102353-R	Drilling Contractor:	Platform	KPRO N_2 Pressure (set via P transducer):	69.89
Sampler(s):	DC	Average Depth to Water:	-3.50	Gas Drive Pump N_2 Pressure:	NA

PHYSICOCHEMICAL PARAMETERS

Depth (ft)	Date / Time	Volume Purged (mL)	Head (ft)	SC (uS/cm)	DO (PPM)	pH	ORP (mV)	COMMENTS
-5.20	9/1/11 15:13	800	-3.27	435	5.48	5.37	168	
-10.10	9/1/11 15:44	800	-3.50	270	3.43	5.95	159	
-14.94	9/1/11 16:14	900	-3.52	989	0.99	5.78	149	
-20.20	9/1/11 16:44	1000	-3.52	1592	0.88	6.13	109	
-25.17	9/1/11 17:29	1000	-3.51	975	0.78	7.34	-107	
-30.10	9/1/11 18:04	800	-3.48	193	0.95	7.81	-125	
-33.00	9/1/11 19:20	200	-3.71	NA	NA	NA	NA	Yeild to low, Nobis elected to not continue.

3. PLOTS OF VOC AND (I_K) DATA

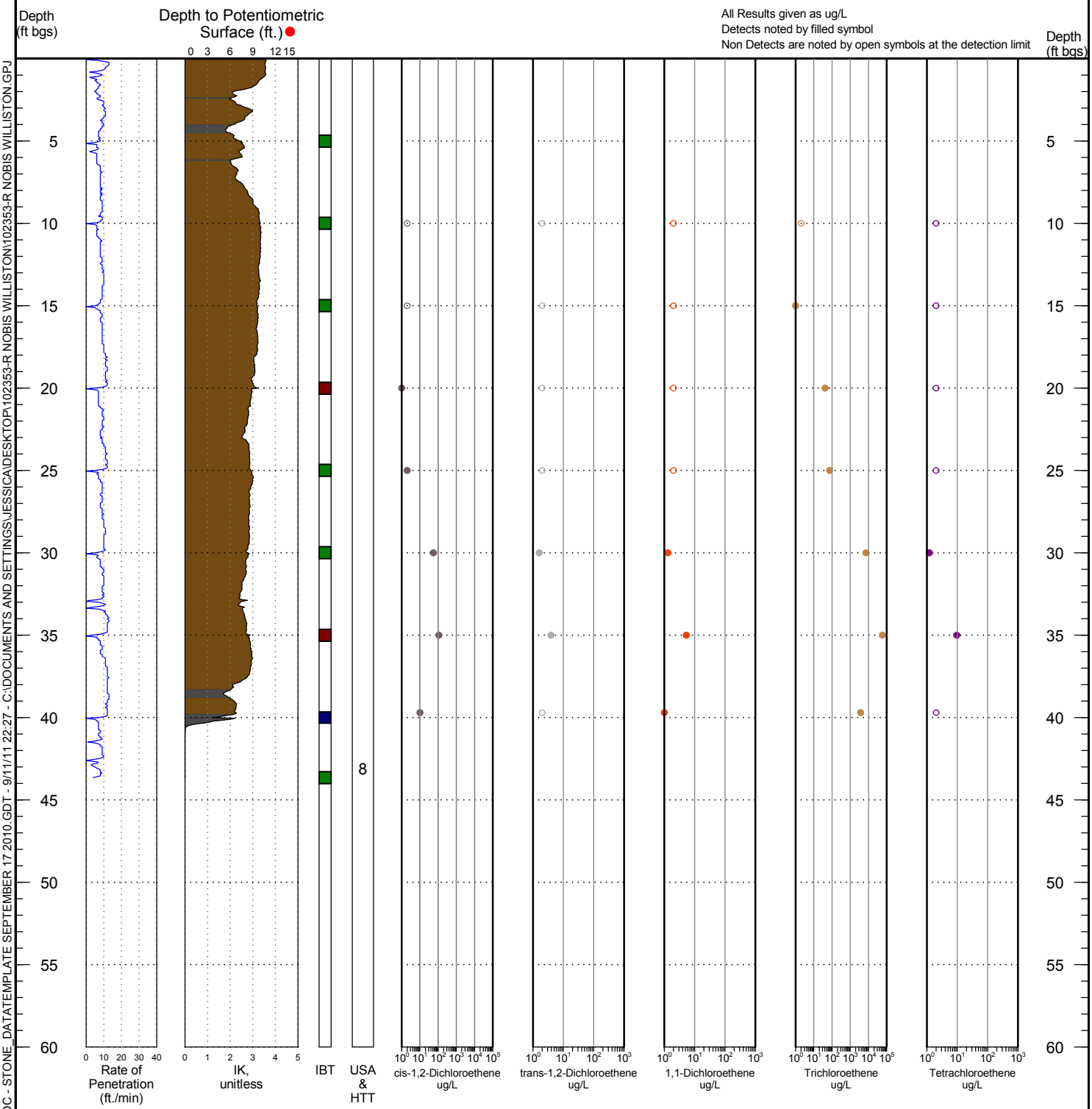
BORING NAME WP-01

Total Depth 43.65 ft.

MobiLab™
DEFENSIBLE REAL-TIME ANALYTICS

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



IK Scale

0 to 0.1	
0.1 to 2	
2 to 4	
4 to 6	
>6	

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

WATERLOO APS & VOC - STONE_DATATEMPLATE SEPTEMBER 17 2010.GDT - 9/11/11 22:27 - C:\DOCUMENTS AND SETTINGS\JESSICA\DESKTOP\102353-R NOBIS WILLISTON\102353-R NOBIS WILLISTON.GPJ

BORING NAME WP-02

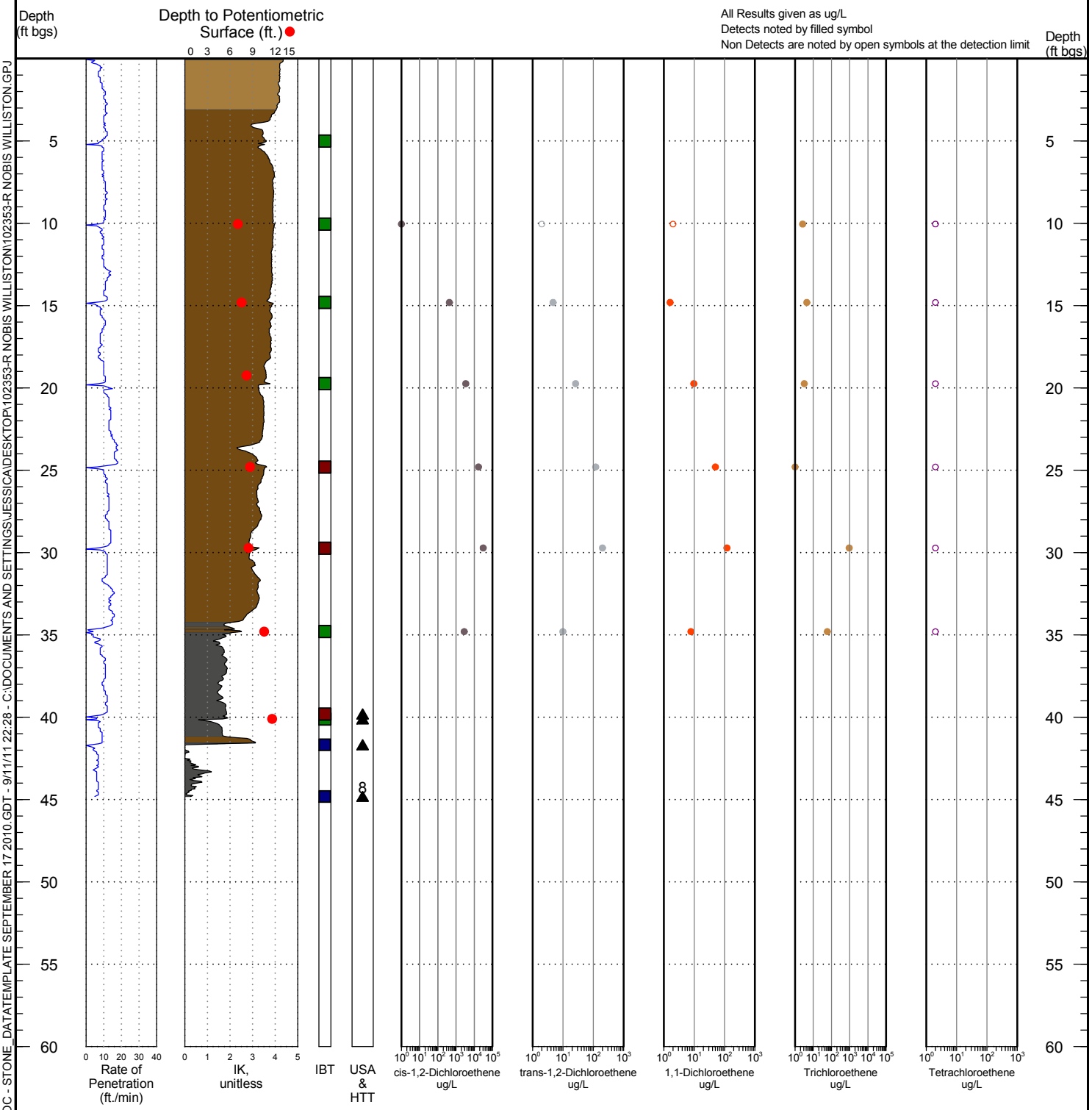
Total Depth 44.81 ft.

MobiLab™
DEFENSIBLE REAL-TIME ANALYTICS

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

All Results given as ug/L
Detects noted by filled symbol
Non Detects are noted by open symbols at the detection limit



IK Scale

- 0 to 0.1
- 0.1 to 2
- 2 to 4
- 4 to 6
- >6

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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

BORING NAME WP-03

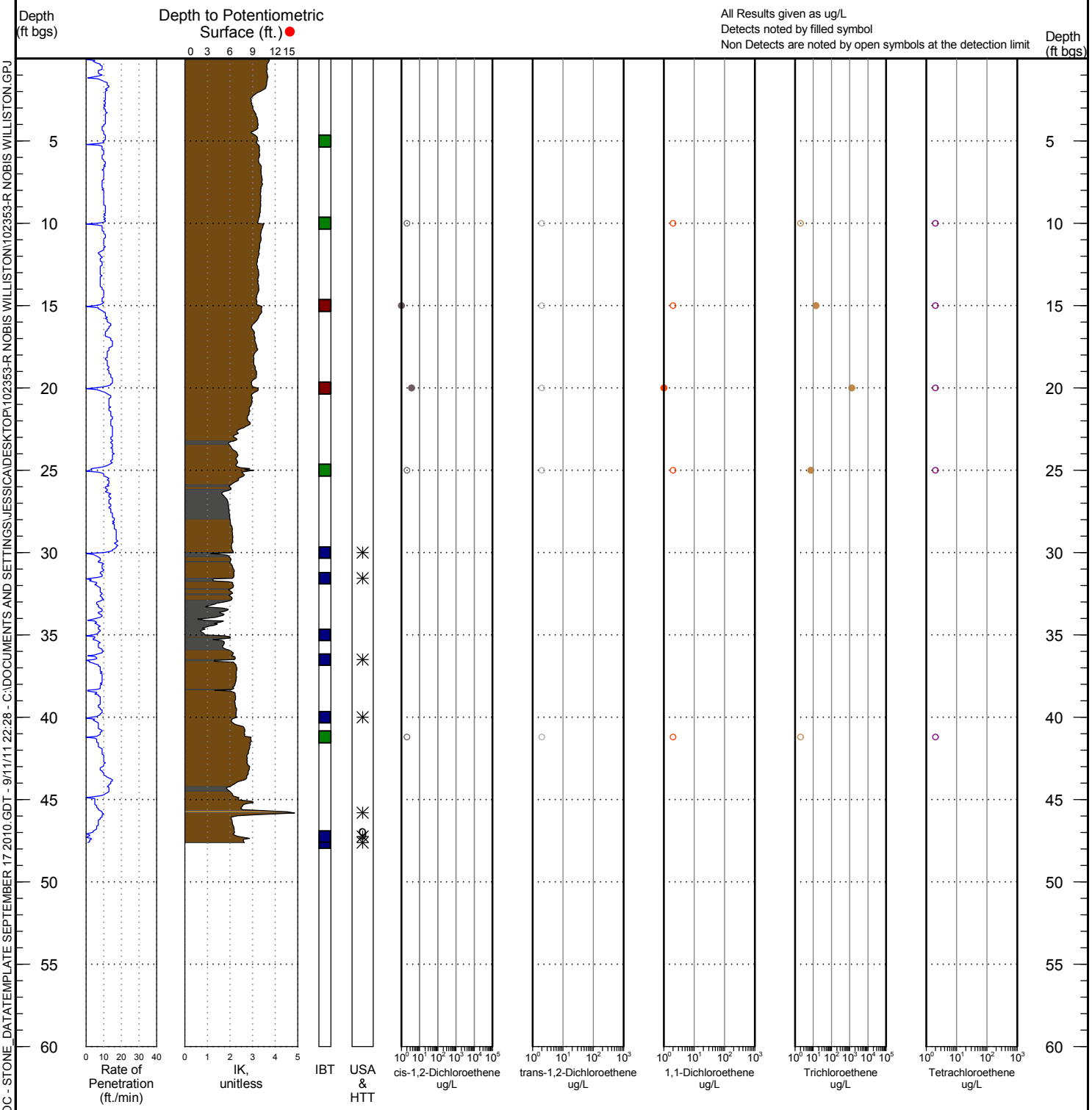
Total Depth 45.8 ft.

