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Project #: 152780/06

Massachusetts Department of Environmental Protection  
Northeast Regional Office  
205B Lowell Street  
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Subject: Phase V Remedy Operation Status - Inspection & Monitoring Report  
April 1, 2014 through September 30, 2014  
Former Varian Facility Site  
Beverly, Massachusetts  
MADEP # 3-0485

To Whom It May Concern:

On behalf of Varian Medical Systems, Inc., CB&I Environmental and Infrastructure, Inc. has prepared the enclosed Phase V Remedy Operation Status - Inspection & Monitoring Report summarizing the activities conducted from April 1, 2014 through September 30, 2014 for the former Varian Facility Site in Beverly, Massachusetts. A copy of this report has also been provided to the Varian Public Involvement Plan (PIP) repository at the Beverly City Library, the City of Beverly Board of Health, and the Beverly Conservation Commission. An e-copy of this report will shortly be posted on the web site maintained for the former Varian Facility Site (<http://www.beverlycleanup.varian.com>). A notice of availability for this document has also been issued to the PIP mailing list established for this Site.

If you have any questions regarding the report, please do not hesitate to contact me.

Sincerely,

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**MASSACHUSETTS CONTINGENCY PLAN  
PHASE V REMEDY OPERATION STATUS  
INSPECTION & MONITORING REPORT  
April 1, 2014 through September 30, 2014**

**FORMER VARIAN FACILITY SITE  
150 SOHIER ROAD  
BEVERLY, MASSACHUSETTS 01915**

MADEP Site # 3-0485

October 31, 2014

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## 1.0 INTRODUCTION AND BACKGROUND

### 1.1 Introduction

On behalf of Varian Medical Systems, Inc. (Varian), CB&I Environmental and Infrastructure, Inc. (CB&I), has prepared this semi-annual Remedy Operation Status (ROS) Inspection and Monitoring Report for the former Varian facility located at 150 Sohier Road as well as other properties located in the vicinity (the Site) in Beverly, Massachusetts. This report is being submitted for Release Tracking Number (RTN) 3-0485 in accordance with the requirements of the Massachusetts Contingency Plan (MCP; 310 CMR 40.000). A Site Location Map illustrating the location of the former Varian facility is attached as **Figure 1**, and a Site Plan is attached as **Figure 2**.

This semi-annual report summarizes activities conducted during the period of April 1, 2014 through September 30, 2014. Results of remedial activities and monitoring conducted during this reporting period are presented in this report. As required, the Massachusetts Department of Environmental Protection (MADEP) Comprehensive Response Action Transmittal Form (BWSC108) and Remedial Monitoring Reports (RMR) associated with this submittal were submitted electronically to MADEP. Copies of BWSC108 and the RMRs are included in **Appendix A**. This Inspection and Monitoring Report has been formatted to reference the requirements outlined in Section 310 CMR 40.0892(2) of the MCP.

### 1.2 Background Information

Based on the Phase II Comprehensive Site Assessment (CSA) completed in 2000 (IT, 2000), a condition of No Significant Risk existed at the Site with the exception of potential future significant risk associated with groundwater use in the area identified as a Potentially Productive Aquifer (PPA) north of Route 128. Groundwater concentrations in this PPA area were above applicable Massachusetts Drinking Water Standards. As a result, one of the stated remedial action goals in the December 2001 Phase IV Remedial Implementation Plan (Phase IV Plan) submitted to MADEP for the Site, was to achieve Drinking Water Standards in this area of the site (IT, 2001).

The Phase IV Plan proposed remedial actions for addressing volatile organic compounds (VOCs) in soil and groundwater at the subject Site. *In situ* oxidation of VOCs in soil and groundwater using permanganate solution was chosen as the best remedial alternative for the Site. The Phase IV Plan proposed treatment in the "source areas" to achieve these objectives. The Potential Source Location (PSL) areas at the former facility identified in the Phase IV Plan as potentially affecting the PPA area are listed below:

- PSL 5 – Potential former septic tank near Building 3
- PSL 6 – Potential former septic tank/leach field at Building 6
- PSL 9 – Inspection pit near Building 3
- PSL 11 – Chemical laboratory at Building 3
- PSL 12 – Potential former lime pit near Building 3

Other PSL areas that do not impact the PPA and certain other downgradient areas have been included in the *in situ* oxidation program to expedite groundwater cleanup. These areas include PSL 7--Building 5

Chem Lab, PSL 10--open field at south end of 150 Sohier Road, and downgradient treatment areas at 31 Tozer Road and in the Longview/Hill Street area.

Implementation of the Comprehensive Response Actions, including the injection of permanganate solution, began in July 2002 and a Phase IV As-Built and Final Inspection Report (Shaw, 2002a) detailing initial Phase IV activities including permitting, well installation, construction of the remedial treatment system, and initial implementation of remedial actions was submitted to MADEP in October 2002. The Phase IV As Built and Final Inspection Report also provided results of additional soil and groundwater analyses, identified minor modifications made to the Phase IV Plan, and documented the final inspection of the remedial system.

In December 2002, Varian submitted a Remedy Operation Status Opinion (Shaw, 2002b), which stated that the performance standards for ROS, as specified in 310 CMR 40.0893(2), have been achieved and will be maintained at the Site. A Response Action Outcome (RAO) has not yet been achieved at the Site, and the operation and maintenance of the remedial action will proceed under Remedy Operation Status.

The sodium permanganate treatment conducted at the Site since 2002 has produced significant reductions in chlorinated VOC levels at multiple depths in groundwater across the Site. These remedial activities are reported to MADEP in regular semi-annual ROS reports. As detailed in the October 2006 status report, bioremediation was proposed as a supplemental remedial approach to address two small VOC impacted areas in the northeast corner of the Site (Shaw, 2006). The first area includes shallow groundwater with residual trichloroethene (TCE) impacts located close to the Unnamed Stream to the northeast of Building 9 (**Figure 3**). Bioremediation was used to address the shallow groundwater near the Unnamed Stream in lieu of permanganate because permanganate treatment may affect the stream. The second bioremediation area is northeast of Building 3 where deep overburden groundwater is impacted with residual 1,1,1-trichloroethane (TCA), which is not effectively treated with permanganate.

Subsequent to the start of Comprehensive Response Actions, the PPA designation for the area to the north of Route 128 was removed by MADEP and, as a result, Drinking Water Standards no longer apply to this area. Therefore, the Remedial Action Goal specified in the Phase IV Plan to achieve drinking water standards in downgradient wells in the PPA area such as BR-1 is no longer applicable. As presented in the October 30, 2010 ROS report (Shaw, 2010b), the following updated remedial action goals will be used for ongoing response actions being conducted under Phase V ROS at the Site:

- Maintain compliance with Upper Concentration Limits (UCLs);
- Achieve a condition of No Significant Risk for site workers in site buildings by remediating, where necessary, elevated VOC concentrations in soil and groundwater beneath buildings;
- Limit rebound in VOC source areas such that potential impacts to indoor air in downgradient areas continue to pose No Significant Risk;
- Demonstrate that VOC concentrations in groundwater at the Site do not represent an uncontrolled source for impacts to surface water; and
- Demonstrate that VOC concentrations in soil and groundwater at the Site continue to pose No Significant Risk in accordance with current MADEP requirements.

To achieve these goals, the previously proposed remediation planning criteria will continue to be applied to focus remediation activities at the Site. These remediation planning criteria include the decrease of target VOC concentrations in certain source area wells to 50 percent or less of the UCL and the reduction of target VOC concentrations (including breakdown products) in treatment areas by at least 50 percent below pretreatment levels in order to mitigate potential post-remediation rebound effects. These remediation planning criteria are consistent with MADEP guidance (Policy #WSC-04-160) on the feasibility of achieving background concentrations which indicates that a reduction of risk to 50% of a level where No Significant Risk is achieved will be considered approaching background conditions and appropriate site closure criteria with Presumptive Certainty (MADEP, 2004b).

In December 2012, CB&I submitted a modification of the Phase III Remedial Action Plan (RAP) and Phase IV Plan for RTN 3-0485 (Shaw, 2012d). This modification addressed the Building 5 remedial area, located in the central portion of the former Varian facility (**Figure 2**). The Building 5 treatment area was not previously included in the original Phase III RAP and Phase IV Plan submitted to MADEP in 2001 (IT, 2001). The Phase III RAP was modified to identify, evaluate, and select remedial action alternatives to reduce potential risk associated with indoor air exposure in the Building 5 area. Soil vapor extraction (SVE) was selected as the preferred remedial alternative. The goal of the selected remedial action alternative in the Modified Phase III RAP was to control exposures and reduce VOC concentrations remaining in shallow soil that have the potential to migrate into the indoor air of Building 5. The Modified Phase IV Plan provided detail engineering designs, waste management plans, and initial operation and maintenance activities for the selected SVE remedial alternative (Shaw, 2012d). Details regarding the Building 5 SVE installation, including a Final Licensed Site Professional (LSP) Inspection and Phase IV Completion Statement, were included in the October 2013 status report (Shaw, 2013c).

Remediation in the Building 3 area, located in the northeast corner of the former Varian facility (**Figure 2**), has been conducted under ROS (to address groundwater impacts) and as an Immediate Response Action (IRA) under RTN 3-28531 (to address potential vapor intrusion). IRA activities included installation of a SVE system in December 2009. Phase II CSA and Phase III Remedial Action Plan reports were submitted for RTN 3-28531 in May 2012 (Shaw, 2012b and Shaw, 2012c). The Phase II and Method 3 Risk Assessment (Shaw, 2012b) concluded that a Condition of No Significant Risk had been achieved with the operation of the existing Building 3 SVE system which is effectively reducing VOC levels in indoor air in the Building 3 area. An Immediate Response Action Completion Report was submitted for RTN 3-28531 in February 2013 (Shaw, 2013a). The IRA Completion Report concluded that the primary objective of the IRA (to assess and mitigate the potential impacts to indoor air in the Building 3 area and thereby eliminate the potential for an Imminent Hazard) had been met by conducting IRA activities. Response actions for RTN 3-28531 had been effective in decreasing indoor air concentrations to below levels that would constitute an Imminent Hazard. However, continued operation of the SVE system is necessary to maintain a level of No Significant Risk in the Building 3 area. The IRA Completion Report linked RTN 3-28531 to RTN 3-0485 and also included a Phase IV Remedy Implementation Plan, Phase IV Completion Report, and Phase V Remedy Operation Status Opinion. The combined report for RTN 3-28531 closed this RTN and concluded that continued response actions (including the operation of the Building 3 SVE system) would be conducted in conjunction with Comprehensive Response Actions under Phase V ROS for RTN 3-0485. Building 3 remedial activities are therefore included as part of this ROS report.

## **2.0 DESCRIPTION OF OPERATION, MAINTENANCE, AND/OR MONITORING ACTIVITIES (310 CMR 40.0892 (2)(a))**

The following sections summarize Phase V ROS activities that were conducted during the reporting period of April 1, 2014 through September 30, 2014.

### **2.1 Building 3 and 5 Assessment Activities**

Based on the results of video drain inspections conducted in December 2013 and environmental data collected from the Building 3 area, additional drain line inspections and pilot testing were conducted in the Building 3 and 5 areas (**Figure 2**) during this reporting period. These activities were conducted to assess the integrity of existing drain lines at the facility in potential areas of VOC impact in shallow soil and groundwater beneath the buildings.

#### **2.1.1 Drain Line Inspections**

On April 7, 2014, East Coast Pipelines conducted cleaning and additional video inspection of drain lines in the Building 3 area under the direction supervision of CB&I. This inspection included three drain lines (identified as drain lines# 7, 8 and 9) formerly associated with the Building 3 Chem Lab (PSL 10). Additionally, one drain line (# 10) in the Building 5 area that may have received wastes from the former Building 5 Chem Lab (PSL7) was inspected.