MobiLab™
DEFENSIBLE REAL-TIME ANALYTICS

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

All Results given as ug/L
Detects noted by filled symbol
Non Detects are noted by open symbols at the detection limit



IK Scale

- 0 to 0.1
- 0.1 to 2
- 2 to 4
- 4 to 6
- >6

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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

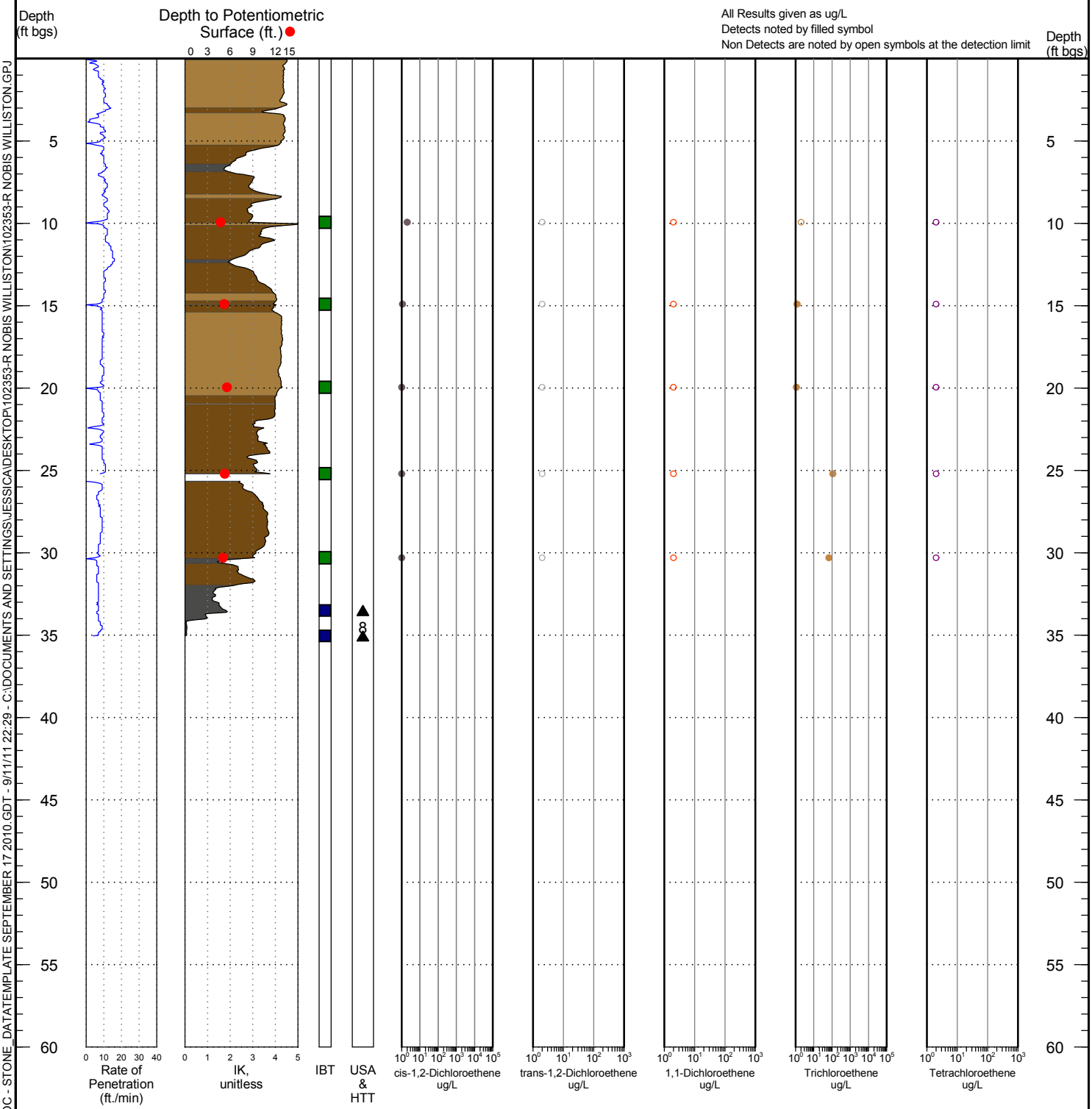
BORING NAME WP-04

Total Depth 35.05 ft.

MobiLab™
DEFENSIBLE REAL-TIME ANALYTICS

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



IK Scale

0 to 0.1	
0.1 to 2	
2 to 4	
4 to 6	
>6	

Legend

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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

BORING NAME WP-05

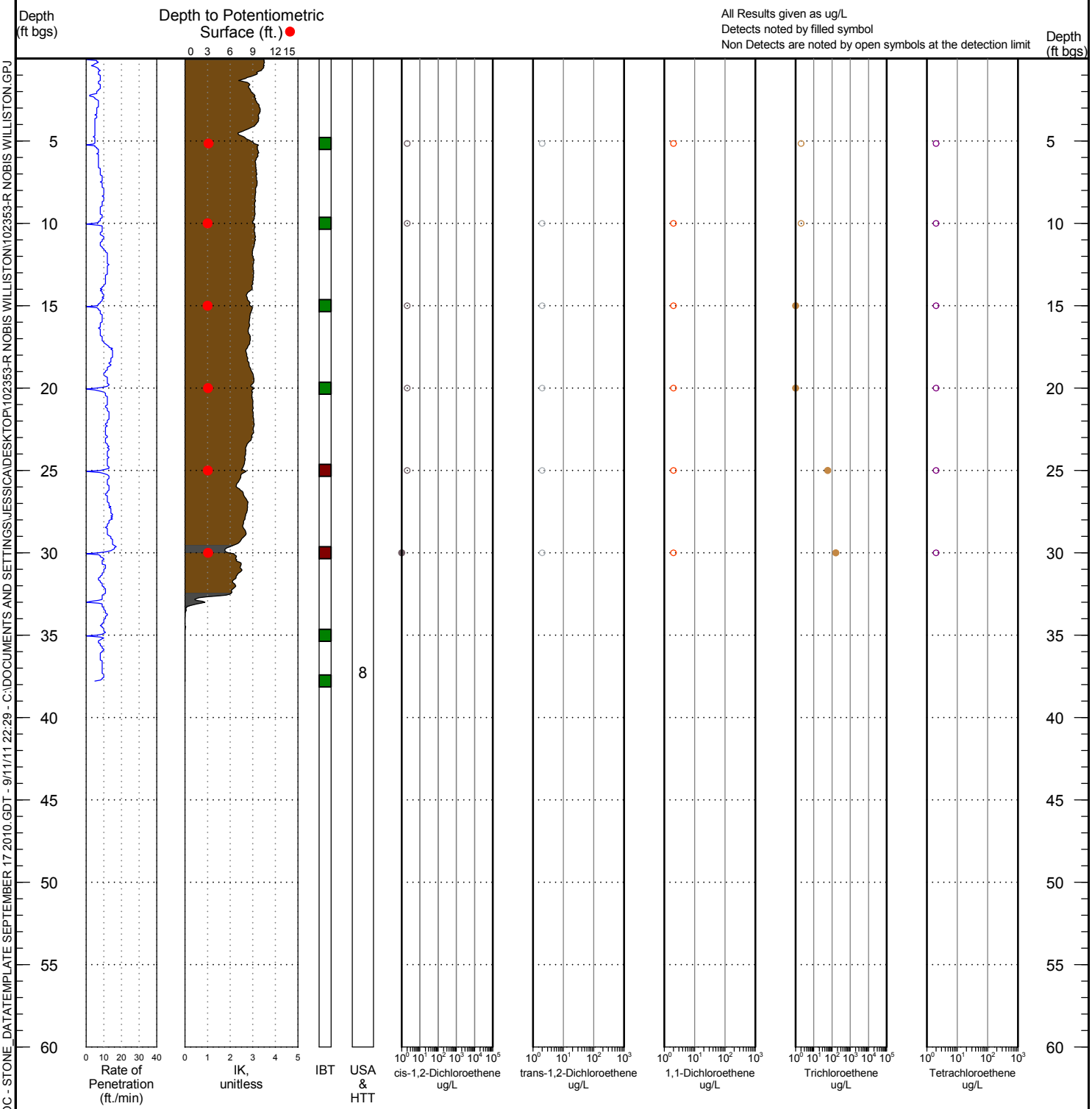
Total Depth 37.78 ft.

MobiLab™
DEFENSIBLE REAL-TIME ANALYTICS

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

All Results given as ug/L
Detects noted by filled symbol
Non Detects are noted by open symbols at the detection limit



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- 4 to 6
- >6

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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

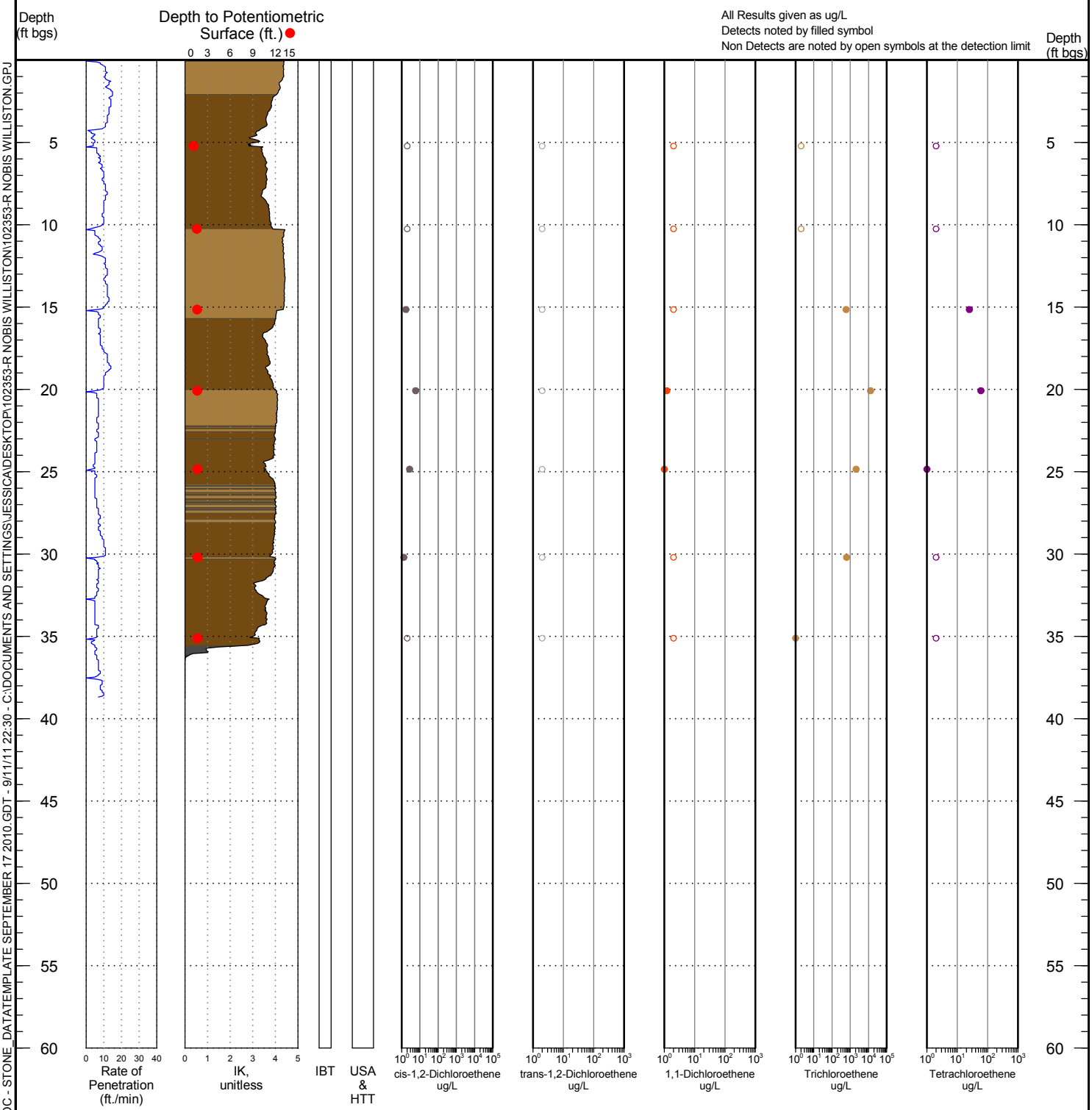
BORING NAME WP-06

Total Depth 38.68 ft.

MobiLab™
DEFENSIBLE REAL-TIME ANALYTICS

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



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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

BORING NAME WP-07

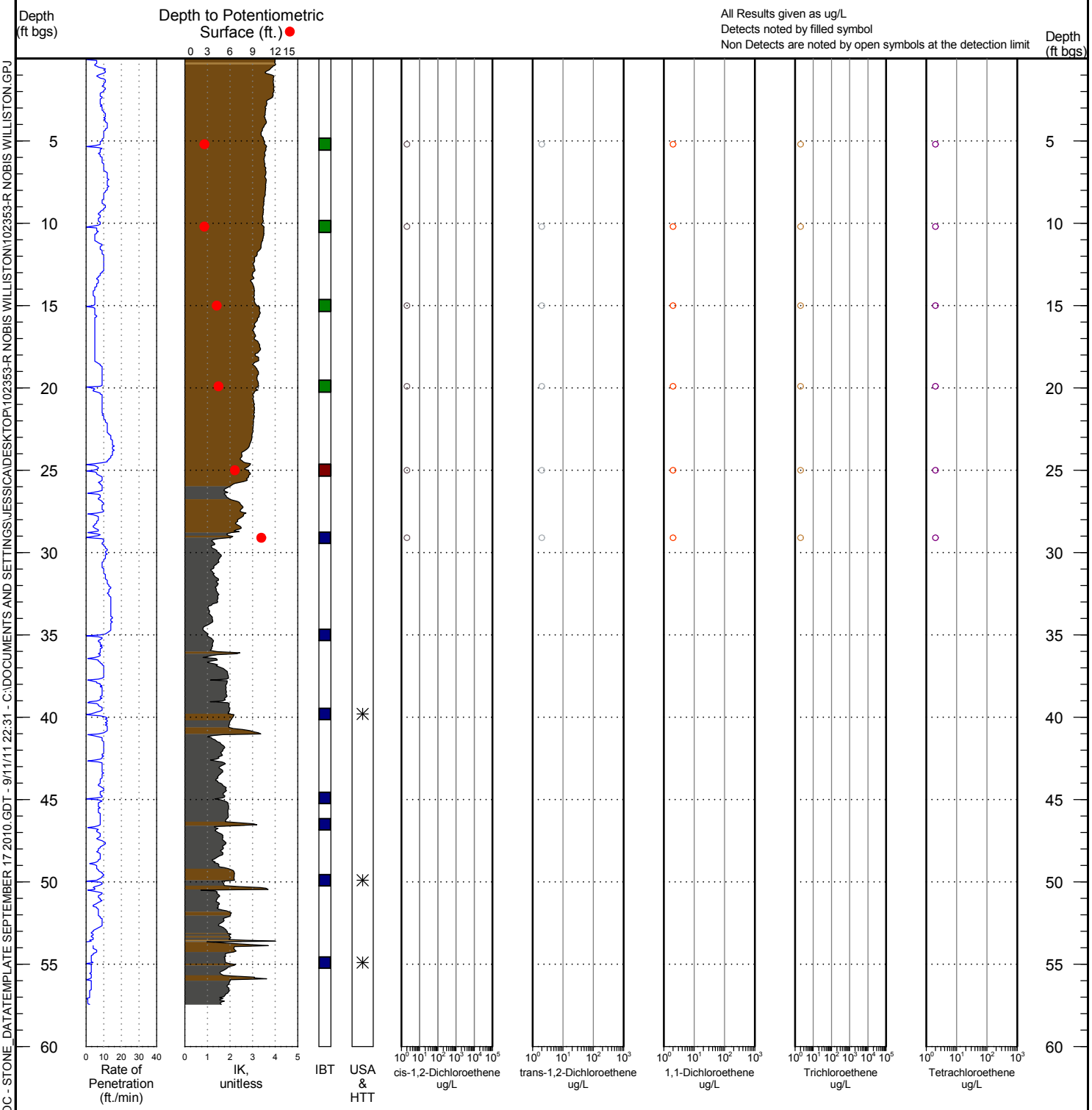
Total Depth 57.34 ft.

MobiLab™
DEFENSIBLE REAL-TIME ANALYTICS

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

All Results given as ug/L
Detects noted by filled symbol
Non Detects are noted by open symbols at the detection limit



IK Scale

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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

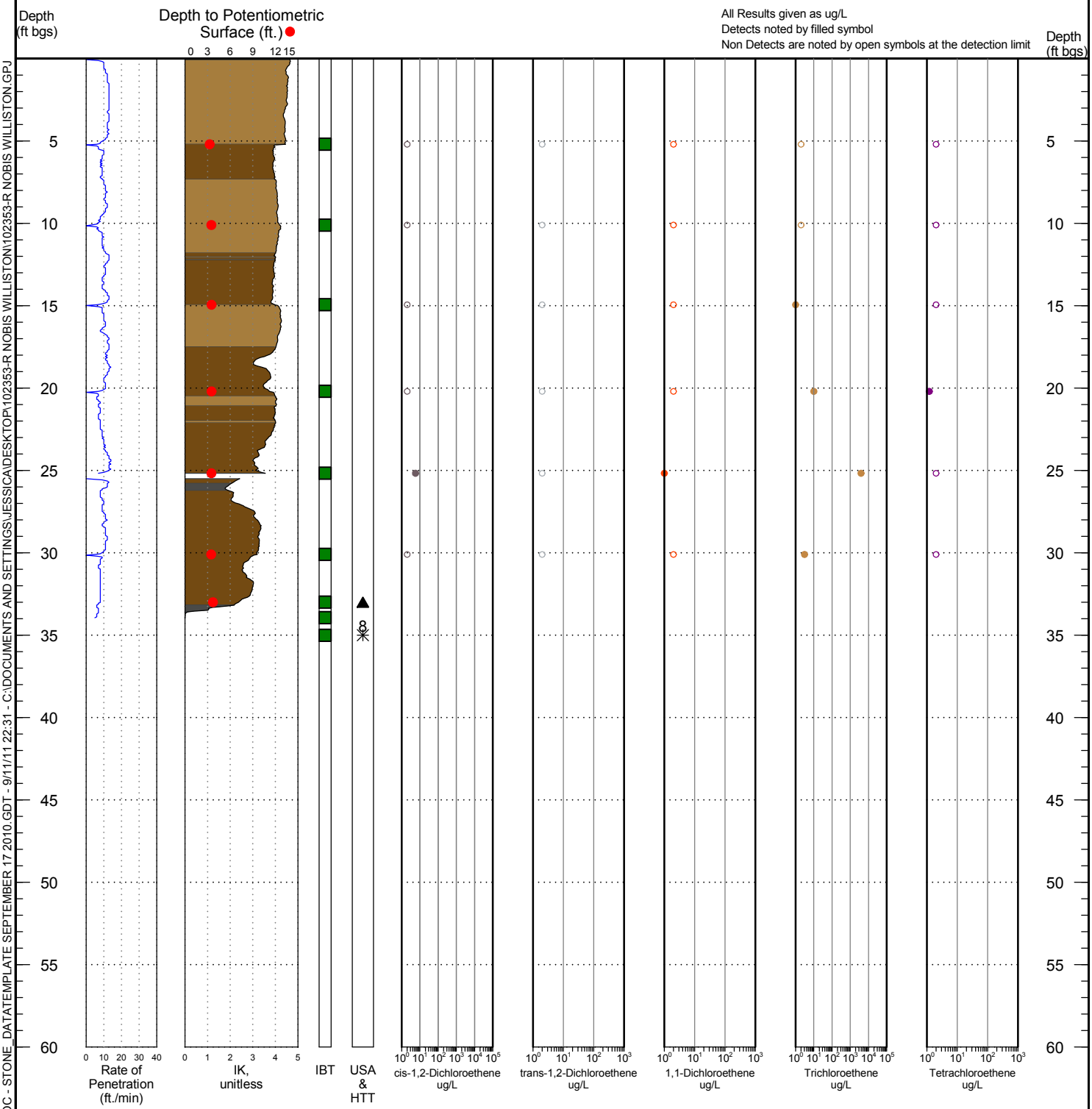
BORING NAME WP-08

Total Depth 33.94 ft.

MobiLab™
DEFENSIBLE REAL-TIME ANALYTICS

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



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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

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

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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MobiLab™

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 By	Collected Date	Collected Time	Received By	Received Date	Received Time	Type*	Container**	Number of Containers	Preservation***	Analysis: ASTM D6520 & Modified 8021/8015	Analysis: 8260	Analysis: Other ____	Lab ID	Analyst	Comments
VP 48-15	NOBIS	8/30/11	0845	MJM	8/30/11	0900	1	2	2	–		✓		SEI-3	MJM	
VP49-10	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	
VP49-30	"	"	1510	"	"	"								SEI-8	MJM	
VP49-35	"	"	1540	"	"	"								SEI-9	MJM	
VP49-37.5	"	"	1615	"	"	"								SEI-10	MJM	
VP48-20	"	8/30/11	0915	"	"	1020								SEI-11	MJM	
VP48-25	"	"	0955	"	"	1020								SEI-12	MJM	
VP48-30	"	"	1035	"	"	1135								SEI-13	MJM	
VP48 35	"	"	1120	"	"	1135								SEI-14	MJM	
VP48-40	"	"	1200	"	"	1310								SEI-15	MJM	
VP 48 45	"	"	1250	"	"	1310								SEI-16	MJM	
VP52-15	"	"	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:

STONE ENVIRONMENTAL INC

Nobis
Williston VT

Mobile Lab 2 – SAMPLE LOG SHEET

Sampling in accordance with Method / SEI SOP:
☐ SEI 10.5.n Groundwater Profiling and KPRO Testing.
☐ _____

Sample ID	Collected By	Collected Date	Collected Time	Received By	Received Date	Received Time	Type*	Container**	Number of Containers	Preservation***	Analysis: ASTM D6520 & Modified 8021/8015	Analysis: 8260	Analysis: Other ____	Lab ID	Analyst	Comments
VP52-45	KAK	8/30/11	1800	MJM	8/31/11	0720	1	2	2	–		✓		SE1-23	MJM	
WP-01-EB-01	LJR	8/31/11	0730	"	"	0751	1	2	2	–		✓		SE1-24	MJM	
WP-02-EB-01	DC	"	0758	"	"	0808	1	2	2	–		✓		SE1-25	MJM	
WP-01-10.0	LJR	8/31/11	0836	"	"	0947	1	2	2	–		✓		SE1-26	MJM	
WP-01-15.0	LJR	"	0906	"	"	0947	1	2	2	–		✓		SE1-27	MJM	
WP-02-10.05	DC	"	0920	"	"	0957	1	2	2	–		✓		SE1-28	MJM	
WP-02-14.81	DC	"	0949	"	"	0957	1	2	2	–		✓		SE1-29	MJM	
WP-01-20.0	LJR	"	0956	"	"	1009	1	2	2	–		✓		SE1-31	MJM	
WP-01-30	LJR	"	1057	"	"	1115	1	2	2	–		✓		SE1-32	MJM	
WP-02-24.8	DC	"	1049	"	"	1115	1	2	2	–		✓		SE1-33	MJM	
WP-02-19.74	"	"	1026 HMB/31/11 15	"	"	1115 MJM ~~1026~~ EB	1	2	2	–		✓		SE1-34	MJM	
WP-01-25.0	LJR	"	1026	"	"	1115	1	2	2	–		✓		SE1-35	MJM	
WP-01-35	LJR	"	1131	"	"	1245	1	2	2	–		✓		SE1-36	MJM	
WP-01-39.7	"	"	1228	"	"	1245	1	2	2	–		✓		SE1-37	MJM	
WP-02-29.72	DC	"	1123	"	"	1245	1	2	2	–		✓		SE1-38	MJM	
WP-02-34.8	"	"	1205	"	"	1245	1	2	2	–		✓		SE1-39	MJM	MS/D
WP-03-EB-01	LJR	"	1300	"	"	1330	1	2	2	–		✓		SE1-40	MJM	
WP-03-10.0	"	"	1359	"	"	1454	1	2	2	–		✓		SE1-41	MJM	
WP-03-15.0	"	"	1438	"	"	1454	1	2	2	–		✓		SE1-42	MJM	
WP-05-25.0	"	9/1/11	1249	"	9/1/11	1430	1	2	2	–		✓		SE1-62	MJM	

* Type of Sample: (1) water (2) soil
** Container: (1) bag (2) bottle (3) other _____
*** Preservation: (1) ice (2) HCl (3) Other _____

STONE ENVIRONMENTAL INC

L:\RASC\Analytical\Forms\Moblie Lab 2 – Sample Log Sheet.doc Mobile Lab 1 is VIN# 1UK500G29V1022699 Mobil Lab 2 is VIN# 1UK500F2541047129
C:\Forms\Mobile Lab 2 – Sample Log Sheet.doc Truck 2 is VIN# JW6CEJ1G7SL002457

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Nobis
Williston VT

Mobile Lab 2 – SAMPLE LOG SHEET

Sampling in accordance with Method / SEI SOP:
☐ SEI 10.5.*n* Groundwater Profiling and KPRO Testing.
☐ _____

Sample ID	Collected By	Collected Date	Collected Time	Received By	Received Date	Received Time	Type*	Container**	Number of Containers	Preservation***	Analysis: ASTM D6520 & Modified 8021/8015	Analysis: 8260	Analysis: Other ____	Lab ID	Analyst	Comments
WP-04-EB-01	DC	8/31/11	1254	MJM	8/31/11	1315	1	2	2	-		✓		SE1-43	MJM	
WP-04-9.93	"	"	1459	"	"	1515	1	2	2	-		✓		SE1-44	MJM	
WP-04-14.90	"	"	1533	"	"	1720	1	2	2	-		✓		SE1-45	MJM	
WP04-19.95	"	"	1557	"	"	1720	1	2	2	-		✓		SE1-46	MJM	
WP-04-25.2	"	"	1641	"	"	1720	1	2	2	-		✓		SE1-47	MJM	
WP04-30.30	DC	8/31/11	1736	"	8/31/11	1750	1	2	2	-		✓		SE1-48	MJM	
WP03-41.2	LJR	8/31/11	1714	"	8/31/11	1750	1	2	2	-		✓		SE1-49	MJM	
WP05-EB-01	DC	9/1/11	0832	"	9/1/11	0835	1	2	2	-		✓		SE1-~~505~~	MJM	MJM 9/1/11
WP05-EB-02	LJR	9/1/11	0845	"	9/1/11	0846	1	2	2	-		✓		SE1-50	MJM	
WP-5-10	"	"	1113	"	"	1130	1	2	2	-		✓		SE1-52	MJM	
5-5.15	"	"	1037	"	"	1130	1	2	2	-		✓		SE1-53	MJM	
WP-06-5.22	DC	"	~~1125~~ 1125 MJM 9/1/11	"	"	1130	1	2	2	-		✓		SE-54	MJM	
WP-06-15.15	"	"	1125 MJM 9/1/11	"	"	1130	1	2	2	-		✓		SE1-55	MJM	
WP-06-10.25	"	"	1053	"	"	1130	1	2	2	-		✓		SE1-56	MJM	
WP-06-15.15-FD	"	"	1125	"	"	1130	1	2	2	-		✓		SE1-~~56~~ 55 FD MJM 9/1/11	MJM	
WP-06-20.08	"	"	1206	"	"	1230	1	2	2	-		✓		SE1-59	MJM	
WP-05-20.0	LJR	"	1216	"	"	1230	1	2	2	-		✓		SE1-60	MJM	
WP-05-15	"	"	1140	"	"	1230	1	2	2	-		✓		SE1-61	MJM	
WP-05-30.0	"	"	1331	"	"	1431	1	2	2	-		✓		SE1-63	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:

STONE ENVIRONMENTAL INC

Nobis
Williston VT

Mobile Lab 2 – SAMPLE LOG SHEET

Sampling in accordance with Method / SEI SOP:
☐ SEI 10.5.n Groundwater Profiling and KPRO Testing.
☐ _____

Sample ID	Collected By	Collected Date	Collected Time	Received By	Received Date	Received Time	Type*	Container**	Number of Containers	Preservation***	Analysis: ASTM D6520 & Modified 8021/8015	Analysis: 8260	Analysis: Other ____	Lab ID	Analyst	Comments
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	-		✓		SE176	MJM	
WP-08-14.94	"	"	1614	"	"	1655	1	2	2	-		✓		SE177	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	KAK	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 _____
*** Preservation: (1) ice (2) HCl (3) Other _____

STONE ENVIRONMENTAL INC

L:\RASC\Analytical\Forms\Moblie Lab 2 – Sample Log Sheet.doc Mobile Lab 1 is VIN# 1UK500G29V1022699 Mobil Lab 2 is VIN# 1UK500F2541047129
C:\Forms\Mobile Lab 2 – Sample Log Sheet.doc Truck 2 is VIN# JW6CEJ1G7SL002457

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Nobis
Williston VT

Mobile Lab 2 – SAMPLE LOG SHEET

Sample ID	Collected By	Collected Date	Collected Time	Received By	Received Date	Received Time	Type*	Container**	Number of Containers	Preservation***	Analysis: ASTM D6520 & Modified 8021/8015	Analysis: 8260	Analysis: Other ____	Lab ID	Analyst	Comments
VP-51-20	KAK	9/2/11	0930	MJM	9/2/11	0936	1	2	2	+		✓		SE185	MJM	MS/D
VP51-25	"	"	0950	"	"	~~0955~~ 1030	1	2	2	-		✓		SE186	MJM	
VP51-30	"	"	1010	"	"	1030	1	2	2	-		✓		SE187	MJM	
VP51-40	"	"	1125	"	"	1135	1	2	2	-		✓		SE1-88	MJM	FD = SEI-88-FD
VP51-35	"	"	1050	"	"	1135	1	2	2	-		✓		SE1-89	MJM	

Sampling in accordance with Method / SEI SOP:
☐ SEI 10.5.*n* Groundwater Profiling and KPRO Testing.
☐ _____

* Type of Sample: (1) water (2) soil
** Container: (1) bag (2) bottle (3) other _____
*** Preservation: (1) ice (2) HCl (3) Other _____

STONE ENVIRONMENTAL INC

L:\RASC\Analytical\Forms\Moblie Lab 2 – Sample Log Sheet.doc Mobile Lab 1 is VIN# 1UK500G29V1022699 Mobil Lab 2 is VIN# 1UK500F2541047129
C:\Forms\Mobile Lab 2 – Sample Log Sheet.doc Truck 2 is VIN# JW6CEJ1G7SL002457

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85 samples total + ms/D's

LABORATORY ANALYTICAL RESULTS

Onsite Laboratory Results Mobile Laboratory 2

Client:	Nobis	**Report Date:**	9/13/2011
Location:	Williston, VT	**Date(s) Sampled:**	08/30/2011 - 08/30/2011
Project ID:	Nobis	**Date(s) Analyzed:**	08/30/2011 - 08/30/2011
SEI Project No.:	11NOBIS-R	**Test Method:**	SW8260B,SW8260B
Matrix:	GW	**Results Given as:**	ug/L
Location ID:	VP48		