#### **Drain Line 7 (Beneath Building 3 Chem Lab)**

Drain line 7 is a four-inch diameter, inactive cast iron drain line that formerly received waste from operations in the Building 3 Chem Lab. This pipe was accessed for cleaning and inspection at the former sump located adjacent to the building (**Figures 1 and 2, Appendix B**). Drain line 7 was previously inspected in December 2013, but sediment present in the line limited the inspection. On April 7, 2014, sediment in drain line 7 was cleared out using a pressure wash of tap water and the line was re-inspected. This was conducted to better assess sections of the line where releases may have occurred and to assess the potential of using drain line 7 for remedial treatment (either soil vapor extraction or addition of remedial additives).

The re-inspection of drain line 7 indicated:

- pipe cleaning was successful at removing sediment present in the line (see screen shots 1 and 2, **Appendix B**);
- a hole was observed in the bottom of the pipe at approximately 9 feet from the former sump (see screen shot 3);
- from approximately 11 feet to the end of the inspection at 23 feet, the bottom of the pipe was deteriorated, resulting in gaps of varying size (see screen shots 4 and 5);
- the re-inspection could not extend past 23 feet from the sump because the camera became embedded in the soil outside of the pipe.

Wastes generated during the cleaning of the inactive drain line 7, which included sediment and wash water, were collected and drummed. This waste material was sampled for laboratory analysis and, based on those results, was characterized for appropriate off-site disposal. Analytical results of waste

characterization samples indicated the presence of low levels of the VOCs tetrachloroethene (PCE), acetone and chloroform. Waste characterization results also indicated the presence of:

- metals such as arsenic, barium, cadmium, chromium, lead, mercury and silver;
- polychlorinated biphenyl (PCB) Aroclor 1254;
- heavy range petroleum hydrocarbons; and
- multiple polynuclear aromatic hydrocarbons, associated with heavy range petroleum hydrocarbons.

The compounds detected in the waste samples from drain line 7 are generally consistent with the former discharges to the drain line (e.g. electronic plating and parts washing). Assessment of petroleum hydrocarbons and metals was conducted in the Building 3 area during the Phase II investigation. This included soil sample analysis from borings installed in the Building 3 Chem Lab area. Results presented in the Phase II report did not indicate concentrations of petroleum hydrocarbons or metals that exceeded reportable concentrations. PCBs were not suspected as a potential contaminant for the Building 3 Chem Lab during the Phase II investigation and were therefore not included in the sampling program. It is unclear what the source is for the PCB detected in this wastes characterization sample. However, the concentration detected in the waste sediment sample, 0.56 milligrams per kilogram (mg/kg) is below the S1 reportable concentration (2 mg/kg).

One drum of solid waste and three drums of waste liquid were generated from the cleaning of drain line 7. This material was transported to Veolia Technical Services in Port Arthur, TX for proper disposal under a Hazardous Waste Manifest on June 13, 2014. A copy of the Hazardous Waste Manifest is included in **Appendix C**.

Based on the inspection of drain line 7, areas around this line were identified as potential locations of historic VOC releases to the environment. As discussed below, remedial testing was also conducted at drain line 7 to evaluate potential treatment alternatives.

#### **Drain Line 8 (Beneath Building 3 Chem Lab)**

Drain line 8 is a four-inch diameter, cast iron drain line that formerly received waste from operations in the Building 3 Chem Lab (PSL11). This pipe was accessed for cleaning and inspection at the former sump located adjacent to the building (**Figure 2, Appendix B**). Drain line 8 was previously inspected in December 2013. During that inspection, the line was found to be dry, with sediment present which limited the inspection. However, during the April 7, 2014 inspection, clear water was observed flowing through this line, which was previously thought to be inactive. The source(s) of the water could not be determined because of an obstruction in the line. To limit the potential impact that pressurized clearing of the line could have on facility storm water drainage or other facility operations, cleaning of this line was not conducted.

To assess if water present in drain line 8 represented a potential source of VOC, a sample of the water flowing in the line was collected and submitted for laboratory analysis of VOC by EPA method 8260B. The analytical results of this water sample did not indicate the presence of VOC above reporting limits.

Although cleaning and re-inspection of drain line 8 could not be completed, the prior inspection and the results of the water sample collected from this line indicate that drain line 8 is not a continuing source of

VOC. The inspections did indicate areas of the drain line where wastes may have been released previously. Those areas will be evaluated for potential treatment to address impacts to groundwater and indoor air.

### **Drain Line 9 (north side of Building 3)**

The drain line inspections completed in 2013 were not able to evaluate the potential line associated with the discharge from the former sump at the Building 3 Chem Lab (PSL9). This line (drain line 9) reportedly ran from the sump northeast along the building to the brook and likely conveyed waste discharged to the former sump (**Figures 1 and 2, Appendix B**). In approximately 2002, this line was sealed at the stream end to limit the potential of permanganate entering the former line and flowing to the brook. On April 7, 2014, a shallow excavation was completed adjacent to the former sump at the Building 3 Chem Lab to access and inspect this drain line. Once the line was accessible, East Coast Pipelines conducted the video inspection of drain line 9 under the direction supervision of CB&I. The results of this inspection indicate:

- drain line 9 is a 4-inch diameter, clay pipe ranging from four feet below grade at the former sump to approximately two feet below grade at the limit of the inspection thirty feet east of the northeast corner of Building 3;
- the first 75 feet of the clay pipe was in in good condition, with no cracks or damage observed (screen shot 6);
- a potential connection to the south (right) was noted at approximately 80 feet from the former sump (screen shot 7);
- a crack in drain line 9 was noted at 75 feet and break in the south (right) side of the pipe was observed at approximately 100 feet from the former sump (screen shot 8);
- off set joints were noted at approximately 110 feet (screen shot 9) and 113 feet (screen shot 10) from the former sump;
- the line was inspected to a distance of approximately 126 feet from the former sump; at this point the friction of the camera control line would not allow further inspection.

Based on this inspection of drain line 9, it does not appear that the line is a continuing source of VOC. However, the inspection did indicate areas where wastes may have been previously released. As discussed below, remedial testing was also conducted at drain line 9.

### **Drain Line 10 (Adjacent and Beneath Building 5)**

Drain line 10 is an active storm water line that receives run-off from the Building 5 roof drains and conveys the water to the culverted Unnamed Stream. This line also passes beneath a former sump associated with one of the utility trenches in Building 5 (**Figure 3, Appendix B**). Given the proximity of drain line to this former sump, waste may have been discharge to drain line 10 during the historic operation of the Building 5 Chem Lab (PSL7). A video inspection of drain line 10 was completed to evaluate this subsurface drainage structure as a potential source of VOCs and to focus potential remedial efforts. East Coast Pipelines conducted the video inspection of drain line 10 on April 4, 2014 under the direction supervision of CB&I. The pipe was accessed at a drainage manhole at the northeast corner of Building 5. Initial results of the video inspection indicated the line contained water and sediment that obscured the video camera. As a result, pressure washing of drain line 10 with tap water was conducted. Visibility in the pipe remained poor following the cleaning. However, the inspection indicated:

- drain line 10 consists of a 10-inch diameter, clay pipe in good condition with no cracks or deterioration observed (screen shot 11);
- the pipe is located approximately five feet below grade;
- the line was inspected to a distance of approximately 187 feet from the manhole; at this point the friction of the camera control line would not allow further inspection;
- five connections that appeared to be roof drains were observed (screen shot 12, 14 and 17);
- three unknown connections were observed at 104 feet, 126 feet and 132 feet from the manhole (see screen shots 13, 15 and 16);
- the connection to drain line 10 at 104 feet from the manhole roughly correlates with the location of the former utility sump.

It appears that the former utility sump may have been connected to drain line 10. Based on this inspection of drain line 10, it does appear that drain line 10 is liquid tight. Therefore potential impacts in the Building 5 area associated with wastes that may have discharged to drain line 10 would be limited. Soil and groundwater impacts associated with potential wastes discharged from the historic Building 5 Chem Lab are therefore likely limited to the area of the former utility sump and/or former utility trenches connected to this sump.

### **2.1.2 Building 3 Pilot Testing**

To evaluate the potential use of existing drainage lines and the permanganate injection galleries in the area of the Building 3 Chem Lab for remedial treatment, SVE pilot tests were conducted on April 8 and 9, 2014. These tests included using the existing Building 3 SVE system to pull a vacuum on drain lines 7 and 9 and the two permanganate injection galleries located near the building. These tests were coordinated with a planned temporary shutdown of the Building 3 SVE to conduct static indoor air sampling inside Building 3.

The soil vapor extraction pilot tests were performed by inducing a vacuum at target subsurface structures and measuring sub-slab vacuum influence at nearby temporary vacuum monitoring points (**Figure 4**). Prior to the start of the test, polyethylene sheeting was installed over the gravel and grass areas around the test area to limit potential vacuum loss. During a total of six tests, soil vapor was extracted from drain line 7, drain line 9, injection gallery 1 and injection gallery 2. The extraction tests were completed using up to two different flow rates, depending on the response of the target structures. During each test, vacuum readings were measured at four temporary vacuum monitoring points (VP1 through VP4), and at the adjacent subsurface structures (e.g. drain line 9 and Injection Gallery 1). The existing 2,000 pound carbon vessels were used for off-gas treatment during the pilot test.

Results of the various parameters measured during the soil vapor extraction pilot tests are summarized in **Table 1**. The pilot test vacuum monitoring points are shown on **Figure 4**.

The results of pilot tests conducted at drain line 7, drain line 9, injection gallery 1 and 2 indicated:

- with a low applied vacuum (2 to 5 inches of water), no VOC recovery was noted during vapor extraction at drain line 7
- with a low applied vacuum (2 to 5 inches of water), low VOC recovery (0.7 parts per million (ppm)) was noted during vapor extraction at drain line 9.
- with a high applied vacuum (12 inches of water), no VOC recovery was observed during vapor extraction at injection gallery 1



- with a high applied vacuum (12 inches of water), low VOC recovery (0.2 ppm) was observed during vapor extraction at injection gallery 2
- vapor extraction at both injection galleries resulted in vacuum influence measured at a distance up to 15 feet away

Given the low VOC recovery rates measured during pilot testing, the results of the pilot tests conducted at drain lines 7 and 9 and the injection galleries indicated that they are not suitable for effective soil vapor extraction or the structures are not located in an area with vadose zone VOC impacts. Based on these results and other available site data, Varian completed the installation of two new horizontal wells beneath Building 3 to provide further treatment of VOC in soil via SVE. The new horizontal wells also provide potential locations for groundwater treatment (e.g. permanganate addition). Details of horizontal well installation are discussed in section 2.4 below.

### **2.1.3 Installation of Groundwater Monitoring Wells OB45-S and OB45-DO**

Groundwater analytical results from shallow well OB44-S, installed in December 2013 near the potential former sump associated with one of the utility trenches inside Building 5, indicated elevated concentrations of VOC in shallow groundwater. To further assess these impacts and to provide a means of monitoring potential treatment, a shallow and deep overburden well couplet, OB45-S and OB45-DO, was installed downgradient at the northwest corner of Building 5 (**Figure 2**). The groundwater monitoring well couplet was installed on April 14 and 15, 2014 by Technical Drilling Services (TDS) of Sterling Massachusetts using a hollow stem auger rig under the direct supervision of CB&I personnel. Digsafe notification was conducted before the start of field work and the first five feet of drilling was completed using hand tools to limit the potential of contacting subsurface utilities. During soil boring advancement, soil samples were collected for logging purposes and to conduct headspace VOC screening with a photoionization detector (PID). Headspace screening results revealed no VOC concentrations in OB45-S or within the first 44 feet of OB45-DO. A headspace reading of 5.3 ppm was detected in a soil sample collected from 45-47 feet below ground surface (bgs) in OB45-DO. Soil descriptions and headspace screening results are summarized on the drilling logs provided in **Appendix D**. Soil encountered during drilling consisted of approximately five feet of fill over a clay layer down to approximately 25 feet bgs. Below this material a sand and gravel layer was encountered to the bottom of exploration.

The shallow well (OB45-S) was advanced to a depth of 15 feet below grade and was constructed of 10 feet of slotted two-inch diameter PVC well screen and approximately five feet of solid PVC riser. The well screen was backfilled with a sand pack to a minim of one foot above the screen. Above the sand pack a one foot bentonite seal was installed and the remaining annular space was backfilled with clean fill.

The deep overburden well (OB45-DO) was advanced to a depth of 49 feet below grade feet and was constructed of 15 feet of slotted two-inch diameter PVC well screen and approximately 34 feet of solid PVC riser. The well screen was backfilled with a sand pack to a minim of one foot above the screen. Above the sand pack a one foot bentonite seal was installed and then a bentonite/grout slurry was installed with a tremie pipe to just below surface grade.

Wells OB45-S and OB45-DO were finished at grade with a bolting road box set in concrete. Well completion diagrams are included in the drilling log included in **Appendix D**.

During drilling, soil cuttings from well installation were transferred into drums and stored onsite pending characterization. One soil sample was collected from the soil cuttings generated during drilling and submitted to ALS Environmental Laboratory (ALS) for analysis of VOCs by EPA Method 8260B. No VOCs were reported above detection limits in the soil sample from the drummed soil cuttings. The three drums of soil cuttings from the installation of OB45-S and OB45-DO were transported to Enpro Services of Maine, Inc. for proper off-site disposal under a Non-Hazardous Waste Manifest on July 25, 2014. A copy of the Non-Hazardous Waste Manifest is included in **Appendix C**.

Following well installation, wells OB45-S and OB45-DO were developed by TDS using pumping and surging to remove silt from the sand pack and improve the hydraulic connection with the surrounding aquifer. Development water was drummed and stored onsite pending characterization. A sample of groundwater was collected from OB45-S and OB45-DO at the end of development. These samples were submitted to ALS for analysis of VOCs by EPA Method 8260B. Analytical results of these groundwater samples indicated:

- VOC were below reporting limits in the sample collected from OB45-S
- the sample collected from OB45-DO indicated the presence of PCE (0.0059 milligrams per liter (mg/L)), TCE (0.27 mg/L) and cis-1,2-dichloroethene (0.37 mg/L)

Based on these results, the drummed development water was transported to Veolia Technical Services in Port Arthur, TX for proper disposal under a Hazardous Waste Manifest on June 13, 2014. A copy of the Hazardous Waste Manifest is included in **Appendix C**.

## **2.2 Site-Wide Groundwater and Surface Water Sampling**

### **2.2.1 Sample Collection and Analysis**

Groundwater sampling to monitor groundwater conditions across the Site and the progress of both the permanganate and bioremediation programs was conducted in April 2014 and August 2014 during this reporting period. The April 2014 sampling was the annual event which monitored VOC trends and groundwater conditions at select wells across the Site. The August 2014 sampling event was the third quarterly bioremediation sampling focused on monitoring reductive dechlorination progress following the October 2013 injection of lactate described in the April 2014 ROS report. A summary of samples collected during these monitoring events and sampling rationale is provided on **Tables 2A** and **2B**. The annual sampling event also included select stream surface water locations previously requested by the Beverly Conservation Commission in various Orders of Condition (Beverly, 2002; 2003; 2004). Sampling locations are shown on **Figures 2** and **3**.

Groundwater and surface water samples were submitted to ALS for analysis of site specific VOCs (by EPA Method 8260B), dissolved iron and manganese, nitrate and sulfate, methane, ethane, ethene, total organic carbon, and chloride as outlined on **Tables 2A** and **2B**. Additionally, groundwater samples collected from select bioremediation wells were submitted for analysis of *Dehalococcoides sp.* bacteria (DHC) at CB&I's Technology Development Laboratory in Lawrenceville, New Jersey.

Groundwater VOC sampling of monitoring and application wells during this reporting period utilized passive diffusion bag (PDB) samplers, with the exception of stream monitoring points and certain wells where alternative sampling methods were used, as discussed below. For wells sampled utilizing the PDB method, the sampling apparatus was deployed in each groundwater monitoring well for a minimum two-week equilibration period, after which the samples were collected.

Monitoring well BR-1, BR-3, BR-5, BR-6, BR-7, CL8-BR, and CL9-BR are bedrock wells utilizing a packer system in order to provide discrete groundwater sampling from three separate fracture zones. These wells use a Waterloo™ system, which collects groundwater samples in each packer zone by using dedicated dual-valve pumps driven by compressed nitrogen. Surface water stream samples were collected directly from the sample locations with a bailer or laboratory-supplied containers.

At locations where analyses of dissolved metals (manganese and/or iron), nitrate, sulfate, and chloride were performed, samples were collected using a conventional bailer, since these constituents cannot be accurately assessed using PDB samplers. Dissolved manganese and iron samples were field-filtered using a 0.45-micron filter prior to laboratory analysis consistent with MADEP policy.

During the April 2014 sampling event, groundwater samples from select permanganate injection and monitoring wells were also collected for bench-top colorimetric permanganate concentration analysis. These groundwater samples were field filtered using a 0.45-micron filter prior to permanganate concentration analysis. Samples that were collected for colorimetric analysis of residual permanganate concentrations were analyzed by CB&I using a Hach DR/890 colorimeter. The colorimeter utilizes a spectrophotometric method to determine the permanganate concentration based on a permanganate color calibration standard.

Groundwater monitoring at select wells for depth-to-groundwater and total-well-depth measurements, as well as for the potential presence of dense non-aqueous phase liquid (DNAPL) was performed in April 2014 and August 2014 when the PDB samplers were deployed. The electronic interface probe used during these monitoring activities did not detect DNAPL at monitoring wells gauged during this reporting period. Water level monitoring data from the April 2014 and August 2014 sampling events are summarized in **Appendix E**.

VOC analytical results from the April 2014 and August 2014 sampling event are summarized on **Table 3**. Results of chloride, iron, and manganese samples collected during the April 2014 and August 2014 sampling events are summarized on **Table 4**. Results of bioremediation parameter analyses (i.e., nitrate, sulfate, methane, ethane, ethene, total organic carbon, and DHC bacteria) are summarized on **Table 5**. Results of bench-top colorimetric analysis of residual permanganate are included in **Table 6**. Complete laboratory analytical reports for samples collected in April 2014 and August 2014 are provided in **Appendix F**. Sampling results are discussed below.

Depth to groundwater measurements collected during the April 2014 sampling event (**Appendix E**) were used to develop groundwater contour maps for the shallow overburden, deep overburden, and bedrock aquifers (**Figures 5, 6, and 7**). These figures show that the majority of Site groundwater in each aquifer generally flows to the west/southwest, following the regional groundwater flow pattern, which is south and

west toward Shoe Pond and the Bass River. The gradient in each aquifer is moderate to steep east of Tozer Road and very flat to the west of Tozer Road. In the shallow and deep overburden, there are indications of limited northerly and easterly groundwater flow in the contours at the northern end of the Site. Overall, the groundwater gradients shown on these figures are consistent with historical data from the Site.

### 2.2.2 VOC Monitoring Results

In general, the analytical results of groundwater samples collected during the April 2014 and August 2014 sampling events (**Table 3**) show decreasing or consistent concentrations of TCE and PCE at monitoring wells across the Site. Concentrations of cis-1,2-dichloroethene (DCE) continue to be variable. This variability may be due to the higher mobility of cis-1,2-DCE in groundwater compared to TCE and PCE and the generation of this daughter compound during natural attenuation and/or bioremediation processes.

Graphs illustrating concentration trends over time for the primary Site contaminants including TCE, PCE, cis-1,2-DCE, TCA, and vinyl chloride for numerous injection and monitoring wells are provided in **Appendix G**. Graphs for shallow overburden, deep overburden, and bedrock monitoring wells that are located in proximity to each other are grouped together for comparative purposes. These graphs indicate that data from many of the wells monitored continue to show decreasing concentration trends or sustained reductions in VOC concentrations as a result of Varian's remedial activities. These trends indicate that the remedial program is effectively treating groundwater and the Site is progressing toward a Permanent Solution as defined by the MCP.

Analytical results of target VOCs from the April 2014 groundwater sampling event were used to generate VOC iso-concentration maps for the shallow overburden, deep overburden, and bedrock aquifers (**Figures 8, 9, and 10**, respectively). The "total" VOC numbers consider concentrations of the Site-related VOCs, which include TCE, PCE, TCA, cis- and trans-DCE, 1,1-dichloroethane (DCA), 1,1-DCE, 1,2-DCA, and vinyl chloride.

Recent groundwater sampling results support the following overall observations regarding the three aquifers present at the Site:

- In the shallow overburden aquifer (**Figure 8**), the April 2014 data demonstrate that an area with a total VOC concentration greater than 10 mg/L was present beneath Building 5. This area is characterized by a total VOC concentration of 67.7 mg/L at well OB44-S which was installed in December 2013 beneath Building 5. Shallow impacts in the Building 5 area appear to extend to 30 Tozer Road where total VOC at OB42-S were 3.442 mg/L in April 2014. In the Building 3 area to the north, prior to the start of permanganate injection at the Site in 2002, an area of VOC concentrations greater than 10 mg/L extended over an area from OB9-S by the Unnamed Stream west to AP12-S, located adjacent to the east side of Building 6. A second area of shallow VOCs greater than 10 mg/L was historically observed at AP14-S, adjacent to the north side of Building 3 (Shaw, 2002a). **Figure 8** indicates two isolated areas of total VOCs greater than 1 mg/L now exist in the shallow overburden: one in the area of MW-9, by the Unnamed Stream, and a second area around at AP12-S adjacent to Building 6.

- In the deep overburden aquifer (**Figure 9**), the April 2014 data demonstrate the area of total VOC concentrations greater than 100 mg/L remains reduced since the start of treatment and is limited to the northeast corner beneath Building 3. Prior to the start of permanganate injection at the Site, the area of the deep overburden plume with VOC concentrations greater than 100 mg/L extended significantly farther to the west, downgradient from Buildings 3 and 6, to the area just west of Building 7 (Shaw, 2002a). Pretreatment total VOC levels in the Building 5 source area were also greater than 100 mg/L. However, recent total VOC concentrations in the Building 5 area have been reduced through permanganate treatment to approximately 39 mg/L at OB35-DO in April 2014. Total VOC levels in the PSL 10 area to the south of the former Varian facility have been reduced from a concentration greater than 50 mg/L before treatment began in 2002 and remained reduced during the April 2014 sampling round (6.345 mg/L at AP-21). To the west of PSL 10, at the 32 Tozer Road property, a total VOC concentration of 8.07 mg/L was noted at well MW2-32Tozer in April 2014.
- Before treatment started in the bedrock aquifer in 2002, total VOC concentrations greater than 50 mg/L extended from the Building 3 and 9 areas west nearly to Tozer Road (Shaw, 2002a). The April 2014 data document reduced bedrock levels with total VOC concentrations greater than 10 mg/L, but still less than 50 mg/L, are limited to a smaller area (at OB25-BR) west of Building 3 and 6 source areas (**Figure 10**). Pretreatment total VOC concentrations in bedrock along Tozer Road were as high as 10 mg/L. Analytical results from April 2014 indicate that total VOC concentrations in this area along Tozer Road have now been reduced to about 1 mg/L.

In summary, recent groundwater sampling results shown on **Figures 8, 9, and 10** continue to demonstrate overall decreasing in the concentrations and extent of VOCs in each aquifer. A more detailed discussion of VOC trends and monitoring results for the various treatment areas at the Site is presented below. This discussion is supported by the VOC trend graphs provided in **Appendix G**.

### ***Building 3/6 Treatment Area***

Permanganate injections have been conducted at multiple wells from 2002 through 2014 with treatment at fewer wells over recent years. During this reporting period, permanganate injections were conducted at OB12-DO and OB25-BR after the April 2014 sampling event. Bioremediation has also occurred in the area in the shallow overburden near the Unnamed stream and deep overburden aquifer east of Building 3. The VOC trend graphs provided in **Appendix G** generally indicate three trends for wells in this treatment area; initial decreasing trends without rebound, initial decreasing trends with rebounding concentration trends, and continued elevated VOC trends, as discussed below.