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	CAS #	01500		02000		02500		03000		03500		04000		04500	
Sample Name		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	8/30/2011	N	8/30/2011	N	8/30/2011	N	8/30/2011	N	8/30/2011	N	8/30/2011	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	3.2		3.0		7.9		2.4		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
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	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	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	**Report Date:**	9/13/2011
Location:	Williston, VT	**Date(s) Sampled:**	08/29/2011 - 08/29/2011
Project ID:	Nobis	**Date(s) Analyzed:**	08/30/2011 - 08/30/2011
SEI Project No.:	11NOBIS-R	**Test Method:**	SW8260B,SW8260B
Matrix:	GW	**Results Given as:**	ug/L
Location ID:	VP49		

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	CAS #	010.00		015.00		020.00		025.00		030.00		035.00		037.50	
Sample Name		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	8/30/2011	N	8/30/2011	N	8/30/2011	N	8/30/2011	N	8/30/2011	N	8/30/2011	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	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
Trichloroethene	79-01-6	69		2.0	U	2.0	U	35		440		390		49	
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	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:		**Report Date:**	9/13/2011
Location:	Williston, VT	**Date(s) Sampled:**	09/02/2011 - 09/02/2011
Project ID:	Nobis	**Date(s) Analyzed:**	09/02/2011 - 09/02/2011
SEI Project No.:		**Test Method:**	SW8260B,SW8260B
Matrix:	GW	**Results Given as:**	ug/L
Location ID:	VP51		

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	CAS #	010.00		015.00		020.00		025.00		030.00		035.00		040.00		040.00	
Sample Name		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	N	9/2/2011	N	9/2/2011	N	9/2/2011	N	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	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	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:		**Report Date:**	9/13/2011
Location:	Williston, VT	**Date(s) Sampled:**	08/30/2011 - 08/30/2011
Project ID:	Nobis	**Date(s) Analyzed:**	08/30/2011 - 08/31/2011
SEI Project No.:		**Test Method:**	SW8260B,SW8260B
Matrix:	GW	**Results Given as:**	ug/L
Location ID:	VP52		

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	CAS #	015.00		020.00		025.00		030.00		035.00		040.00		045.00	
Sample Name		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	8/31/2011	N	8/31/2011	N	8/31/2011	N	8/31/2011	N	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	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	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
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
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	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:		**Report Date:**	9/13/2011
Location:	Williston, VT	**Date(s) Sampled:**	08/31/2011 - 08/31/2011
Project ID:	Nobis	**Date(s) Analyzed:**	08/31/2011 - 09/01/2011
SEI Project No.:		**Test Method:**	SW8260B,SW8260B
Matrix:	GW	**Results Given as:**	ug/L
Location ID:	WP-01		

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	CAS #	001.00		010.00		015.00		020.00		025.00		030.00		035.00		039.70	
Sample Name		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	8/31/2011	N	8/31/2011	N	8/31/2011	N	8/31/2011	N	8/31/2011	N	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:		**Report Date:**	9/13/2011
Location:	Williston, VT	**Date(s) Sampled:**	08/31/2011 - 08/31/2011
Project ID:	Nobis	**Date(s) Analyzed:**	08/31/2011 - 09/01/2011
SEI Project No.:		**Test Method:**	SW8260B,SW8260B
Matrix:	GW	**Results Given as:**	ug/L
Location ID:	WP-02		

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	CAS #	001.00		010.05		014.81		019.74		024.80		029.72		034.80	
Sample Name		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	8/31/2011	N	8/31/2011	N	8/31/2011	N	8/31/2011	N	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:		**Report Date:**	9/13/2011
Location:	Williston, VT	**Date(s) Sampled:**	08/31/2011 - 08/31/2011
Project ID:	Nobis	**Date(s) Analyzed:**	08/31/2011 - 09/01/2011
SEI Project No.:		**Test Method:**	SW8260B,SW8260B
Matrix:	GW	**Results Given as:**	ug/L
Location ID:	WP-03		

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	CAS #	001.00		010.00		015.00		020.00		025.00		041.20	
Sample Name		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:		**Report Date:**	9/13/2011
Location:	Williston, VT	**Date(s) Sampled:**	08/31/2011 - 08/31/2011
Project ID:	Nobis	**Date(s) Analyzed:**	08/31/2011 - 09/01/2011
SEI Project No.:		**Test Method:**	SW8260B,SW8260B
Matrix:	GW	**Results Given as:**	ug/L
Location ID:	WP-04		

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	CAS #	001.00		009.93		014.90		019.95		025.20		030.30	
Sample Name		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	**Report Date:**	9/13/2011
Location:	Williston, VT	**Date(s) Sampled:**	09/01/2011 - 09/01/2011
Project ID:	Nobis, Williston	**Date(s) Analyzed:**	09/01/2011 - 09/01/2011
SEI Project No.:	112353-R	**Test Method:**	SW8260B,SW8260B
Matrix:	GW	**Results Given as:**	ug/L
Location ID:	WP-05		

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	CAS #	00100		00515		01000		01500		02000		02500		03000	
Sample Name		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	9/1/2011	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	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:		**Report Date:**	9/13/2011
Location:	Williston, VT	**Date(s) Sampled:**	09/01/2011 - 09/01/2011
Project ID:	Nobis	**Date(s) Analyzed:**	09/01/2011 - 09/02/2011
SEI Project No.:		**Test Method:**	SW8260B,SW8260B
Matrix:	GW	**Results Given as:**	ug/L
Location ID:	WP-06		

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	CAS #	001.00		005.22		010.25		015.15		015.15		020.08		024.85		030.20	
Sample Name		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	CAS #	035.11	
Sample Name		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	**Report Date:**	9/13/2011
Location:	Williston, VT	**Date(s) Sampled:**	09/01/2011 - 09/01/2011
Project ID:	Nobis, Williston	**Date(s) Analyzed:**	09/01/2011 - 09/02/2011
SEI Project No.:	112353-R	**Test Method:**	SW8260B,SW8260B
Matrix:	GW	**Results Given as:**	ug/L
Location ID:	WP-07		

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	CAS #	00100		00520		01020		01500		01500		01990		02500		02910	
Sample Name		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:		**Report Date:**	9/13/2011
Location:	Williston, VT	**Date(s) Sampled:**	09/01/2011 - 09/01/2011
Project ID:	Nobis	**Date(s) Analyzed:**	09/01/2011 - 09/02/2011
SEI Project No.:		**Test Method:**	SW8260B,SW8260B
Matrix:	GW	**Results Given as:**	ug/L
Location ID:	WP-08		

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	CAS #	001.00		005.20		010.10		014.94		020.20		025.17		030.10		030.10	
Sample Name		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	N	9/2/2011	N	9/2/2011	N	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	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

STONE ENVIRONMENTAL INC

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$^{APS\ TM}$), NELAP-accredited onsite laboratory services (MobiLab^{TM}), characterization of rock environments via the discrete fracture network approach (CORE$^{DFN\ TM}$), 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 WaterlooAPS TM 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 WaterlooAPS is a proprietary modification of the original Waterloo Profiler developed by Dr. John Cherry's research team at the University of Waterloo.

The WaterlooAPS 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 MobiLabTM 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

COREDFN TM is a unique solution for investigating contamination in fractured, porous bedrock aquifers. Developed by Professor Beth Parker and her research team, COREDFN 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

PlatformTM 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.

Contact

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High-Resolution Site Characterization

Systematic Project Planning/Support

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Membrane Interface Probe Geoprobe® Services

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Field Investigation Services

STONE ENVIRONMENTAL INC

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APPENDIX I

Slug Testing Memorandum

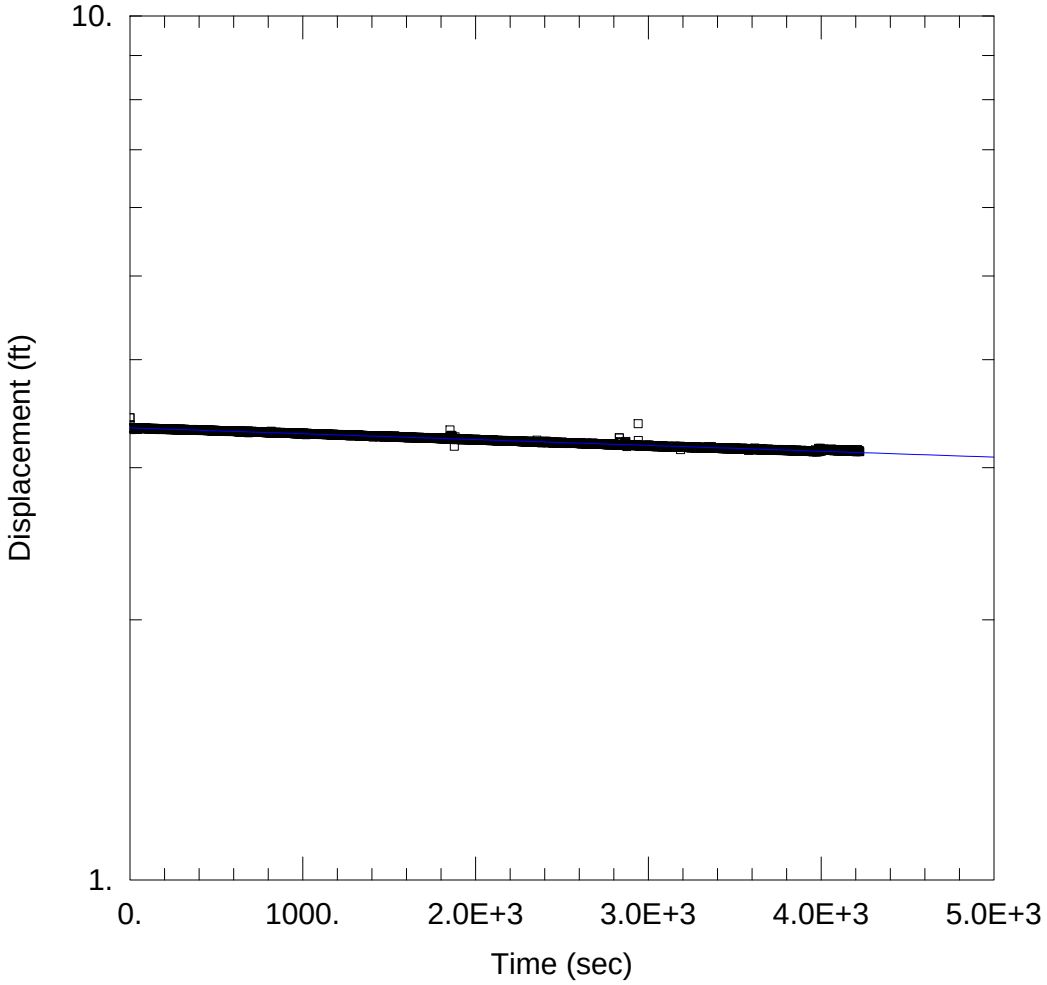
Slug testing was performed using a 1.25-inch PVC rod at 5 monitoring wells on January 25, 2013. For each well, a falling-head test (slug insertion) and a rising-head test (slug removal) was performed according to Nobis Standard Operating Procedure NEISOP-17: Procedures for Rising and Falling Head Tests. If results had significant scatter or other problems, both sets of tests were redone. A vented LevelTROLL 700 from in-situ was used to record water levels in terms of height of water above the transducer. Readings were recorded every ¼ second (250 milliseconds). All of the water levels recorded during the tests indicated that the top of water was at least several feet above the top of the well screen; therefore, both rising head and falling head test results were considered to be valid.

The only exception was BR-1, which had an extremely slow response to removal of tubing from the well. Therefore, after tubing removal in the morning, the well was allowed to recover for the rest of the day. Because of the limited time available, only a falling head test was performed. Water level readings for BR-1 were recorded every second given the slow response rate.

Each slug test determined to be valid was analyzed using the Bouwer and Rice method for a confined aquifer for BR-1 and an unconfined aquifer for the other monitoring wells. The bottom of the well was assumed to be the bottom of the confining unit for BR-1, and the top of the clay was considered to be the lower confining unit for the other monitoring wells. Depth to top of clay for each location was determined based on the contours provided in the 2010 surface geophysics report for the study area (Hager Geoscience, 2010).

Slug test results are tabulated below:

well ID	test #	test type	K (ft/day)	notes	final K (ft/day)
BR-1	1	falling	--	water levels not stabilized - data not evaluated	
BR-1	2	rising	--	water levels not stabilized - data not evaluated	
BR-1	3	falling	8.56E-04	no data issues	8.56E-04
MW-6M	1	falling	4.251	scatter at end of test - averaged for final K	
MW-6M	2	rising	4.015	scatter at end of test - averaged for final K	4.133
MW-7M	1	falling	2.468	no data issues	
MW-7M	2	rising	2.089	no data issues	2.279
MW-8S	1	falling	--	recording inadvertently suspended - not used	
MW-8S	2	rising	15.42	no data issues	
MW-8S	3	falling	14.68	some scatter at beginning/end of test	
MW-8S	4	rising	15.64	no data issues	15.25
MW-11S	1	falling	--	erratic data at beginning and end - not used	
MW-11S	2	rising	27.12	no data issues	
MW-11S	3	falling	--	significant scatter throughout test - not used	
MW-11S	4	rising	25.05	no data issues	26.09



COMMERCE ST. PLUME

Data Set: R:\...\BR-1_test3_falling.aqt
Date: 01/29/13 Time: 16:03:57

PROJECT INFORMATION

Company: Nobis Engineering
Client: EPA
Project: 80036
Location: Williston, VT
Test Well: BR-1
Test Date: 01/25/13