The first VOC trend represents wells that have been successfully treated by permanganate injections or bioremediation and VOC concentrations remain below the remedial planning criteria. This includes well OB32-DO, located on the north side of Building 3 where the pretreatment TCE concentration was 710 mg/L and PCE was 68 mg/L. Permanganate injection was conducted at OB32-DO in 2004 and VOC concentrations have remained well below the remedial planning criteria. In April 2014, the TCE concentration at OB32-DO was non-detectable, PCE was reported at 0.063 mg/L, and TCA was detected at 0.026 mg/L. In the shallow overburden near the Unnamed Stream a similar VOC trend is noted at OB9-S, where bioremediation has been conducted beginning in 2006. Pretreatment sampling indicated a TCE concentration of 53 mg/L and PCE of 30 mg/L at OB9-S. The August 2014 groundwater sample results indicated TCE and PCE were non-detectable at OB9-S with concentrations of vinyl chloride and

cis-1,2-DCE fluctuating. Other examples of wells with VOC trends indicating successfully treatment are wells AP12-S, AP14-S, AP25-DO, MW-9, OB12-S and OB37-DO.

At several wells in the Building 3/6 Treatment Area the initial permanganate treatment resulted in significant VOC concentration reductions (e.g., 99 percent reduction in TCE). However, concentrations of VOC have rebounded to above the remedial planning criteria, resulting in the need to implement additional, more recent, permanganate treatment events. This rebound effect is often observed due to the permanganate injections solubilizing VOC bound to soil particles. The soluble VOC are treated by the residual permanganate in the formation. However, once the residual permanganate in the area is consumed, VOC concentrations increase. An example of this is observed at deep overburden well OB12-DO, located north of Building 3 near Route 128. Pretreatment TCE and PCE concentrations at this well were 120 mg/L and 2 mg/L, respectively. Initial permanganate treatment was conducted at OB12-DO from 2003 to 2007, with subsequent treatment in 2009, 2011 and 2012 to address VOC increases above the remedial planning criteria. In April 2014, groundwater sampling indicated the TCE concentration increased to 28 mg/L at OB12-DO. Therefore, additional treatment was conducted during this reporting period. The October 2014 analytical data from OB12-DO will be evaluated to see if further treatment is warranted in the area. In April 2014, a similar increase to above the remedial planning criteria was observed at bedrock well OB25-BR, located west of Building 1. Treatment was also conducted at this well during the current reporting period. Additional wells where VOC trends indicate periodic VOC rebound to above the remedial planning criteria that has warranted subsequent permanganate treatment include AP12-DO, AP12-BR, AP26-DO, MW-13, OB19-DO, OB27-BR and OB36-DO. The VOC rebound observed at these wells indicates potential migration of VOC from under the existing building. Three angled wells (AP30R-DO, AP31-DO and AP32-DO) were installed in 2010 to provide permanganate treatment of deep overburden groundwater beneath Building 3. Permanganate injections were conducted at these wells in 2010, 2011 and 2013. However, as indicated by the graphs in **Appendix G**, subsequent VOC rebound was noted at wells downgradient of these treatment wells (e.g., OB12-DO, AP26-DO and OB25-DO). To limit additional VOC concentration rebound in groundwater, Varian may utilize the existing horizontal SVE wells and/or the new horizontal SVE wells discussed in section 2.4.2 for permanganate treatment during the upcoming reporting period.

At the deep overburden wells located at the northeast corner of Building 3, the graphs in **Appendix G** indicate a trend of continued elevated VOC concentrations above the remedial planning criteria. These wells include AP13-DO, AP23-DO and AP24-DO. Unlike other areas of the Site, groundwater sampling results also indicate elevated impacts of TCA and acetone in this area in addition to TCE and PCE. TCA and acetone are more effectively treated by bioremediation. Lactate injections began in this area in 2006 to address elevated VOC. Follow up injections were conducted in 2007, 2008, 2010 and 2011. Most recently deep overburden lactate injections were conducted in October 2013 at wells AP33-DO, AP34-DO and AP35-DO.

Based on the results of the April and August 2014 sampling at AP13-DO, AP23-DO and AP24-DO, target VOCs remain elevated at levels above the remedial planning criteria. For example, in August 2014, TCE, PCE and TCA were detected at concentrations of 320 mg/L, 92 mg/L and 26 mg/L, respectively. However, vinyl chloride and cis-1,2-DCE concentrations have increased at target wells AP23-DO and AP24-DO following the October 2013 treatment, indicating the TCE and PCE are being degraded.

Furthermore, increased or continuing elevated ethene concentrations were observed in the treatment area in April and August 2014. For example, ethene concentrations of 750 micrograms per liter (ug/L) and 850 ug/L were detected at AP23-DO and AP33-DO, respectively in August 2014. Ethene is the non-toxic end product of complete dechlorination of VOCs, including vinyl chloride.

Overall the data provide a strong indication that reductive dechlorination is occurring at wells AP23-DO, a moderate indication of reductive dechlorination at wells AP33-DO, AP34-DO and AP35-DO, and a limited indication of reductive dechlorination at wells AP13-DO and AP24-DO. Recommendations for additional bioremediation the Building 3 area are discussed in section 2.3.1.

### ***Building 5 Treatment Area***

Permanganate application to groundwater in the Building 5 treatment area was conducted at well AP27-DO, located east of Building 5, in 2004, 2005, and 2012, and at OB-35DO, located beneath Building 5, from 2005 to 2008, in 2011, and 2012. Permanganate injection during this reporting period was conducted at OB35-DO after the April 2014 sampling event.

The VOC trend graph for deep overburden well AP27-DO indicates a significant VOC decrease after the first treatment in 2004. In October 2011 and April 2012, the TCE concentration increased to 12 mg/L and 13 mg/L, respectively. To address the increased level of TCE noted at AP27-DO and nearby well OB35-DO, permanganate treatment was conducted at AP27-DO in 2012. VOC concentrations responded to treatment, with TCE at AP27-DO decreasing to non-detectable in November 2012. The TCE concentration at this well increased to 0.0039 mg/L April 2013 and to 11 mg/L in April 2014. These concentrations remain below the remedial planning criteria.

Permanganate treatment at deep overburden well OB35-DO, located inside Building 5, has had mixed results. Treatment reduced the concentration of TCE at OB35-DO from 440 mg/L in May 2005 to consistently below the remedial planning criteria (e.g., 5.2 mg/L in April 2014). This reflects approximately a 99 percent reduction in TCE concentrations. However, permanganate treatment has not consistently reduced the concentration of PCE at OB35-DO to below the remedial planning criteria. In April 2014 the PCE concentration at well OB35-DO was 33 mg/L compared to a pretreatment concentration of 11 mg/L. PCE tends to adhere to the soil matrix more than TCE, so the continued detection of PCE at this well may be the result of the permanganate desorbing PCE bound to soil particles, where it then is treated by the oxidizer. Additional treatment was conducted at well OB35-DO following the April 2014 sampling to address the elevated PCE level. October 2014 analytical data will be evaluated to determine if further treatment is warranted in the Building 5 Area.

Shallow overburden wells OB44-S is located inside Building 5. This well was first sampled in January 2014, and indicated the presence of TCE (24 mg/L) and PCE (47 mg/L) with cis-1,2-DCE reported as non-detectable. In April 2014, TCE and PCE concentrations decreased to 1.5 mg/L and 7.2 mg/L, respectively, but cis-1,2-DCE increased to 59 mg/L. Sample results from future sampling of well OB44-S will be reviewed to assess VOC concentration trends.

### **PSL 10 Treatment Area**

This area is located to the south of the Building 5 area, adjacent to the 32 Tozer Road property. Permanganate injections were conducted in this area from 2002 to 2004, from 2006 through 2008, and in 2011. Permanganate injection during this reporting period was conducted at OB35-DO after the April 2014 sampling event.

VOC concentrations at shallow overburden well CL10-S, located just downgradient of the PSL 10 treatment wells on the 32 Tozer Road property, continue to exhibit seasonal fluctuations. Higher concentrations of PCE are noted in the spring sampling with lower levels observed in the fall. For example, the PCE concentration increased to 1.8 mg/L in April 2014 from 0.011 mg/L in October 2013. Overall the PCE concentrations at CL10-S do not indicate a trend. TCE and PCE concentrations remained non-detectable in April 2014 at deep overburden well CL10-DO and bedrock well CL10-BR.

Deep overburden monitoring well MW2-32Tozer was installed west of the PSL10 injection wells on the 32 Tozer Road property in 2011. Overall the PCE concentrations at this well indicate a decreasing trend, with concentrations of PCE and TCE detected in April 2014 at 4.9 mg/L and 0.97 mg/L, respectively.

At bedrock well OB16-BR (32 Tozer Road), deep overburden well CL4-DO (30 Tozer Road) and bedrock well CL4-BR (30 Tozer Road), the graphs in **Appendix G** indicate a consistent or overall decreasing VOC trends.

October 2014 analytical data from this area will be evaluated to determine if further treatment is warranted in the PSL10 Area. Note that potential indoor air impacts at the 32 Tozer Road property are being monitored by sampling of indoor air as described in section 2.6.

### **North of Route 128**

Historically, VOC concentrations in the area north of Route 128 have been low or non-detectable in the shallow and deep overburden aquifers. Impacts have been noted in the bedrock aquifer north of Route 128. Permanganate injection has not been performed directly in this area, but source area treatment beginning in 2002 south of Route 128 was conducted to address downgradient groundwater impacts north of the former Varian facility.

As shown in the VOC trend graphs provided in **Appendix G**, an overall decreasing VOC trend is occurring in the bedrock aquifer north of route 128. In particular, an overall decrease in VOC concentrations is noted in each zone of bedrock well BR-1, located on Walden Street. Over the last three sampling events, VOC have been non-detectable in each zone of this bedrock well. At bedrock well CL9, located on Commons Drive, TCE and PCE concentrations have decreased in each zone. For example, TCE at Zone 1 in CL9 has decreased from 5.2 mg/L in 2003 to 0.23 in April 2014. The TCE daughter products in each zone continue to show fluctuating concentrations. The concentration of cis-1,2-DCE at CL09-BR Zone 1 was detected at 4.9 mg/L in April 2014, but has ranged from 0.4 mg/L to 11 mg/L between 2009 and 2014.



### **Tozer Road Treatment Area South of 128**

Initial permanganate injections were performed at 28 Tozer Road in 2006 and additional injections were conducted at CL3-DO in 2013 to address a TCE concentration rebound to 30 mg/L in April 2013, above the remedial planning criteria. Following the 2013 treatment, VOC concentrations decreased with TCE non-detectable in October 2013 and April 2014.

At bedrock well BR-5, located at 28 Tozer Road, VOC concentrations continue to fluctuate but remain at relatively low levels in each zone. Generally, cis-1,2-DCE concentrations are detected at levels higher than TCE and PCE. In April 2014, cis-1,2-DCE was detected at 0.09 mg/L in Zone 1 (deepest interval), 0.63 mg/L in Zone 2 (middle interval) and 0.23 mg/L in Zone 3 (shallowest interval).

At deep overburden well OB5-DO, located at 27 Tozer Road, lower VOC concentrations were observed after treatment began in 2002. However, an increasing VOC trend began in 2009 and since April 2010, generally consistent, higher VOC concentrations have been noted. In April 2014, TCE, PCE and cis-1,2-DCE were detected at concentrations of 1.8 mg/L, 0.59 mg/L and 1.7 mg/L, respectively. Although a trend graph is not provided for deep overburden well MW-36, located at 28 Tozer Road, analytical results from this well indicate a similar VOC concentration trend as described for OB5-DO. At the bedrock well OB5-BR, also located at 27 Tozer Road, an overall decreasing VOC trend is indicated by the graph in **Appendix G**. At OB5-BR, cis-1,2-DCE concentrations have decreased from 9 mg/L in 2002 to 0.016 mg/L in April 2014.

At deep overburden well OB06-DO, located on Sonning Road, concentrations of TCE and PCE have remained consistent for several sampling rounds while the cis-1,2-DCE level has decreased since 2010. In April 2014, TCE was detected at 0.14 mg/L and cis-1,2-DCE was reported at 0.39 mg/L at OB6-DO. In the adjacent bedrock well OB06-BR, VOC concentrations illustrate an overall decreasing trend since the start of treatment upgradient at 28 Tozer Road in 2002. For example, TCE has decreased from 1.8 mg/L in 2002 to 0.11 mg/L in April 2014.

### **31 Tozer Road Treatment Area**

Shallow groundwater treatment was conducted in 2002 and 2003 and deep overburden permanganate injection occurred in this area in 2004.

Monitoring wells in this area of the site are sampled to assess shallow overburden impacts. These include AP15-S (31 Tozer Road), OB18-S (31 Tozer Road), OB41-S (39 Tozer Road), OB42-S (30 Tozer Road) and OB43-S (27 Tozer Road). The trend graphs for these wells in **Appendix G** indicate an overall decreasing VOC trend or generally consistent VOC concentrations. Wells AP15-S, OB18-S and OB43-S generally indicate the lowest VOC concentrations. Of these three wells, only OB43-S had detectable concentrations of TCE and PCE in April 2014 (0.004 mg/L and 0.0037 mg/L, respectively). Well OB42-S exhibits the highest VOC concentrations, with TCE and cis-1,2-DCE detected at 2.4 mg/L and 0.96 mg/L, respectively, in April 2014.

### **Longview/Hill Street Treatment Area**

In the Longview/Hill Street area, permanganate injections were conducted at wells AP3-DO and AP4-DO during 2004, and at AP3-DO and AP3-BR in 2005.

At bedrock well BR6, located on Hill Street, TCE and PCE concentrations have been non-detectable in each zone over multiple years. Concentrations of vinyl chloride and cis-1,2-DCE at this well have fluctuated within each zone at relatively low levels. In April 2014, cis-1,2-DCE was detected in Zone 1 (deepest interval) at 0.012 mg/L, in Zone 2 (middle interval) at 0.35 mg/L and in Zone 3 (shallowest interval) at 0.17 mg/L.

Several monitoring wells in this downgradient area of the site are sampled to assess shallow overburden impacts. These include wells P-9R on Hill Street and OB20-S by Stream A, south of Sonning Road. VOCs remained non-detectable at well P-9R and decreased to non-detectable at OB20-S in April 2014.

At deep overburden well OB20-DO, TCE and PCE concentrations are generally low or non-detectable with higher cis-1,2-DCE concentrations. In April 2014, TCE and cis-1,2-DCE were reported at concentrations of 0.0076 mg/L and 0.3 mg/L, respectively, and PCE was non-detectable at OB20-DO. At the adjacent bedrock well OB20-BR, cis-1,2-DCE concentrations have increased over the last four sampling events. In April 2014, cis-1,2-DCE was detected at 0.98 mg/L at OB20-BR, which is comparable to the pretreatment concentration of 1.1 mg/L. However, TCE concentrations at OB20-BR remain below pretreatment levels, 0.3 mg/L in 2004 vs. 0.1 mg/L in April 2014.

## 2.2 Groundwater Permanganate Treatment Program

The permanganate injections in 2014 were focused on reducing VOC concentrations and minimizing potential contaminant migration from source areas at the Site by treating areas with VOC concentrations that exceeded the remedial planning criteria discussed section 1.2. Based on the results of the April 2014 sampling event, wells that exhibited concentrations of VOCs that exceeded the remedial planning criteria were OB12-DO (north of Building 3) and OB35-DO (inside Building 5). Although the concentrations of VOC at OB25-BR (west of Buildings 1) did not exceed the remedial planning criteria, the detected levels of each VOC did show an increase in April 2014, with cis-1,2-DCE detected at the highest concentration (25 mg/L). Therefore, additional injection was conducted at OB25-BR to reduce the VOC level at this well and to limit potential downgradient migration of VOC from this area.

Permanganate treatment was also conducted at wells AP-19 through AP-22 in the PSL 10 area upgradient of 32 Tozer Road. Residual permanganate in the area of these wells has decreased since the last injection in 2011 and sampling results from this area have indicated an increase in VOC concentrations. For example, PCE at AP-20 increased to 7.9 mg/l in October 2013 and cis-1,2-DCE increased to 4.9 mg/l at AP-21 in April 2014. Over the same period, sample results indicate a very low level of permanganate is present at AP-22, while data from the three other treatment wells indicate non-detectable permanganate concentrations. Permanganate treatment (100 gallons at each of the four existing application wells) was conducted in the PSL 10 area to help reduce the increases recently observed at source areas wells (e.g. AP-20) and to improve the decreasing VOC trend noted downgradient at well MW2-32Tozer, located downgradient on the 32 Tozer Road property. Well locations are illustrated on **Figure 2**.

### **2.2.1 Permanganate Injection Activities**

The 2014 permanganate injection program was initiated on July 23, 2014 and continued until September 10, 2014. Volumes of sodium permanganate injected at each well during this reporting period as well as total volume injected during the 2014 treatment program (1,272 gallons) are summarized on **Table 7**.

During this reporting period, 40 percent sodium permanganate solution was delivered to the Site in 250-gallon totes which were stored in an on-site storage shed with secondary containment. Prior to conducting treatment activities, the permanganate was diluted to an approximate 20 percent solution. A tote placed in the bed of a pickup truck was used to transport the 20 percent permanganate solution to the majority of individual injection wells and then allowed to flow by gravity into the wells. Under the supervision of CB&I field personnel, application of permanganate into wells located inside facility buildings was performed by transferring the 20 percent permanganate solution into portable 5-gallon containers which were manually transported to a well location and then allowed to flow by gravity into the wells.

The permanganate totes, drums, hoses, portable containers, pumps, and associated equipment were periodically inspected during this reporting period to ensure no leaks occurred. Additionally, the spill containment features of the storage shed were inspected periodically during this monitoring period. No problems or releases were reported.

Personal protective equipment (PPE) generated during permanganate injections as well as absorbent pads used for cleanup during permanganate injection equipment were placed into 55-gallon polyethylene drums onsite. Materials were neutralized with a solution of hydrogen peroxide, vinegar and water prior to storing in the drum. This drum is stored on site within the storage shed equipped with spill containment pending appropriate off-site disposal. The drum is inspected periodically.

### **2.2.2 Permanganate Parameter Monitoring and Results**

The Phase IV Plan (IT, 2001) detailed monitoring activities for the various permanganate treatment areas of the Site. As discussed in previous monitoring reports, monitoring activities have been adjusted, based upon changing site conditions. Groundwater physical parameters were monitored monthly during permanganate injection in select monitoring wells in active treatment areas. Monitoring activities typically completed during the permanganate treatment program include:

- visual observation of groundwater color for identification of residual permanganate;
- depth-to-groundwater measurements; and
- measurement of oxidation-reduction potential (ORP), and pH using a down-well water parameter probe (if no residual permanganate is observed, which could damage the probe).

Results of water quality parameter measurements collected from monitoring wells during this reporting period are presented in **Appendix E**.

Sampling for analytical parameters associated with permanganate treatment during this monitoring period was completed in April 2014. Groundwater samples were collected from select wells in April 2014 for bench-top colorimetric permanganate concentration analysis. The permanganate analysis results are

provided in **Table 6**. As would be expected, samples from wells where permanganate injection was conducted in 2013 indicated residual permanganate was present in April 2014. For example, permanganate injections were conducted in AP32-DO in 2013 and the concentration of permanganate was 236 mg/L in April 2014.

Typically, the dissolved iron concentrations (**Table 4**) are expected to decrease in treatment areas due to the oxidizing nature of permanganate and associated iron precipitation from the treated groundwater. Results of monitoring in areas where permanganate treatment has occurred generally demonstrate low or non-detectable dissolved iron concentrations. For example, in AP31-DO located north of Building 3, where permanganate injections were conducted during the summer/fall of 2013, dissolved iron was non-detectable in April 2014.

Generally, elevated dissolved manganese concentrations (**Table 4**) are noted where unreacted permanganate was observed. For example, at well OB36-DO located inside Building 6, permanganate was present at approximately 5,300 mg/L in April 2014 and dissolved manganese was detected at a concentration of 2,200 mg/L in April 2014. Outside of the permanganate treatment areas, dissolved manganese concentrations are generally low or non-detectable. At deep overburden well OB19-DO, located adjacent to Building 1 and 2 and downgradient of well AP26-DO, where permanganate injection was conducted in 2013, the dissolved manganese concentration was 0.11 mg/L in April 2014.

Baseline chloride concentrations at the site were highly variable. As a result of permanganate treatment, chloride levels in groundwater typically increase from the destruction of the chlorinated VOCs. An example of this is observed at OB36-DO, located inside Building 6, where permanganate injections were conducted in 2013. In April 2014 VOC concentrations had decreased to non-detectable and chloride had increased to 419 mg/L from 9.54 during the prior sampling, in May 2008 (**Table 4**).

### 2.3 Bioremediation Program

The original bioremediation program proposed for a portion of the Site was detailed in the October 2006 ROS report and included treatment at shallow wells in the Building 9 area near the Unnamed Stream, as shown on **Figure 3**. As noted above, the bioremediation program has significantly reduced concentrations of TCE, PCE and TCA in the shallow overburden in this area. The bioremediation program appears to have successfully addressed the shallow overburden impact of TCE and PCE in the area of the Unnamed Stream. Based on an evaluation of groundwater data collected through August 2014, active reductive dechlorination is continuing to address residual VOC daughter products in the shallow overburden near the Unnamed Stream. The data suggest that additional active bioremediation in the shallow overburden in this area is not warranted at this time.

The bioremediation program in the deep overburden near Building 3 has had limited success in sustaining reductive dechlorination of target VOC. Injection wells AP33-DO, AP34-DO and AP35-DO (**Figure 3**) were installed during the previous reporting period in an effort to increase the ability to apply more lactate to the deep overburden aquifer and thereby provide a sufficient carbon source to sustain reductive dechlorination. The 2013 bioremediation injection program was conducted in October 2013 and included the application of DHC cultures seeded into a sodium lactate solution. These bioremediation

injections were discussed in the previous status report. Additional injections were not conducted during the current reporting period. Activities associated with the bioremediation program during the current reporting period included the April and August 2014 monitoring events discussed below.

### **2.3.1 Bioremediation Parameter Monitoring Results**

Bioremediation injections were most recently conducted in October 2013 in the deep overburden east of Building 3. Following these activities, field parameters such as ORP, pH and DO were monitored to assess if appropriate conditions for reductive dechlorination were present in the treatment area. VOCs and bioremediation parameters (methane, ethane, ethene and total organic carbon) in groundwater samples are analyzed quarterly to monitor reductive dechlorination processes. During this reporting period, sampling was conducted in April and August 2014 in in the deep overburden east of Building 3. Bioremediation parameters are summarized on **Table 5**.

As discussed in Section 2.2.2, some VOC concentrations remain elevated in the deep overburden in the northeast corner of Building 3. However, the detection of daughter products and the presence of ethene in the deep overburden indicate that some complete degradation of VOCs is occurring as a result of the bioremediation injections in October 2013. As indicated in **Table 5**, favorable conditions for reductive dechlorination were maintained in the groundwater (dissolved oxygen levels <1.0 mg/L and negative ORP readings). Additionally, the August 2014 analytical results showed a *Dehalococcoides* bacteria population is present in deep overburden groundwater of the treatment area.

Although the data suggest that active reductive dechlorination is occurring in several deep wells, the results also indicated lower levels of carbon are available to sustain bioremediation activity. For example, the total organic carbon concentration at well AP24-DO has decreased from 1,520 mg/L in January 2014 to 13.6 mg/l in August 2014. Due to the lower total organic carbon concentrations and the continued elevated TCA and TCE levels in this area, additional application of carbon will be conducted to continue reductive dechlorination. During the upcoming reporting period, Varian plans to inject emulsified vegetable oil (EVO) with a ferrous iron additive as a carbon source for reductive dechlorination in the deep overburden. EVO tends to remain in the formation for a longer time than lactate and was successfully used at the Site in the shallow overburden near the Unnamed Stream. Use of EVO should reduce the frequency of potential future treatment applications to treat residual daughter products in this area of the Site. The addition of ferrous iron will aid in both biological and abiotic VOC degradation. Iron will help support reducing conditions in groundwater which are favorable for the reduction of the VOCs and will bind sulfide, which at high levels can be toxic to DHC, as sulfate is reduced. Elevated sulfide was detected at AP13-DO during the August 2014 sampling event and may be a key limiting factor in reductive dechlorination at this well. Iron can also convert TCE and cis-1,2-DCE to ethane abiotically without forming vinyl chloride which gives a second pathway to aid in reducing concentrations of VOCs.