AQUIFER DATA

Saturated Thickness: 100.7 ft Anisotropy Ratio (Kz/Kr): 0.1

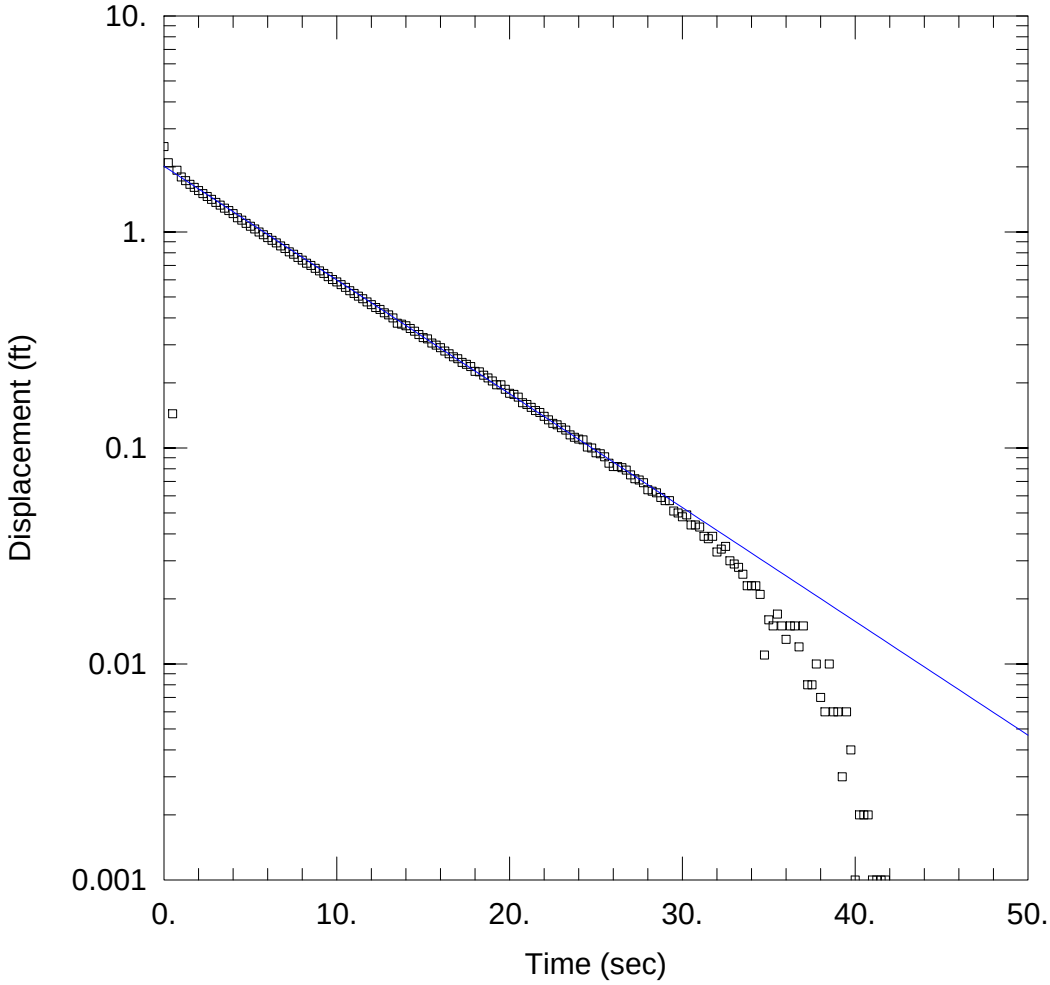
WELL DATA (BR-1)

Initial Displacement: 3.427 ft Static Water Column Height: 100.7 ft
Total Well Penetration Depth: 123. ft Screen Length: 10. ft
Casing Radius: 0.052 ft Well Radius: 0.052 ft

SOLUTION

Aquifer Model: Confined Solution Method: Bouwer-Rice

K = 0.0008561 ft/day y0 = 3.335 ft



COMMERCE ST. PLUME

Data Set: R:\...\MW-11S_test2_rising.aqt
Date: 01/30/13 Time: 08:30:20

PROJECT INFORMATION

Company: Nobis Engineering
Client: EPA
Project: 80036
Location: Williston, VT
Test Well: MW-11S
Test Date: 01/25/13

AQUIFER DATA

Saturated Thickness: 32. ft Anisotropy Ratio (Kz/Kr): 0.1

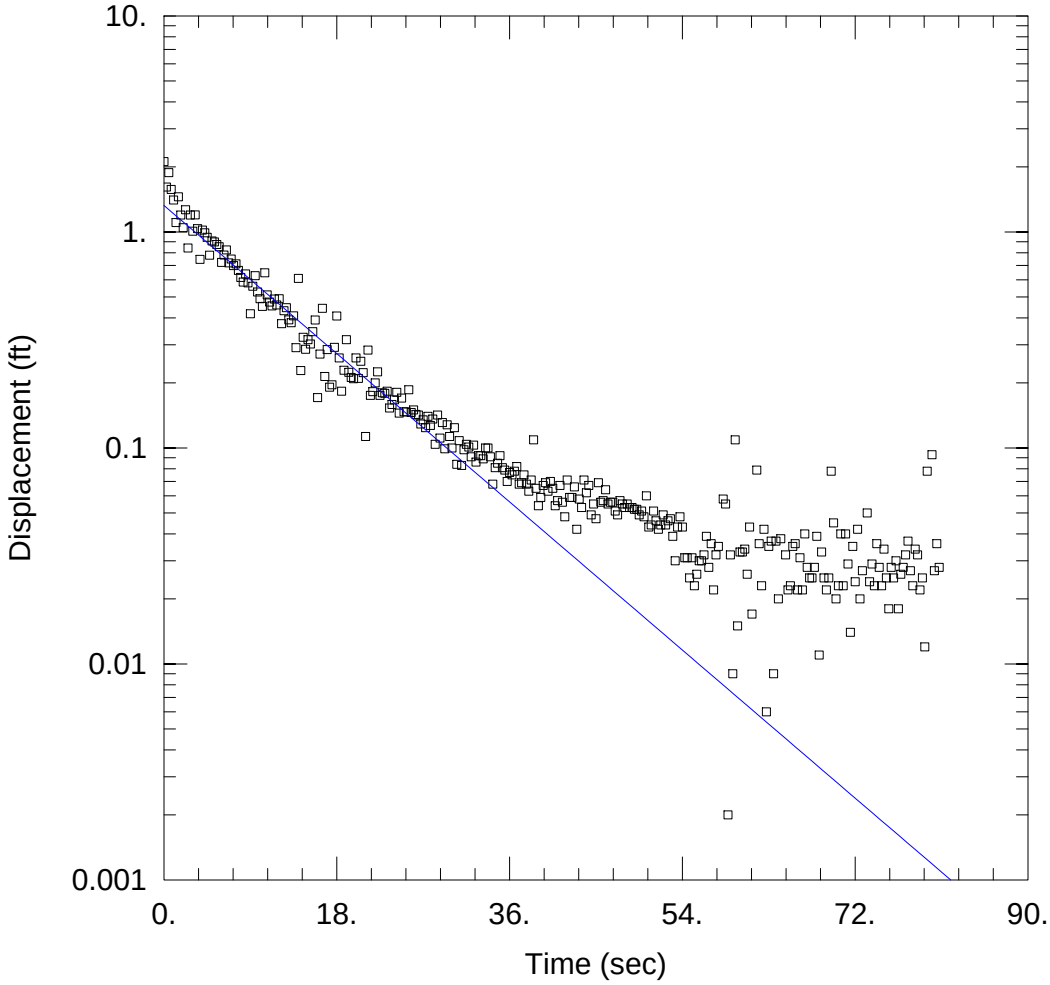
WELL DATA (MW-11S)

Initial Displacement: 2.486 ft Static Water Column Height: 11.98 ft
Total Well Penetration Depth: 19.3 ft Screen Length: 5. ft
Casing Radius: 0.0833 ft Well Radius: 0.0833 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 27.12 ft/day y0 = 2.015 ft



COMMERCE ST. PLUME

Data Set: R:\...\MW-11S_test3_falling.aqt
Date: 01/30/13 Time: 08:30:53

PROJECT INFORMATION

Company: Nobis Engineering
Client: EPA
Project: 80036
Location: Williston, VT
Test Well: MW-11S
Test Date: 01/25/13

AQUIFER DATA

Saturated Thickness: 32. ft Anisotropy Ratio (Kz/Kr): 0.1

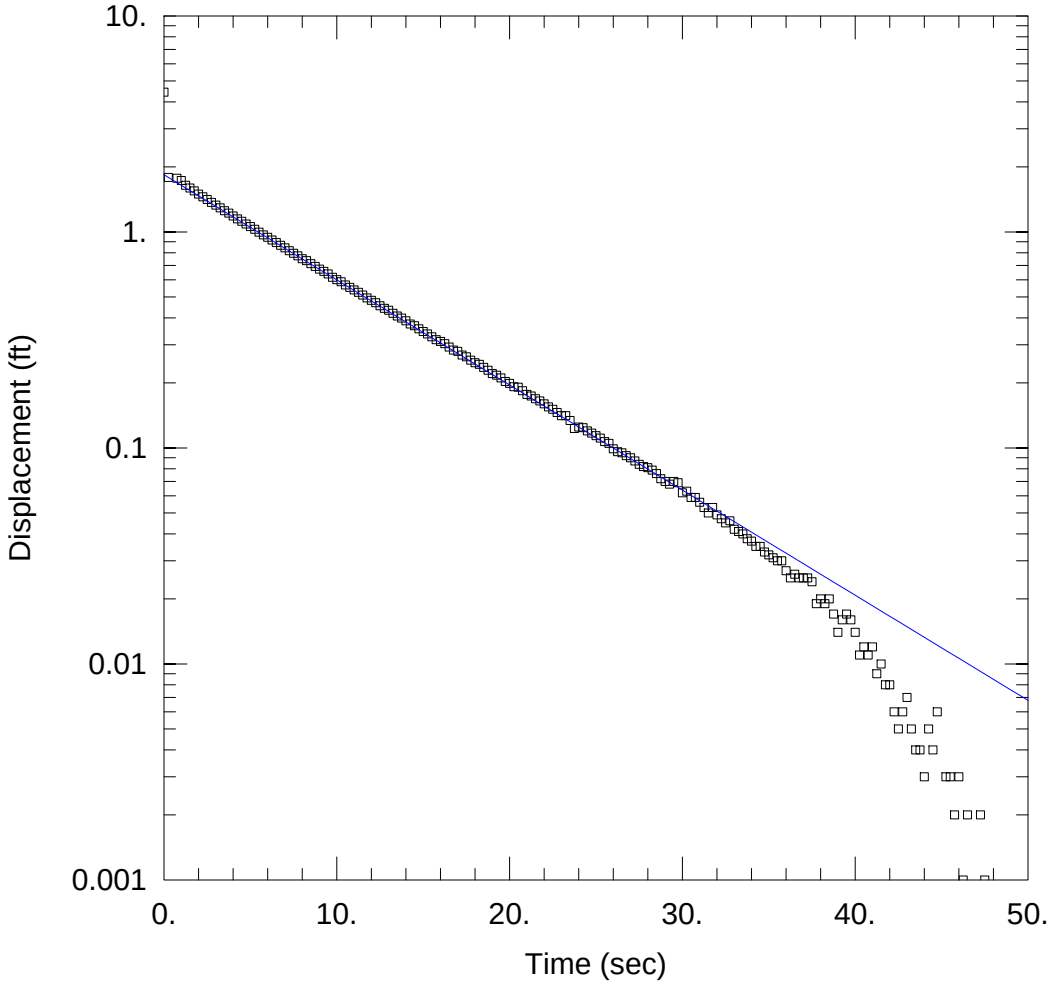
WELL DATA (MW-11S)

Initial Displacement: 2.116 ft Static Water Column Height: 11.98 ft
Total Well Penetration Depth: 19.3 ft Screen Length: 5. ft
Casing Radius: 0.0833 ft Well Radius: 0.0833 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 19.61 ft/day y0 = 1.326 ft



COMMERCE ST. PLUME

Data Set: R:\...\MW-11S_test4_rising.aqt
Date: 01/30/13 Time: 08:31:26

PROJECT INFORMATION

Company: Nobis Engineering
Client: EPA
Project: 80036
Location: Williston, VT
Test Well: MW-11S
Test Date: 01/25/13

AQUIFER DATA

Saturated Thickness: 32. ft
Anisotropy Ratio (Kz/Kr): 0.1

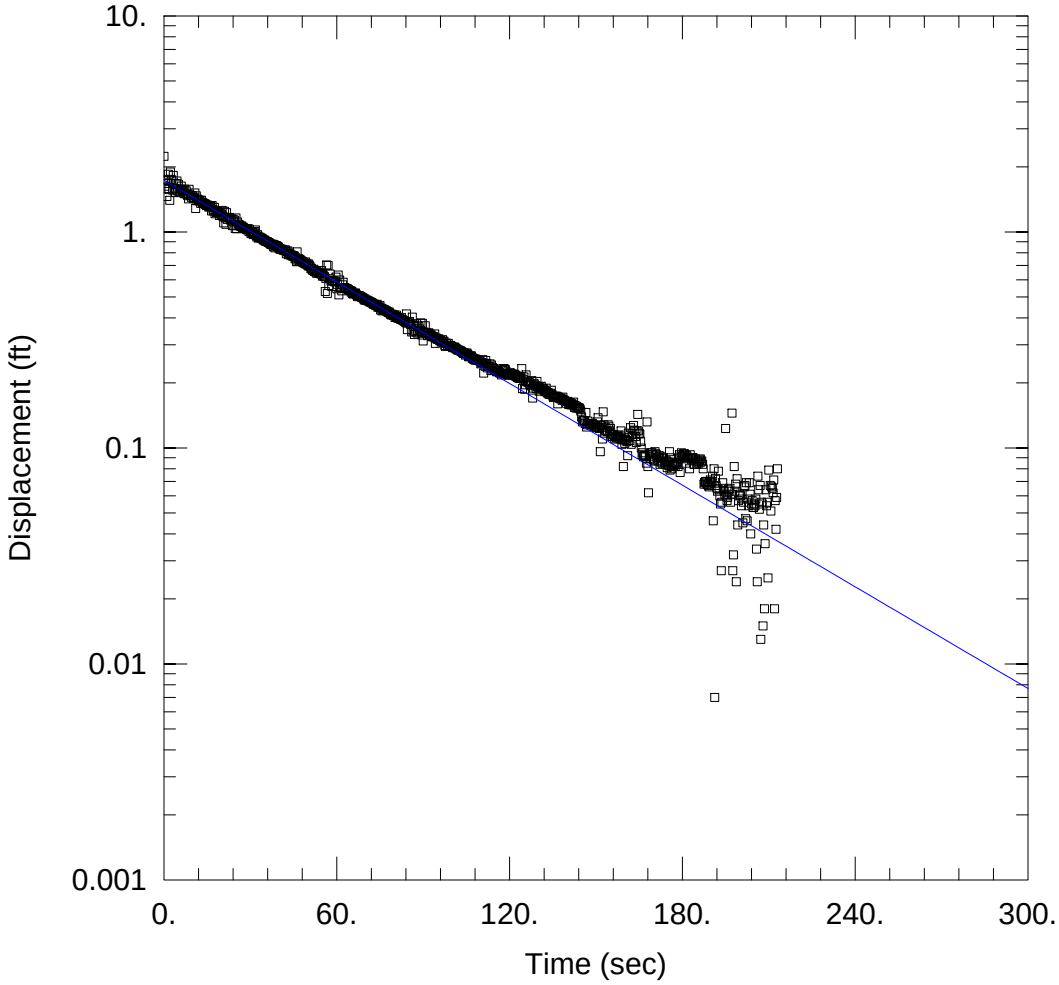
WELL DATA (MW-11S)

Initial Displacement: 4.436 ft
Total Well Penetration Depth: 19.3 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 11.98 ft
Screen Length: 5. ft
Well Radius: 0.0833 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 25.05 ft/day
y0 = 1.839 ft



COMMERCE ST. PLUME

Data Set: R:\...\MW-6M_test1_falling.aqt
Date: 01/30/13 Time: 08:26:30

PROJECT INFORMATION

Company: Nobis Engineering
Client: EPA
Project: 80036
Location: Williston, VT
Test Well: MW-6M
Test Date: 01/25/13