## **2.4 Building 3 SVE System**

The Building 3 SVE system was installed in December 2009 and system startup was completed in January 2010 (Shaw, 2010a). The SVE system was designed to reduce VOC concentrations in the vadose zone soil beneath Building 3 as well as to control potential vapor intrusion into the building.

The SVE system consists of the following components:

- two horizontal soil vapor extraction wells (BLDG3-SVE1 and BLDG3-SVE2) installed beneath Building 3;
- one 5 horsepower blower;
- one moisture knock-out drum; and
- two 2,000-pound carbon vessels piped in series (with a spare third 2,000 pound carbon vessel)

The locations of the two SVE wells and the treatment system trailer are shown on **Figure 11**. The March 2010 IRA status report included an Operation & Maintenance (O&M) Manual developed to ensure that the system is operated properly to meet the intended design criteria and achieve site remedial goals (Shaw, 2010a). The O&M Manual includes manufacturer's literature and specific procedures for individual components for proper operation and maintenance. As-built drawings for the SVE system, a site-specific data collection form, preventive maintenance charts for key equipment and appropriate system start-up and shutdown procedures were also included.

The following section presents data regarding the operation of the Building 3 SVE system during this reporting period.

#### **2.4.1 Building 3 Soil Vapor and Indoor Air Sampling**

As discussed in the April 2014 ROS report, the concentrations of PCE detected at indoor air sample location BLDG2-6 in November 2013 (22 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )) indicated an increase compared to results from the last several sampling events, although this level was below the historic high of  $40 \mu\text{g}/\text{m}^3$ . It appears that operation of the Building 3 SVE system has not had a significant effect on the levels of VOC detected in indoor air in the Building 2 basement. The Building 3 SVE system was designed to address elevated levels of VOC detected in indoor air in the northeast end of Building 3 (e.g. BLDG3-4 where PCE was detected at  $72 \mu\text{g}/\text{m}^3$  in 2009). In April 2014 two soil vapor samples were collected in the basement of Building 2 in an effort to assess potential pathways for VOC migrating into the Building 2 basement. Installation of soil vapor points BLDG2-SV1 and BLDG2-SV2 (**Figure 11**) consisted of coring a hole through the basement walls in Building 2 and driving a three quarter inch ( $3/4$ " ) diameter metal probe using hand tools of approximately 1.5 feet into the soil behind the wall. The annular space around each soil vapor point at the basement wall was sealed to prevent short circuiting and the soil vapor point was finished with a flush- mounted road box.

On April 10, 2014, sub-slab soil vapor samples were collected from four vapor points, two in the basement of Building 2 (BLDG2-SV1, BLDG2-SV2), one in Building 3 (BLDG3-VP7) and one in Building 6 (BLDG6-SV1). The sub-slab soil vapor sampling points are illustrated on **Figure 11**. Each sample was collected using evacuated Summa® canisters over a four-hour sampling interval. The sub-slab soil vapor samples collected were submitted to ALS for laboratory analysis of select VOCs referencing EPA Method TO-15 (MADEP Method WSC-CAM-IXB). Analytical results of the soil vapor samples are summarized on **Table 8**. A complete copy of the laboratory analytical report is provided in **Appendix F**.

Analytical results of the April 10, 2014 sub-slab soil vapor samples collected beneath Building 2, 3, and 6 indicated:

- TCE was detected at concentrations ranging from 31 ug/m<sup>3</sup> at BLDG2-SV2 to 48,000 ug/m<sup>3</sup> at BLDG2-SV1;
- PCE was detected at concentrations ranging from 11 ug/m<sup>3</sup> at BLDG2-SV2 to 1,200,000 ug/m<sup>3</sup> at BLDG2-SV1; and
- cis-1,2- DCE was detected at a concentration of 13 ug/m<sup>3</sup> at BLDG3-VP7.

Additional VOCs detected in sub-slab soil vapor samples collected from beneath Building 2, 3 and 6 in April 2014 include acetone (at 130 ug/m<sup>3</sup>), bromodichloromethane (at 1.6 ug/m<sup>3</sup>), and chloroform (at 39 ug/m<sup>3</sup>).

The higher VOC concentrations detected at location BLDG2-SV1 compared to BLDG2-SV2 indicate that impacts to indoor air in the Building 2 basement are most likely from the Building 3 Chem Lab source rather than the Building 6 source area. Furthermore, the elevated concentration of PCE detected at BLDG2-SV1 indicates further treatment is warranted.

In conjunction with the April 10, 2014 sub-slab soil vapor sampling, indoor air samples were collected from the Building 2 basement in the vicinity of the two new sub-slab soil vapor sampling points. These locations included BLDG2-6 (Building 2 Basement) and a new location BLDG2-7 (Storage Room, Building 2 Basement). The indoor air samples were collected using evacuated Summa® canisters over an eight-hour sampling interval. The indoor air sampling locations are also illustrated on **Figure 11**. The indoor air samples were submitted to ALS for laboratory analysis of select VOCs referencing EPA Method TO-15 (MADEP Method WSC-CAM-IXB). Analytical results of the indoor air samples are summarized on **Table 9**. A complete copy of the laboratory analytical report is provided in **Appendix F**.

Analytical results of the April 10, 2014 indoor air samples collected in the Building 2 basement indicate:

- TCE was detected at concentrations of 0.37 ug/m<sup>3</sup> at BLDG2-7 and 0.96 ug/m<sup>3</sup> at BLDG2-6; and
- PCE was detected at concentrations of 0.36 ug/m<sup>3</sup> at BLDG2-7 and 4 ug/m<sup>3</sup> at BLDG2-7.

Additional VOCs detected in indoor air samples collected from the Building 2 basement on April 10, 2014 include acetone (up to 95 ug/m<sup>3</sup>), carbon tetrachloride (up to 0.48 ug/m<sup>3</sup>), chloromethane (at 0.9 ug/m<sup>3</sup>), and trichlorofluoromethane (at 1.3 ug/m<sup>3</sup>).

Indoor air sampling results from BLDG2-6 on April 10, 2014 are similar to prior results from this location. Analytical results from indoor air sample BLDG2-7 indicate lower concentrations of VOC compared to BLDG2-6. This data also indicates indoor air impacts in the Building 2 basement are primarily the result of potential migration from the former Building 3 Chem Lab. Therefore, additional shallow treatment is warranted in the former Building 3 Chem Lab source area to address these indoor air impacts. To facilitate this additional treatment, a new horizontal well was installed beneath the former Building 3 Chem Lab source area (see section 2.4.2 below).

Based on lower concentrations of VOC in soil vapor recovered by the Building 3 SVE system and lower levels of VOCs detected in soil vapor beneath the northeast portion of Building 3, a temporary shutdown of the Building 3 SVE system was conducted from April 3, 2014 until April 29, 2014. At the end of the temporary system shutdown, soil vapor and indoor air samples were collected to assess static conditions with the building and in soil vapor beneath the building. Following sample collection, the SVE system was reactivated.

On April 29, 2014, sub-slab soil vapor samples were collected from three sub-slab soil vapor points (BLDG3-VP1, BLDG3-VP2 and BLDG3-VP3). The sub-slab soil vapor sampling points are illustrated on **Figure 11**. Each sample was collected using evacuated Summa® canisters over a four-hour sampling interval. The sub-slab soil vapor samples collected were submitted to ALS for laboratory analysis of VOCs referencing EPA Method TO-15 (MADEP Method WSC-CAM-IXB). Analytical results of the sub-slab soil vapor samples are summarized on **Table 8**. A complete copy of the laboratory analytical report is provided in **Appendix F**.

Analytical results of the April 29, 2014 sub-slab soil vapor samples collected beneath Building 3 indicated:

- TCE was detected at concentrations ranging from 460 ug/m<sup>3</sup> at BLDG3-VP3 to 960 ug/m<sup>3</sup> at BLDG3-VP-1;
- PCE was detected at concentrations ranging from 2,000 ug/m<sup>3</sup> at BLDG3-VP3 to 19,000 ug/m<sup>3</sup> at BLDG3-VP1; and
- cis-1,2- DCE was detected at a concentration of 20 ug/m<sup>3</sup> at BLDG3-VP3.

Additional VOCs detected in sub-slab soil vapor samples collected from beneath Building 3 on April 29, 2014 include chloroform (at 24 ug/m<sup>3</sup>).

The April 29, 2014 soil vapor results indicated an increase in TCE and PCE concentrations at the three sub-slab vapor points sampled following the temporary shutdown of the Building 3 SVE system compared to prior results with the system operating. For example, the PCE concentration at BLDG3-VP1 increased from 1,000 ug/m<sup>3</sup> in November 2013 to 19,000 ug/m<sup>3</sup> at the end of the temporary shutdown.

In conjunction with the April 29, 2014 sub-slab soil vapor sampling, indoor air samples were collected from Building 2 and 3. The sampling included BLDG2-6 (Building 2 Basement), BLDG3-2 (Chemistry Laboratory Bench Testing Room), BLDG3-3 (Materials Inspection Department Room), and BLDG3-4 (Building 3 Machine Shop). Each sample was collected using evacuated Summa® canisters over an eight-hour sampling interval. The indoor air sampling locations are also illustrated on **Figure 11**. The indoor air samples were submitted to ALS for laboratory analysis of VOCs referencing EPA Method TO-15 (MADEP Method WSC-CAM-IXB). Analytical results of the indoor air samples are summarized on **Table 9**. A complete copy of the laboratory analytical report is provided in **Appendix F**.

Analytical results of the April 29, 2014 indoor air samples collected from the Building 3 area indicated:

- TCE was detected at concentrations ranging from non-detectable in BLD3-4 to 1.7 ug/m<sup>3</sup> in BLDG3-3; and
- PCE was detected at concentrations ranging from 1.9 ug/m<sup>3</sup> in BLD3-2 to 99 ug/m<sup>3</sup> in BLDG3-3.



Additional VOCs detected in indoor air samples collected from beneath Building 2 on April 29, 2014 include acetone (up to 2,300 ug/m<sup>3</sup>), 2-butanone (up to 19 ug/m<sup>3</sup>), 4-methyl-2-pentanone (at 4.1 ug/m<sup>3</sup>), carbon tetrachloride (up to 0.49 ug/m<sup>3</sup>), and toluene (up to 14 ug/m<sup>3</sup>).

VOC concentrations detected in samples collected at indoor air locations BLDG2-6 and BLDG3-2 (located the furthest from the SVE system) in April 2014 remained similar to concentration prior to the shutdown. At the sample location BLDG3-3, PCE in indoor air increased from 0.84 ug/m<sup>3</sup> in October 2013 when the SVE system was operating to 99 ug/m<sup>3</sup> at the end of the temporary SVE shutdown on April 29, 2014.

Based on the results of the April 29, 2014 indoor air samples, continued operation of the Building 3 system will be conducted. Several prior indoor air sampling events demonstrate that the current Building 3 SVE system is effectively maintaining a condition of no significant risk while operating. However, the April 2014 soil vapor and indoor air results indicate that the SVE system may not be completely treating residual VOC in soil beneath the northeast portion of Building 3. To provide further treatment of VOC impacts in the vadose zone beneath the northeast portion of Building 3, and to provide an additional means of potential shallow groundwater treatment, two new horizontal wells were installed beneath Building 3 in order to expand SVE treatment.

#### **2.4.2 Building 3 Horizontal SVE Well Installation**

Based on the data above, CB&I installed two new horizontal SVE wells beneath Building 3. **Figures 11 and 12** illustrate the location of the two new horizontal extraction wells BLDG3-SVE3 and BLDG3-SVE4. Well BLDG3-SVE3 was installed to provide further treatment of VOC impacts in the vadose zone beneath the northeast portion of Building 3 and to provide a means of potential shallow groundwater treatment. Well BLDG3-SVE4 was installed to provide treatment of VOC impacts in the vadose zone beneath the former Building 3 Chem Lab and to provide a means of potential shallow groundwater treatment.