AQUIFER DATA

Saturated Thickness: 36.3 ft Anisotropy Ratio (Kz/Kr): 0.1

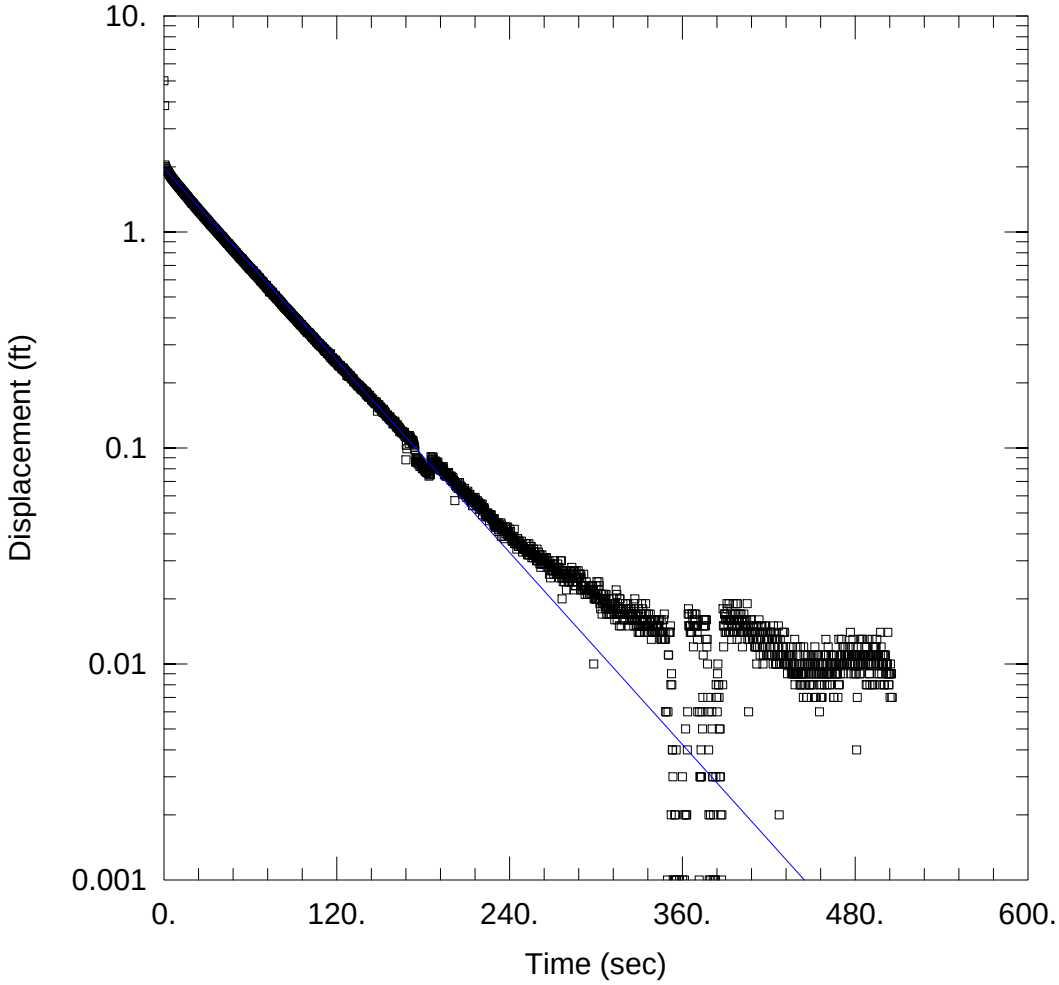
WELL DATA (MW-6M)

Initial Displacement: 2.238 ft Static Water Column Height: 23.22 ft
Total Well Penetration Depth: 28.9 ft Screen Length: 5. ft
Casing Radius: 0.0833 ft Well Radius: 0.0833 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 4.251 ft/day y0 = 1.737 ft



COMMERCE ST. PLUME

Data Set: R:\...\MW-6M_test2_rising.aqt
Date: 01/30/13 Time: 08:27:19

PROJECT INFORMATION

Company: Nobis Engineering
Client: EPA
Project: 80036
Location: Williston, VT
Test Well: MW-6M
Test Date: 01/25/13

AQUIFER DATA

Saturated Thickness: 36.3 ft Anisotropy Ratio (Kz/Kr): 0.1

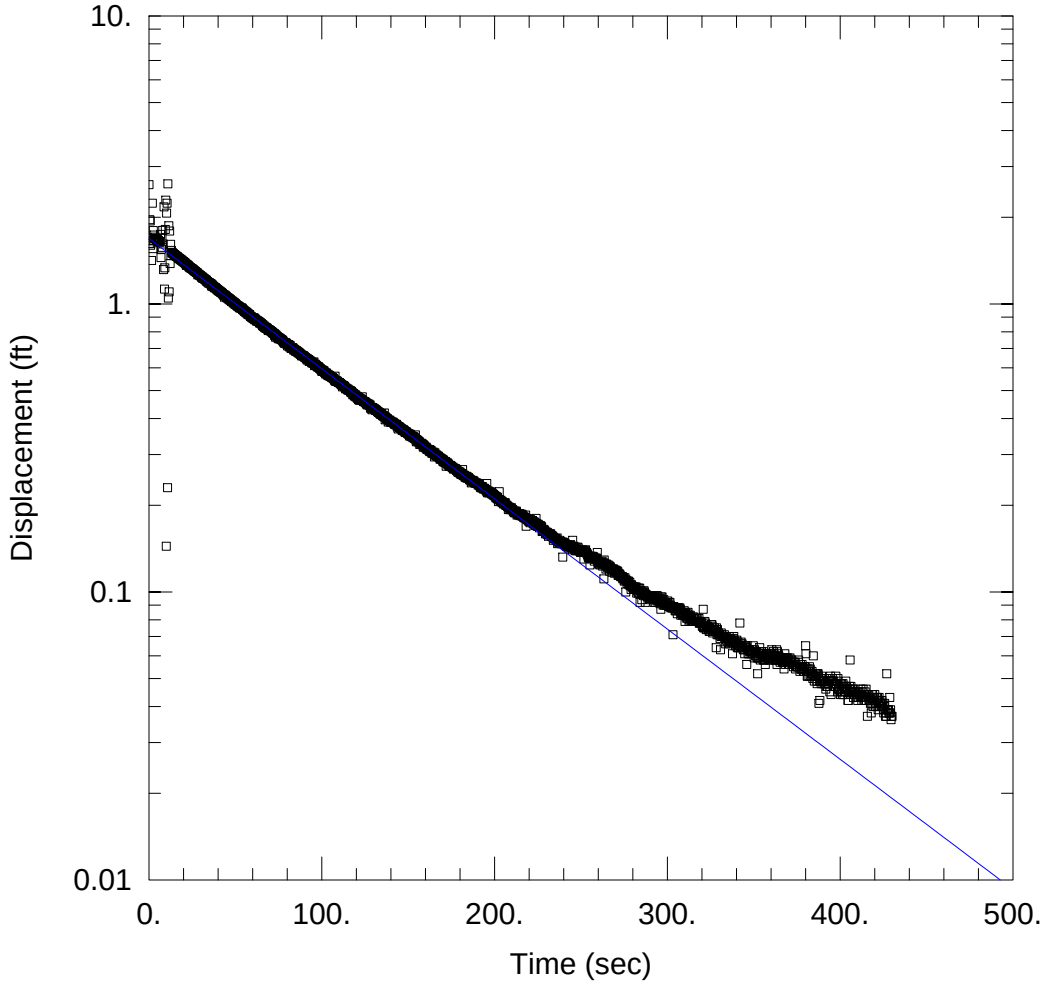
WELL DATA (MW-6M)

Initial Displacement: 5.01 ft Static Water Column Height: 23.22 ft
Total Well Penetration Depth: 28.9 ft Screen Length: 5. ft
Casing Radius: 0.0833 ft Well Radius: 0.0833 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 4.015 ft/day y0 = 1.969 ft



COMMERCE ST. PLUME

Data Set: R:\...\MW-7M_test1_falling.aqt
Date: 01/30/13 Time: 08:27:49

PROJECT INFORMATION

Company: Nobis Engineering
Client: EPA
Project: 80036
Location: Williston, VT
Test Well: MW-7M
Test Date: 01/25/13

AQUIFER DATA

Saturated Thickness: 45.4 ft
Anisotropy Ratio (Kz/Kr): 0.1

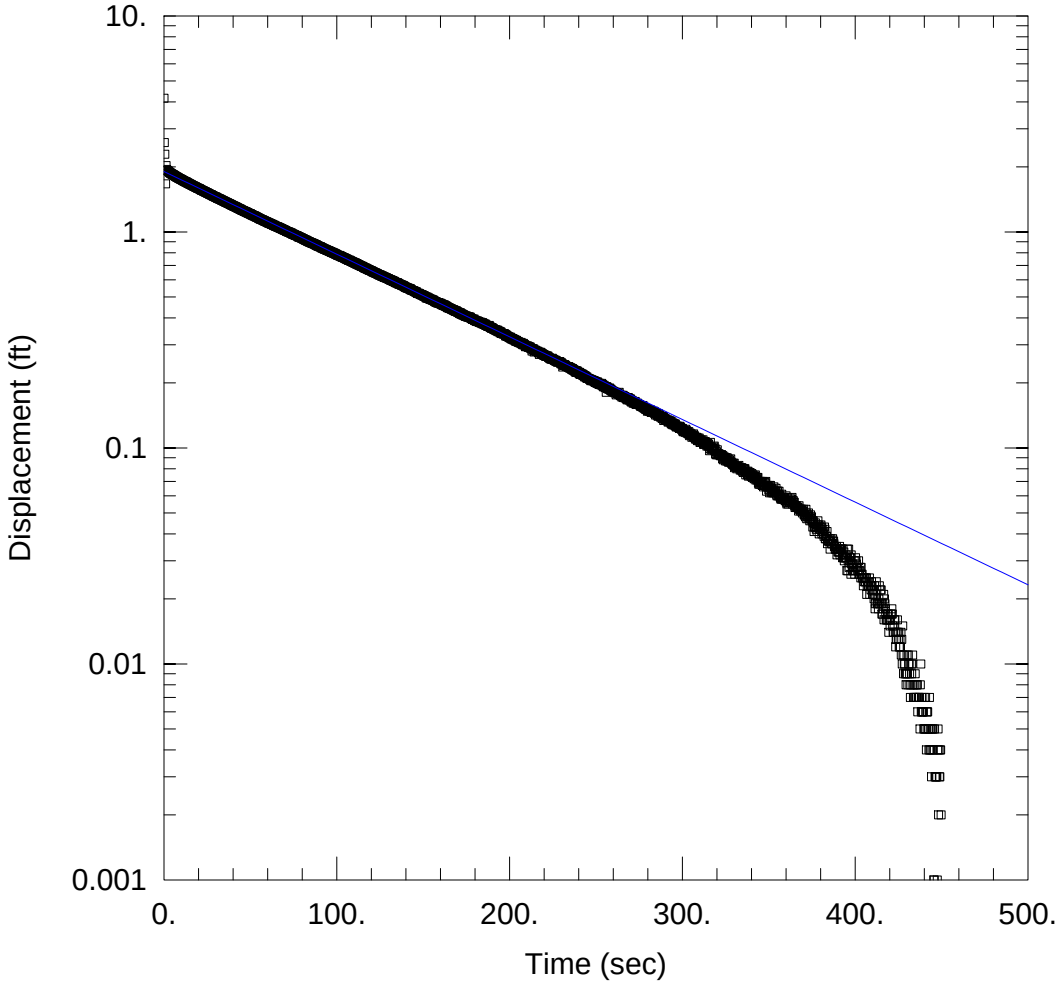
WELL DATA (MW-7M)

Initial Displacement: 2.595 ft
Total Well Penetration Depth: 34.3 ft
Casing Radius: 0.0833 ft
Static Water Column Height: 27. ft
Screen Length: 5. ft
Well Radius: 0.0833 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 2.468 ft/day
y0 = 1.687 ft



COMMERCE ST. PLUME

Data Set: R:\...\MW-7M_test2_rising.aqt
Date: 01/30/13 Time: 08:28:14

PROJECT INFORMATION

Company: Nobis Engineering
Client: EPA
Project: 80036
Location: Williston, VT
Test Well: MW-7M
Test Date: 01/25/13

AQUIFER DATA

Saturated Thickness: 45.4 ft Anisotropy Ratio (Kz/Kr): 0.1

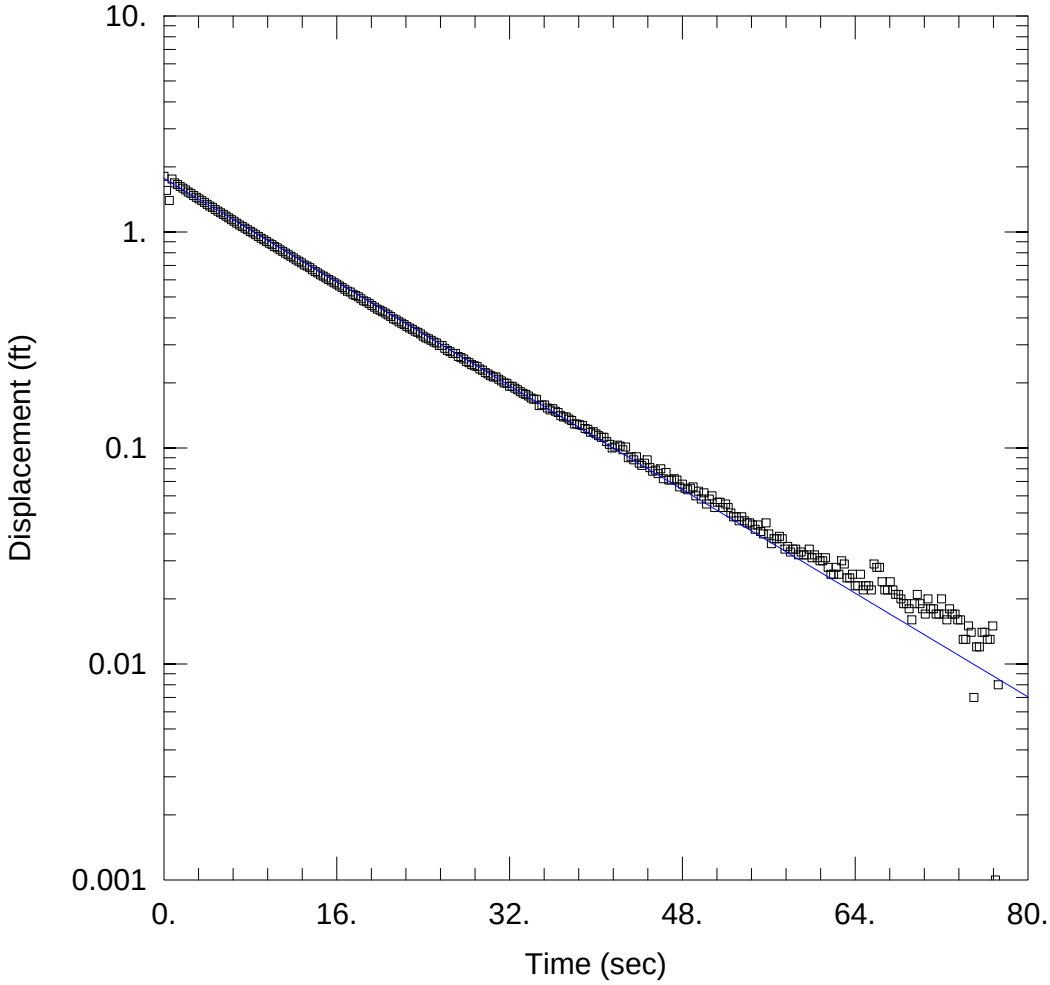
WELL DATA (MW-7M)

Initial Displacement: 4.155 ft Static Water Column Height: 27.7 ft
Total Well Penetration Depth: 34.3 ft Screen Length: 5. ft
Casing Radius: 0.0833 ft Well Radius: 0.0833 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 2.089 ft/day y0 = 1.904 ft



COMMERCE ST. PLUME

Data Set: R:\...\MW-8S_test2_rising.aqt
Date: 01/30/13 Time: 08:28:44

PROJECT INFORMATION

Company: Nobis Engineering
Client: EPA
Project: 80036
Location: Williston, VT
Test Well: MW-8S
Test Date: 01/25/13

AQUIFER DATA

Saturated Thickness: 49.8 ft Anisotropy Ratio (Kz/Kr): 0.1

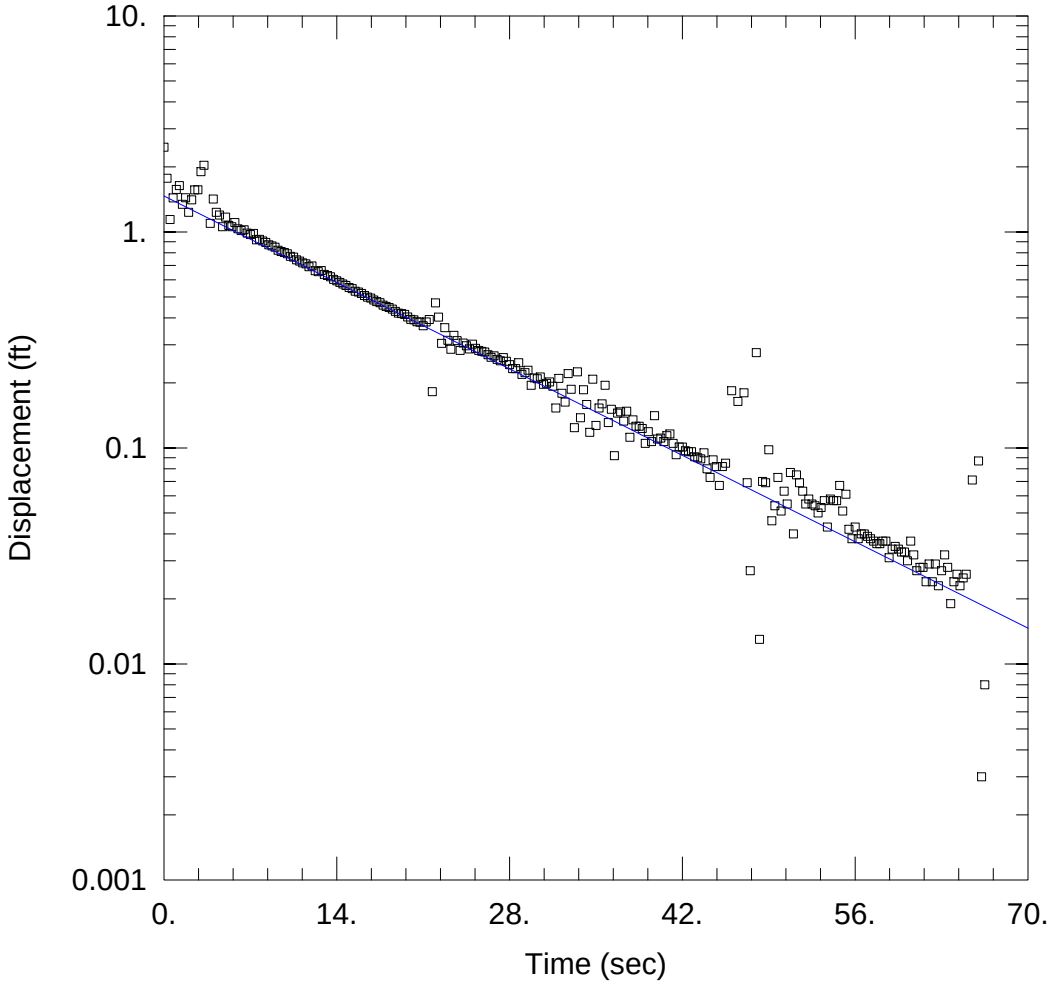
WELL DATA (MW-8S)

Initial Displacement: 1.809 ft Static Water Column Height: 16.82 ft
Total Well Penetration Depth: 19. ft Screen Length: 5. ft
Casing Radius: 0.0833 ft Well Radius: 0.0833 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 15.42 ft/day y0 = 1.771 ft



COMMERCE ST. PLUME

Data Set: R:\...\MW-8S_test3_falling.aqt
Date: 01/30/13 Time: 08:29:12

PROJECT INFORMATION

Company: Nobis Engineering
Client: EPA
Project: 80036
Location: Williston, VT
Test Well: MW-8S
Test Date: 01/25/13

AQUIFER DATA

Saturated Thickness: 49.8 ft Anisotropy Ratio (Kz/Kr): 0.1

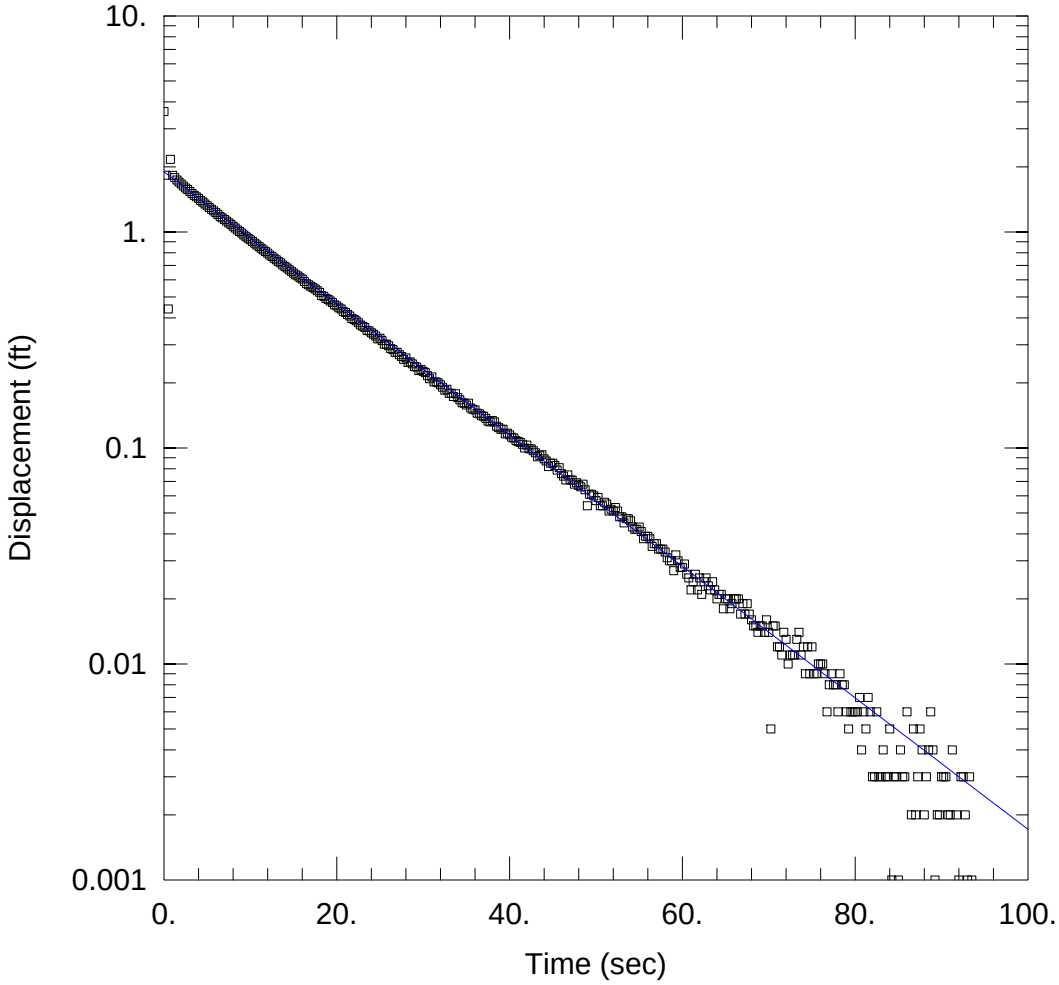
WELL DATA (MW-8S)

Initial Displacement: 2.466 ft Static Water Column Height: 16.82 ft
Total Well Penetration Depth: 19. ft Screen Length: 5. ft
Casing Radius: 0.0833 ft Well Radius: 0.0833 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 14.68 ft/day y0 = 1.466 ft



COMMERCE ST. PLUME

Data Set: R:\...\MW-8S_test4_rising.aqt
Date: 01/30/13 Time: 08:29:43

PROJECT INFORMATION

Company: Nobis Engineering
Client: EPA
Project: 80036
Location: Williston, VT
Test Well: MW-8S
Test Date: 01/25/13

AQUIFER DATA

Saturated Thickness: 49.8 ft Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW-8S)

Initial Displacement: 3.61 ft Static Water Column Height: 16.82 ft
Total Well Penetration Depth: 19. ft Screen Length: 5. ft
Casing Radius: 0.0833 ft Well Radius: 0.0833 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 15.64 ft/day y0 = 1.897 ft

APPENDIX J

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

Commerce Street
Plume
Run Name

Data Input Instructions:

115 → Enter value directly....or
↑ *or* 1. 2. Calculate by filling in gray
0.02 cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation Screening Protocol

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	47.2	(ft/yr)
or			
Hydraulic Conductivity	K	1.4E-03	(cm/sec)
Hydraulic Gradient	i	0.00642	(ft/ft)
Effective Porosity	n	0.2	(-)

2. DISPERSION

Alpha x*	40	(ft)
(Alpha y) / (Alpha x)*	0.1	(-)
(Alpha z) / (Alpha x)*	1.E-99	(-)

Calc. Alpha x

3. ADSORPTION

Retardation Factor* → R

or

Soil Bulk Density, rho	1.6	(kg/L)		
FractionOrganicCarbon, foc	1.8E-3	(-)		
Partition Coefficient	Koc			
PCE	426	(L/kg)	7.13	(-)
TCE	130	(L/kg)	2.87	(-)
DCE	125	(L/kg)	2.80	(-)
VC	30	(L/kg)	1.43	(-)
ETH	302	(L/kg)	5.35	(-)
Common R (used in model)* =			**2.87**	

4. BIOTRANSFORMATION

-1st Order Decay Coefficient*

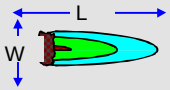
Zone 1	λ (1/yr)	half-life (yrs)	Yield
PCE → TCE	0.000		0.79
TCE → DCE	0.936	0.74	0.74
DCE → VC	1.083	0.64	0.64
VC → ETH	1.540	0.45	0.45

Zone 2	λ (1/yr)	half-life (yrs)
PCE → TCE	0.000	
TCE → DCE	0.000	
DCE → VC	0.000	
VC → ETH	0.000	

λ HELP

5. GENERAL

Simulation Time*	45	(yr)
Modeled Area Width*	700	(ft)
Modeled Area Length*	1085	(ft)
Zone 1 Length*	1085	(ft)
Zone 2 Length*	0	(ft)



Zone 2= L - Zone 1

6. SOURCE DATA

TYPE: Continuous
Single Planar

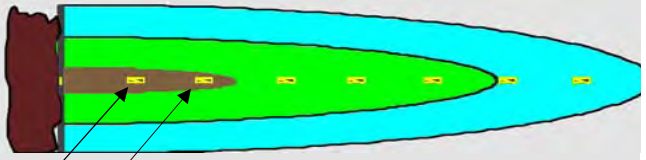
Source Options

Source Thickness in Sat. Zone* 40 (ft)

Y1
Width* (ft) 100

Conc. (mg/L)*	C1	k_s* (1/yr)
PCE		0
TCE	55.0	0
DCE		0
VC		0
ETH		0

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)											
TCE Conc. (mg/L)	55.0	47.0	.0								
DCE Conc. (mg/L)	.1	.0	.0								
VC Conc. (mg/L)	0.0	.0	.0								
ETH Conc. (mg/L)	0.0	.0	.0								
Distance from Source (ft)	100	600	690								
Date Data Collected	2012										

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | Help | Restore Formulas | RESET | SEE OUTPUT | Paste Example

Natural Attenuation Screening Protocol

The following is taken from the USEPA protocol (USEPA, 1998). The results of this scoring process have no regulatory significance.

Interpretation	Score
Inadequate evidence for anaerobic biodegradation* of chlorinated organics	0 to 5
Limited evidence for anaerobic biodegradation* of chlorinated organics	6 to 14
Adequate evidence for anaerobic biodegradation* of chlorinated organics	15 to 20
Strong evidence for anaerobic biodegradation* of chlorinated organics	>20

* reductive dechlorination

Score: 11

Scroll to End of Table

Analysis	Concentration in Most Contam. Zone	Interpretation	Yes	No	Points Awarded
Oxygen*	<0.5 mg/L	Tolerated, suppresses the reductive pathway at higher concentrations	◉	○	3
	> 5mg/L	Not tolerated; however, VC may be oxidized aerobically	○	◉	0
Nitrate*	<1 mg/L	At higher concentrations may compete with reductive pathway	◉	○	2
Iron II*	>1 mg/L	Reductive pathway possible; VC may be oxidized under Fe(III)-reducing conditions	○	○	
Sulfate*	<20 mg/L	At higher concentrations may compete with reductive pathway	○	◉	0
Sulfide*	>1 mg/L	Reductive pathway possible	○	◉	0
Methane*	>0.5 mg/L	Ultimate reductive daughter product, VC Accumulates	◉	○	3
Oxidation Reduction Potential* (ORP)	<50 millivolts (mV)	Reductive pathway possible	◉	○	1
	<-100mV	Reductive pathway likely	◉	○	2
pH*	5 < pH < 9	Optimal range for reductive pathway	◉	○	0
TOC	>20 mg/L	Carbon and energy source; drives dechlorination; can be natural or anthropogenic	○	◉	0
Temperature*	>20°C	At T >20°C biochemical process is accelerated	○	◉	0
Carbon Dioxide	>2x background	Ultimate oxidative daughter product	○	◉	0
Alkalinity	>2x background	Results from interaction of carbon dioxide with aquifer minerals	○	◉	0
Chloride*	>2x background	Daughter product of organic chlorine	○	◉	0
Hydrogen	>1 nM	Reductive pathway possible, VC may accumulate	○	○	
Volatile Fatty Acids	>0.1 mg/L	Intermediates resulting from biodegradation of aromatic compounds; carbon and energy source	○	◉	0
BTEX*	>0.1 mg/L	Carbon and energy source; drives dechlorination	○	◉	0
PCE*		Material released	○	◉	0
TCE*		Daughter product of PCE [a/]	○	◉	0
DCE*		Daughter product of TCE. If cis is greater than 80% of total DCE it is likely a daughter product of TCE[a/]; 1,1-DCE can be a chem. reaction product of TCA	○	◉	0
VC*		Daughter product of DCE[a/]	○	◉	0
1,1,1-Trichloroethane*		Material released	○	○	
DCA		Daughter product of TCA under reducing conditions	○	○	
Carbon Tetrachloride		Material released			
Chloroethane*		Daughter product of DCA or VC under reducing conditions			
Ethene/Ethane	>0.01 mg/L	Daughter product of VC/ethene			
	>0.1 mg/L	Daughter product of VC/ethene			
Chloroform		Daughter product of Carbon Tetrachloride			
Dichloromethane		Daughter product of Chloroform			

* required analysis.

a/ Points awarded only if it can be shown that the compound is a daughter product (i.e., not a constituent of the source NAPL).