From September 16 to 19, 2014, CB&I supervised the installation of two horizontal SVE wells beneath Building 3. Directional Technologies Inc. (DTI) of North Haven, CT completed installation of both horizontal wells using a Ditch Witch 2720 mud-rotary drill rig through the building foundation wall to the desired locations. Well BLDG3-SVE3 was advanced 40 feet beyond the foundation wall and well BLDG3-SVE4 was advanced 120 feet beyond the foundation. A copolymer mud specifically designed for horizontal drilling was used to help stabilize the bore hole and aid in well development. Each well was constructed of three-inch diameter schedule 80 PVC well screen and casing. BLDG3-SVE3 was completed with a 25 foot screen section installed approximately eight feet below the building floor. Well BLDG3-SVE4 was completed with a 40 foot screen section installed approximately 8.5 feet below the building floor. The screened section of extraction well BLDG3-SVE3 was located to treat soil impacts indicated from the soil sample collected eight feet below the floor at soil boring BLDG3-SB100 (15 mg/kg of PCE in 2012). The screened section of extraction well BLDG3-SVE4 was located to treat impacts indicated from the soil sample collected eleven feet below the floor at soil boring at BLDG3-SB105 (25 mg/kg of PCE in 2013) and the areas where holes in drain line 7 may have resulted in discharges to subsurface soils. Well completion diagrams are provided in the drilling log included in **Appendix D**. **Figure 11** shows the locations of the new horizontal SVE wells and well cross sections are also illustrated,

Although the horizontal drilling method used to advance the soil borings limited observations of the soil, soil encountered during the installation of BLDG3-SVE3 appeared to consist of mainly of a silty sand with abundant gravels. Soil encountered during the installation of BLDG3-SVE4 appeared to consist of clayey sand with some gravel. Due to the nature of the drilling procedure, headspace readings were not collected during well installation; however, headspace screening of the drilling mud that contained soil cuttings from each well was conducted. Headspace readings revealed a VOC concentration of 276 ppm in the soil cuttings collected from BLDG3-SVE3 and 411 ppm in the soil cuttings collected from BLDG3-SVE4.

The mud slurry that flushed drill cuttings from the bore hole at each wells was containerized in 300 gallon plastic totes pending characterization and off-site disposal.

After well installation, the extraction wells were developed by DTI by pumping tap water directly into the installed well. Water passing through the screen displaced the cuttings-laden drilling fluid, forcing it to exit through the end of the wellbore. Flushing continued until the bulk of drilling fluids and cuttings were been removed from the wellbore. The wellbore was then flooded with a solution containing a clay dispersant which was given at minimum four hours of residence time for the drilling fluid to de-flocculate. Then the well was flushed using tap water to remove remaining solids from the wellbore. Water produced during well development was containerized and stored on-site in 300 gallon plastic totes for future off-site disposal.

As discussed below, extraction wells BLDG3-SVE3 and BLDG3-SVE4 were connected to SVE system on September 25, 2014.

### **2.4.3 Building 3 SVE System Operation and Maintenance**

During this monitoring period, regular twice-monthly O&M site visits were performed by CB&I personnel. Activities performed during regular O&M visits include checking and recording information from SVE system alarms, gauges and meters, and screening soil vapor recovered by the system with a PID to assess VOC recovery and off-gas treatment removal efficiency. The results of regular O&M system monitoring conducted from April 1, 2014 to September 30, 2014 are summarized in **Table 10**. During this monitoring period the average total flow rate for the SVE system was approximately 172 cubic feet per minute (cfm), with an average pretreatment total VOC concentration of 11 ppm before extraction began at the two new wells. On September 25, 2014, soil vapor extraction began at wells BLDG3-SVE3 and BLDG3-SVE4. Screening of soil vapor from these two new wells indicated VOC concentrations of 56 ppm at BLDG3-SVE3 and 20 ppm at BLDG3-SVE4. Prior to these two new extraction wells, VOC recovery was highest at extraction well BLDG3-SVE2, with an average concentration of approximately 12 ppm during this reporting period.

**Table 10** also includes calculated off-gas removal efficiency, which demonstrates greater than 95 percent removal of VOCs from the vapor discharge was maintained by the carbon vessels during this reporting period as required by MADEP (MADEP, 1994).

During O&M site visits, the applied vacuum on the SVE wells was adjusted to optimize VOC recovery from beneath Building 3. This included increasing or decreasing applied vacuum on the individual SVE

wells or adjusting the ambient air dilution valve to increase or decrease the total applied vacuum. In addition, adjustments are made to the well packers installed in BLDG3-SVE1 and BLDG3-SVE 2 to vary the sections of well screen where vacuum is applied. Other activities performed during this reporting period included draining condensation from lines in the system and monitoring vacuum influence at the sub-slab soil vapor points inside Building 3.

As previously noted, a temporary SVE system shutdown was conducted on April 3, 2014 for soil vapor and indoor air testing purposes. The SVE system was reactivated on April 29, 2014 after sampling was conducted.

On May 1, 2014, PID screening of soil vapor from the primary carbon vessel effluent indicated potential breakthrough of the primary carbon (**Table 10**). The primary carbon vessel was taken offline and the stand-by carbon vessel was brought into service as the new secondary treatment vessel and the secondary treatment vessel configured as the primary. The SVE system was then reactivated and monitoring of the secondary carbon effluent (discharge to atmosphere) on this date indicated greater than 95 percent treatment of VOC.

On May 12, 2014, approximately 2,000 pounds of spent carbon were removed from the off-line vessel and new carbon was installed. The spent Building 3 carbon was transported off site for regeneration at Evoqua Water Technologies in Parker, Arizona. A copy of the Uniform Hazardous Waste Manifest for the shipment of carbon is provided in **Appendix C**. The off-line vessel with new carbon remained on site as a stand-by in the event that vapor screening indicates carbon breakthrough.

On June 13, 2014, PID screening of soil vapor from the primary carbon vessel effluent indicated potential breakthrough of the primary carbon (**Table 10**). The primary carbon vessel was taken offline and the stand-by carbon vessel was brought into service as the new secondary treatment vessel and the secondary treatment vessel configured as the primary. The SVE system was then reactivated and monitoring of the secondary carbon effluent (discharge to atmosphere) on this date indicated greater than 95 percent treatment of VOC.

On July 8, 2014, approximately 2,000 pounds of spent carbon were removed from the off-line vessel and new carbon was installed. The spent Building 3 carbon was transported off site for regeneration at Evoqua Water Technologies in Parker, Arizona. A copy of the Uniform Hazardous Waste Manifest for the shipment of carbon is provided in **Appendix C**. The off-line vessel with new carbon remained on site as a stand-by in the event that vapor screening indicates carbon breakthrough.

On July 8, 2014, PID screening of soil vapor from the primary carbon vessel effluent indicated potential breakthrough of the primary carbon (**Table 10**). The primary carbon vessel was taken offline and the stand-by carbon vessel was brought into service as the new secondary treatment vessel and the secondary treatment vessel configured as the primary. The SVE system was then reactivated and monitoring of the secondary carbon effluent (discharge to atmosphere) on this date indicated greater than 95 percent treatment of VOC.

On July 25, 2014, approximately 2,000 pounds of spent carbon were removed from the off-line vessel and new carbon was installed. The spent Building 3 carbon was containerized in drums and stored onsite pending transport and appropriate off-site disposal. The off-line vessel with new carbon remained on site as a stand-by in the event that vapor screening indicates carbon breakthrough.

On July 8, 2014, grab soil vapor samples were collected from the Building 3 SVE system to assess current VOC concentrations in the recovered vapor. Vapor samples were collected from BLDG3-SVE1, BLDG3-SVE2, and total carbon influent. Each grab sample was collected using evacuated Summa® canisters. The soil vapor samples collected were submitted to ALS for laboratory analysis of the full VOC list referencing EPA Method TO-15 (MADEP Method WSC-CAM-IXB). The full analyte list was reported to aid in determining non-target VOCs were contributing to increased carbon consumption. Analytical results of the soil vapor samples are summarized on **Table 11**. A complete copy of the laboratory analytical report is provided in **Appendix F**.

Analytical results of the July 8, 2014, grab soil vapor samples from the Building 3 SVE wells indicated:

- TCE was detected at 2,900 ug/m<sup>3</sup> in BLDG3-SVE2; and
- PCE was detected at 3.6 ug/m<sup>3</sup> in BLDG3-SVE Influent and 99,000 ug/m<sup>3</sup> in BLDG3-SVE2.

Other VOC reported above detection limits in soil vapor samples collected from the Building 3 SVE wells in July 2014 include 2-butanone (at 0.96 ug/m<sup>3</sup>) acetone (up to 39 ug/m<sup>3</sup>), and carbon tetrachloride (at 0.47 ug/m<sup>3</sup>). In addition, estimated concentrations of a number of VOC below the method reporting limit, but above the method detection limit, were reported by the laboratory to evaluate carbon consumption. These estimated data indicate the presence of low levels of VOC that have high carbon consumption rates and which may be impacting carbon performance. For example, dichloromethane (methylene chloride) and vinyl chloride were reported at estimated concentrations of 0.38 ug/m<sup>3</sup> and 0.057 ug/m<sup>3</sup>, respectively, in the carbon influent vapor sample (**Table 11**).

On September 25, 2014, grab soil vapor samples were collected from the Building 3 SVE system to assess VOC concentrations in the recovered vapor at existing well BLDG3-SVE1, and the two new SVE wells BLDG3-SVE3 and BLDG3-SVE4. Each grab sample was collected using evacuated Summa® canisters. The soil vapor samples collected were submitted to ALS for laboratory analysis of full VOC list referencing EPA Method TO-15 (MADEP Method WSC-CAM-IXB). Analytical results of the soil vapor samples are summarized on **Table 11**. A complete copy of the laboratory analytical report is provided in **Appendix F**.

Analytical results of the September 25, 2014, grab soil vapor samples from the Building 3 SVE wells indicated:

- TCE was detected at concentrations ranging from 3 ug/m<sup>3</sup> at BLDG3-SVE1 to 5,000 ug/m<sup>3</sup> at BLDG3-SVE3
- PCE was detected at concentrations ranging from 240 ug/m<sup>3</sup> at BLDG3-SVE1 to 410,000 ug/m<sup>3</sup> at BLDG3-SVE3
- Acetone was detected at concentrations ranging from 290 ug/m<sup>3</sup> at BLDG3-SVE1 to 37,000 ug/m<sup>3</sup> at BLDG3-SVE4

- 2-butanone (methyl ethyl ketone) was detected at concentrations ranging from 63 ug/m<sup>3</sup> at BLDG3-SVE1 to 13,000 ug/m<sup>3</sup> at BLDG3-SVE4

Additional VOC reported above detection limits in soil vapor samples collected from the Building 3 SVE wells in September 2014 include cis-1,2-DCE (at 120 ug/m<sup>3</sup>), trans-1,2-DCE (at 8 ug/m<sup>3</sup>), dichloromethane (at 7 ug/m<sup>3</sup>) and toluene (at 1 ug/m<sup>3</sup>).

#### **2.4.4 Building 3 SVE System Performance**

Measured VOC concentrations in soil vapor recovered by the Building 3 SVE system using a PID are evaluated to approximate the VOC mass removed by the treatment system. Both the VOC mass removal rate and total VOC mass removed by the Building 3 SVE system are presented in **Table 12** and illustrated in **Figure 13**. Since the SVE system was activated in December 2009, it has removed an estimated 1,526 pounds of VOCs from beneath Building 3. During this reporting period a total of approximately 148 pounds of VOCs were removed by the Building 3 SVE system. Initial monitoring and sampling of vapor extracted from horizontal wells BLDG3-SVE3 and BLDG3-SVE4 indicate elevated concentrations of VOC. These data illustrate the wells are located in areas with residual VOC in vadose zone soil.