End of Form

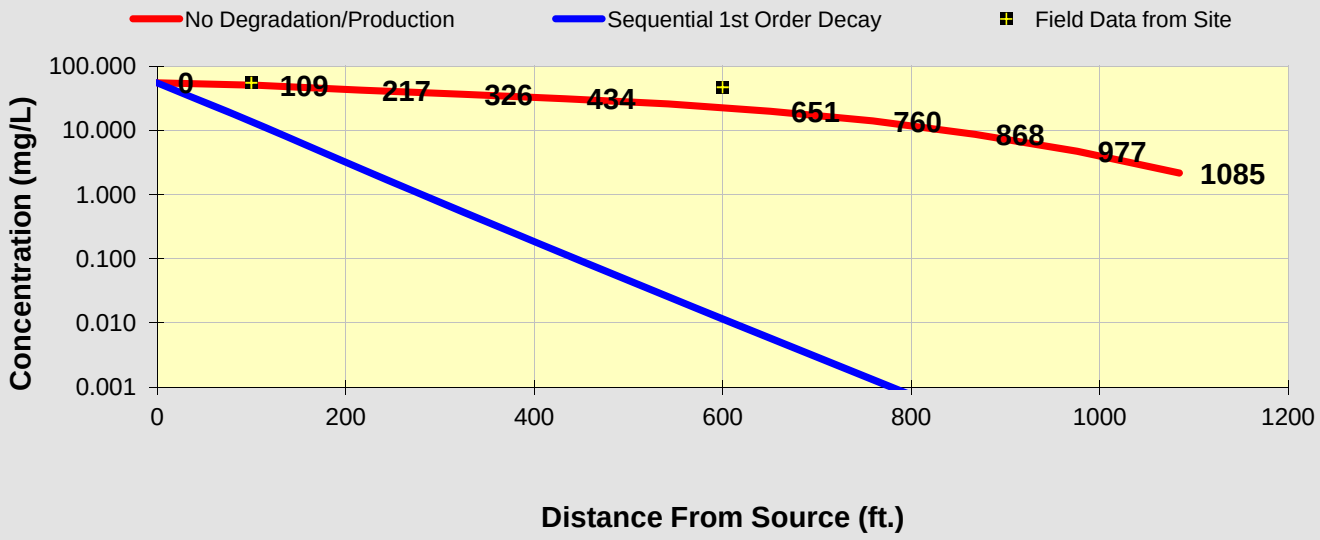
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

TCE	0	109	217	326	434	543	651	760	868	977	1085
No Degradation	55.000	50.015	42.075	36.116	30.932	25.608	19.830	13.936	8.669	4.682	2.164
Biotransformation	55.0000	12.155	2.495	0.529	0.115	0.026	0.006	0.001	0.000	0.000	0.000

Monitoring Well Locations (ft)

	100	600	690								
Field Data from Site	55.000	47.000	0.000								



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

45.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

Commerce Street
Plume
Run Name

Data Input Instructions:

115 → Enter value directly....or
↑ *or* 1. 2. Calculate by filling in gray
0.02 cells. Press Enter, then C
(To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation Screening Protocol

TYPE OF CHLORINATED SOLVENT: Ethenes ◉ Ethanes ○

1. ADVECTION

Seepage Velocity*	Vs	47.2	(ft/yr)
or			
Hydraulic Conductivity	K	1.4E-03	(cm/sec)
Hydraulic Gradient	i	0.00642	(ft/ft)
Effective Porosity	n	0.2	(-)

2. DISPERSION

Alpha x*	40	(ft)
(Alpha y) / (Alpha x)*	0.1	(-)
(Alpha z) / (Alpha x)*	1.E-99	(-)

Calc. Alpha x

3. ADSORPTION

Retardation Factor* → R
or

Soil Bulk Density, rho	1.6	(kg/L)		
FractionOrganicCarbon, foc	1.8E-3	(-)		
Partition Coefficient	Koc			
PCE	426	(L/kg)	7.13	(-)
TCE	130	(L/kg)	2.87	(-)
DCE	125	(L/kg)	2.80	(-)
VC	30	(L/kg)	1.43	(-)
ETH	302	(L/kg)	5.35	(-)
Common R (used in model)* =			**2.87**	

4. BIOTRANSFORMATION

-1st Order Decay Coefficient*

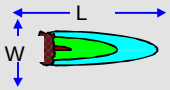
Zone 1	λ (1/yr)	half-life (yrs)	Yield
PCE → TCE	0.000		0.79
TCE → DCE	0.069	10.00	0.74
DCE → VC	1.083	0.64	0.64
VC → ETH	1.540	0.45	0.45

Zone 2	λ (1/yr)	half-life (yrs)
PCE → TCE	0.000	
TCE → DCE	0.000	
DCE → VC	0.000	
VC → ETH	0.000	

λ HELP

5. GENERAL

Simulation Time*	40	(yr)
Modeled Area Width*	700	(ft)
Modeled Area Length*	1085	(ft)
Zone 1 Length*	1085	(ft)
Zone 2 Length*	0	(ft)



Zone 2= L - Zone 1

6. SOURCE DATA

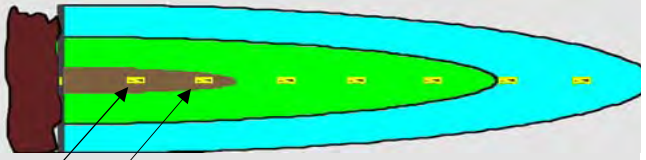
TYPE: Continuous
Single Planar

Source Options

Source Thickness in Sat. Zone* 40 (ft)

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations

	Y1	k_s* (1/yr)
Width* (ft)	100	
Conc. (mg/L)*	C1	
PCE		0
TCE	7.2	0
DCE		0
VC		0
ETH		0



View of Plume Looking Down

Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

PCE Conc. (mg/L)	.028	.0	.0								
TCE Conc. (mg/L)	7.2	3.3	.26								
DCE Conc. (mg/L)	.1	.0	.0								
VC Conc. (mg/L)	0.0	.0	.0								
ETH Conc. (mg/L)	0.0	.0	.0								
Distance from Source (ft)	0	550	1320								
Date Data Collected	2012										

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE | RUN ARRAY | Help | Restore Formulas | RESET | SEE OUTPUT | Paste Example

Natural Attenuation Screening Protocol

The following is taken from the USEPA protocol (USEPA, 1998). The results of this scoring process have no regulatory significance.

Interpretation	Score
Inadequate evidence for anaerobic biodegradation* of chlorinated organics	0 to 5
Limited evidence for anaerobic biodegradation* of chlorinated organics	6 to 14
Adequate evidence for anaerobic biodegradation* of chlorinated organics	15 to 20
Strong evidence for anaerobic biodegradation* of chlorinated organics	>20

* reductive dechlorination

Score: 13

Scroll to End of Table

Analysis	Concentration in Most Contam. Zone	Interpretation	Yes	No	Points Awarded
Oxygen*	<0.5 mg/L	Tolerated, suppresses the reductive pathway at higher concentrations	◉	○	3
	> 5mg/L	Not tolerated; however, VC may be oxidized aerobically	○	◉	0
Nitrate*	<1 mg/L	At higher concentrations may compete with reductive pathway	◉	○	2
Iron II*	>1 mg/L	Reductive pathway possible; VC may be oxidized under Fe(III)-reducing conditions	○	○	
Sulfate*	<20 mg/L	At higher concentrations may compete with reductive pathway	○	◉	0
Sulfide*	>1 mg/L	Reductive pathway possible	○	◉	0
Methane*	>0.5 mg/L	Ultimate reductive daughter product, VC Accumulates	◉	○	3
Oxidation Reduction Potential* (ORP)	<50 millivolts (mV)	Reductive pathway possible	◉	○	1
	<-100mV	Reductive pathway likely	◉	○	2
pH*	5 < pH < 9	Optimal range for reductive pathway	◉	○	0
TOC	>20 mg/L	Carbon and energy source; drives dechlorination; can be natural or anthropogenic	○	◉	0
Temperature*	>20°C	At T >20°C biochemical process is accelerated	○	◉	0
Carbon Dioxide	>2x background	Ultimate oxidative daughter product	○	◉	0
Alkalinity	>2x background	Results from interaction of carbon dioxide with aquifer minerals	○	◉	0
Chloride*	>2x background	Daughter product of organic chlorine	○	◉	0
Hydrogen	>1 nM	Reductive pathway possible, VC may accumulate	○	○	
Volatile Fatty Acids	>0.1 mg/L	Intermediates resulting from biodegradation of aromatic compounds; carbon and energy source	○	◉	0
BTEX*	>0.1 mg/L	Carbon and energy source; drives dechlorination	○	◉	0
PCE*		Material released	○	◉	0
TCE*		Daughter product of PCE [a/]	○	◉	0
DCE*		Daughter product of TCE. If cis is greater than 80% of total DCE it is likely a daughter product of TCE[a/]; 1,1-DCE can be a chem. reaction product of TCA	◉	○	2
VC*		Daughter product of DCE[a/]	○	◉	0
1,1,1-Trichloroethane*		Material released	○	○	
DCA		Daughter product of TCA under reducing conditions	○	○	
Carbon Tetrachloride		Material released			
Chloroethane*		Daughter product of DCA or VC under reducing conditions			
Ethene/Ethane	>0.01 mg/L	Daughter product of VC/ethene			
	>0.1 mg/L	Daughter product of VC/ethene			
Chloroform		Daughter product of Carbon Tetrachloride			
Dichloromethane		Daughter product of Chloroform			

* required analysis.

a/ Points awarded only if it can be shown that the compound is a daughter product (i.e., not a constituent of the source NAPL).

End of Form

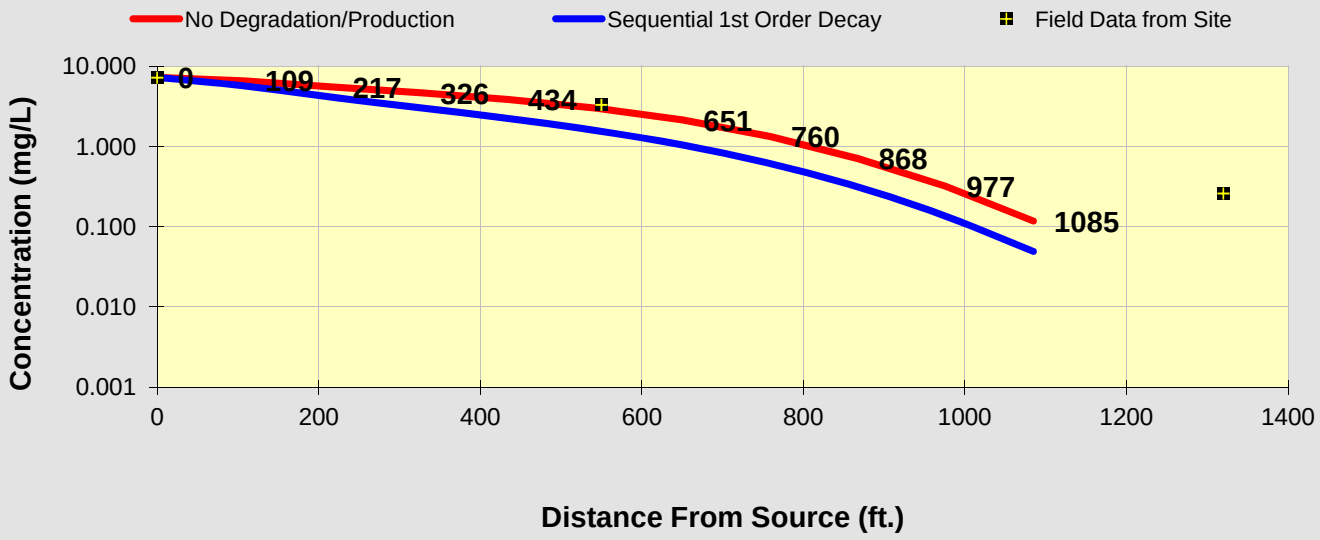
DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

Distance from Source (ft)

TCE	0	109	217	326	434	543	651	760	868	977	1085
No Degradation	7.200	6.541	5.477	4.636	3.847	3.006	2.129	1.324	0.705	0.316	0.117
Biotransformation	7.2000	5.631	4.077	3.014	2.221	1.575	1.035	0.609	0.311	0.135	0.049

Monitoring Well Locations (ft)

	0	550	1320								
Field Data from Site	7.200	3.300	0.260								



See PCE

See TCE

See DCE

See VC

See ETH

Prepare Animation

Time:

40.0 Years

Log ⟺ Linear

Return to Input

To All

To Array

Location	C. Plume	Western Plume		Background/upgradient			E. Plume
Representative MW	MW-04D	MW-08S	MW-08M	OE-02A	ASI-05D2	MW-01D	MW-06M
Most recent well sampled	2012	2012	2012	2010	2012	2012	2012
Oxygen (mg/L)	0.25	0.42	0.17	0.17	0.67	0.26	0.45
Nitrate as N (mg/L)	ND		ND		ND		ND
Nitrite as N (mg/L)	ND		ND		ND		ND
Sulfate (mg/L)	41		41		36		71
Sulfide (mg/L)	ND		ND		ND		ND
methane (mg/L)	25		3.9		ND		ND
ORP (mV)	-138.6	201.4	-3.0	-157.8	-124.4	-143.7	122.5
pH	7.2	5.7	6.6	7.6	7.3	7.2	7.1
TOC (mg/L)	ND		ND		2.9		ND
Temperature	12.0	10.6	10.8	9.0	11.1	12.0	11.6
CO2 (mg/L)	7.57		12.3		7.04		8.83
Alkalinity (mg/L)	110		84		210		140
Chloride (mg/L)	240		82		160		360
VFAs (mg/L)	ND		ND		ND		ND
Ethene (mg/L)	ND		ND		ND		ND
Ethane (mg/L)	ND		ND		ND		ND