Monitoring of applied vacuum beneath the Building 3 floor is conducted at the sub-slab vapor monitoring points installed inside Building 3. The results of this monitoring are provided on **Table 10** for the current reporting period and the locations of the sub-slab vapor monitoring are illustrated on **Figure 11**. Results of this monitoring indicate that vacuum influence from operation of the SVE system is present beneath Building 3, including point BLDG3-VP6, which is located approximately 22 feet to the south of BLDG3-SVE2. This data demonstrates soil vapor control is maintained by operation of the Building 3 SVE system beneath this portion of the Building 3 floor slab.

#### **2.5 Building 5 SVE System**

The Building 5 SVE system was installed in December 2012 and system startup was completed in March 2013. The SVE system was designed to reduce VOC concentrations in the vadose zone soil beneath Building 5 as well as to control potential vapor intrusion into the building.

The SVE system consists of the following components:

- three horizontal soil vapor extraction wells (BLDG5-SVE1, BLDG5-SVE2, and BLDG5-SVE3) installed beneath Building 5;
- one 5 horsepower regenerative blower;
- one moisture knock-out drum; and
- two 2,000-pound carbon vessels piped in series (with a spare third 2,000 pound carbon vessel).

The locations of the three SVE wells are shown on **Figure 14**. The October 2013 status report included an O&M Manual developed to ensure that the system is operated properly to meet the intended design criteria and achieve site remedial goals (Shaw, 2013c). The O&M Manual includes manufacturer's literature and specific procedures for individual components for proper operation and maintenance. As-

built drawings for the SVE system, a site-specific data collection form, preventive maintenance charts for key equipment and appropriate system start-up and shutdown procedures were also included.

The following section presents data regarding the operation of the Building 5 SVE system during this reporting period. In addition to the normal operation of the Building 5 SVE system, soil vapor and indoor air sampling was conducted in Building 5 and an additional extraction well was installed and connected to the system.

### **2.5.1 Building 5 Soil Vapor and Indoor Air Sampling**

On April 1, 2014 indoor air samples were collected from three new locations inside Building 5 and adjacent Building 8. The sampling was conducted to assess potential indoor air impacts in Building 5 and in the Building 8 basement downgradient of well OB44-S where elevated VOC concentration were detected in shallow groundwater following installation of this well in December 2013. These new locations included BLDG5-5 (cathode spray room), BLDG5-6 (common office area), and BLDG8-1 (high power testing in Building 8 Basement). The samples were collected using evacuated Summa® canisters over an eight-hour sampling interval. The indoor air sampling locations are illustrated on **Figure 14**. The indoor air samples collected were submitted to ALS for laboratory analysis of VOCs by EPA Method TO-15. Analytical results of the indoor air samples are summarized on **Table 13**. Complete copies of the laboratory analytical reports are provided in **Appendix F**.

Analytical results of the April 1, 2014 indoor air samples collected from within Building 5 indicate:

- TCE was detected at concentrations ranging from 0.79 ug/m<sup>3</sup> in BLDG5-5 to 5.2 ug/m<sup>3</sup> in BLDG5-6;
- PCE was detected at concentrations ranging from non-detectable in BLDG5-5 to 0.81 ug/m<sup>3</sup> in BLDG5-6; and
- Acetone was detected at concentrations ranging from 86 ug/m<sup>3</sup> in BLDG8-1 to 3900 ug/m<sup>3</sup> in BLDG5-5

Several additional VOC were reported at low levels in indoor air samples collected from the Building 5 in April 2014, including 2-butanone, carbon tetrachloride, cis-1,2-DCE, trans-1,2-DCE, 4-methyl-2-pentenone, toluene and xylenes.

The results of the April 2014 indoor air samples from Building 5 indicate concentrations of target VOC such as TCE and PCE are similar or lower than those previously detected in the Building 5 treatment area (e.g. locations BLDG5-1 and BLDG5-2). Therefore, it appears that potential impacts to indoor air are limited to the current Building 5 SVE treatment area and are nearly non-detectable in the Building 8 basement.

On June 17, 2014, sub-slab soil vapor samples were collected from six soil vapor points beneath Building 5 (BLDG5-SV1, BLDG5-SV2, BLDG5-SV3, BLDG5-SV4, BLDG5-SV5, and BLDG5-SV6, **Figure 14**). The samples were collected to evaluate current VOC concentrations beneath the building. The vapor samples were collected using an evacuated Summa® canister over a four-hour sampling interval and submitted to ALS for laboratory analysis of select VOCs by EPA Method TO-15. Analytical results of the June 17 2014 sub-slab soil vapor samples are summarized on **Table 14**. Complete copies of the laboratory analytical reports are provided in **Appendix F**.

Analytical results of the June 17, 2014 sub-slab soil vapor samples collected beneath Building 5 indicated:

- TCE was detected at concentrations ranging from 6 ug/m<sup>3</sup> in BLDG5-SV5 to 970 ug/m<sup>3</sup> in BLDG5-SV6;
- PCE was detected at concentrations ranging from 8.1 ug/m<sup>3</sup> in BLDG5-SV2 to 420 ug/m<sup>3</sup> in BLDG5-SV6;
- cis-1,2-DCE was detected at a concentration of 950 ug/m<sup>3</sup> in BLDG5-SV6;
- TCA was detected at a concentration of 680 ug/m<sup>3</sup> in BLDG5-SV6;
- 1,1-dichloroethene was detected at a concentration of 280 ug/m<sup>3</sup> in BLDG5-SV6; and
- 1,1-dichloroethane was detected at a concentration of 1,600 ug/m<sup>3</sup> in BLDG5-SV6.

Additional VOC reported above detection limits in sub-slab soil vapor samples collected from beneath Building 5 in June 2014 included: 2-buanone (up to 200 ug/m<sup>3</sup>); 2-hexanone (at 15 ug/m<sup>3</sup>); 4-methyl-2-pentanone (up to 98 ug/m<sup>3</sup>); acetone (up to 960 ug/m<sup>3</sup>); carbon tetrachloride (up to 0.49 ug/m<sup>3</sup>); ethylbenzene (at 10 ug/m<sup>3</sup>); toluene (up to 24 ug/m<sup>3</sup>); vinyl chloride (19 ug/m<sup>3</sup>); styrene (18 ug/m<sup>3</sup>) and xylenes (up to 50 ug/m<sup>3</sup>) .

Data from soil vapor sampling in June 2014 indicated VOC concentrations similar to or less than January 2014 sampling and continue to reflect a significant decrease in TCE and PCE concentrations compared to analytical results from before the Building 5 SVE system was activated.

In conjunction with the June 17, 2014 sub-slab soil vapor sampling, indoor air samples were collected from the Building 5 treatment area. Indoor air samples were collected from inside Building 5 (BLDG5-1, BLDG5-2, and BLDG5-3) using evacuated Summa® canisters over an eight-hour sampling interval. The indoor air sampling locations are illustrated on **Figure 14**. This sampling was conducted to assess VOC concentration trends in indoor air of Building 5 with the SVE system operating. The indoor air samples collected were submitted to ALS for laboratory analysis of VOCs by EPA Method TO-15. Analytical results of the indoor air samples are summarized on **Table 13**. Complete copies of the laboratory analytical reports are provided in **Appendix F**.

Analytical results of the June 17, 2014 indoor air samples collected from within Building 5 indicated:

- TCE was detected at concentrations ranging from 3.5 ug/m<sup>3</sup> in BLDG5-3 to 11 ug/m<sup>3</sup> in BLDG5-2; and
- PCE was detected at concentrations ranging from 3.3 ug/m<sup>3</sup> in BLDG5-3 to 11 ug/m<sup>3</sup> in BLDG5-2.

Additional VOC reported above detection limits in the indoor air samples collected in Building 5 in April 2014 included 2-butanone (up to 380 ug/m<sup>3</sup>); acetone (4,100 ug/m<sup>3</sup>); and 4-methyl-2-haxanone (up to 91 ug/m<sup>3</sup>).

Concentrations of VOC detected in indoor air samples since the Building 5 SVE system began operation do not indicate a consistent decreasing trend, despite significantly lower VOC concentrations in soil vapor beneath the building. As a result, installation of a new SVE trench well was completed to provide additional treatment in the area of well OB44-S.

### **2.5.2 Building 5 SVE Trench Installation**

Based upon the available data, it appears that the existing Building 5 SVE system has significantly reduced VOC concentrations in soil vapor beneath Building 5 and has reduced VOC concentrations in the indoor air at the Sanding Room. However, it appears that shallow VOC impacts indicated at OB44-S, adjacent to the former utility trench sump, are continuing to impact indoor air in the QA Area (BLDG5-1) and Shipping Area (BLDG5-2). The area of OB44-S is outside of the current radius of influence of the three existing SVE trench wells. Therefore, CB&I installed an additional SVE trench extraction well (BLDG5-SVE4) adjacent to well OB44-S in Building 5. Installation of the new SVE trench well was conducted by Enpro Services from August 8 to 11, 2014 under the direct supervision of CB&I. Installation was conducted during the manufacturing shutdown to limit impacts to facility operations. The trench SVE well was installed by cutting through the concrete floor and excavating to a depth of approximately 4 feet below the floor. An extraction well consisting of 15 feet of four inch PVC screen material and approximately 3.5 feet of 4 inch PVC riser was then installed within the excavation. The trench was then backfilled with approximately 3.5 feet of clean, graded stone around the screen and approximately six inches of clean fill over the stone. Once backfilled, new concrete was installed. The location of the new SVE well BLDG5-SVE4 is shown on **Figure 14**.

### **2.5.3 Building 5 SVE System Operation and Maintenance**

During this monitoring period, regular twice-monthly O&M site visits were performed by CB&I personnel. Activities performed during regular O&M visits include checking and recording information from SVE system alarms, gauges and meters, and screening soil vapor recovered by the system with a PID to assess VOC recovery and off-gas treatment removal efficiency. The results of regular O&M system monitoring conducted from April 1, 2014 to September 30, 2014 are summarized in **Table 15**. From April 1, 2014 to September 30, 2014, the average total flow rate for the SVE system was approximately 128 cfm, with an average pretreatment total VOC concentration of 1.6 ppm. VOC recovery continues to be higher at vapor extraction well BLDG5-SVE1, with an average concentration of approximately 4.2 ppm during this reporting period. On August 11, 2014, soil vapor extraction began at well BLDG5-SVE4. Screening of soil vapor from the new SVE trench well indicated an initial VOC concentration of 0.4 ppm at BLDG5-SVE4. These results are discussed further below.

**Table 15** also includes calculated off-gas treatment removal efficiency, which demonstrates greater than 95 percent removal of VOCs from the SVE system discharge was maintained during this reporting period by the carbon treatment vessels as required by MADEP (MADEP, 1994).

During O&M site visits, the applied vacuum on the SVE wells was adjusted to optimize VOC recovery from beneath Building 5. This included increasing or decreasing applied vacuum on the individual SVE wells or adjusting the ambient air dilution valve to increase or decrease the total applied vacuum. Other activities performed during this reporting period included draining condensation from lines in the system and monitoring vacuum influence at the sub-slab soil vapor points inside Building 5.

### **2.5.4 Building 5 SVE System Performance**

Measured VOC concentrations in soil vapor recovered by the SVE system using a PID are evaluated to approximate the VOC mass removed by the treatment system. Both the mass removal rate and total mass removed by the Building 5 SVE system are presented in **Table 16** and illustrated in **Figure 15**.



Since the Building 5 SVE system was activated on March 11, 2013, through the end of this reporting period, it has removed an estimated 82 pounds of VOCs from beneath Building 5.

On May 14, 2014 and September 23, 2014, grab soil vapor samples were collected from the SVE system. In May vapor samples were collected from BLDG5-SVE1, BLDG5-SVE2, and the carbon influent. In September, vapor samples were collected from BLDG5-SVE1, BLDG5-SVE2, BLDG5-SVE4, and the carbon influent. Each sample was collected using an evacuated Summa<sup>®</sup> canister and was submitted to ALS for laboratory analysis of select VOCs by EPA Method TO-15. Analytical results of the soil vapor samples are summarized on **Table 17**. A complete copy of the laboratory analytical report is provided in **Appendix F**.

Analytical results of the May 14, 2014, grab soil vapor samples from the Building 5 SVE system indicated:

- TCE was detected at concentrations ranging from 260 ug/m<sup>3</sup> in BLDG5-SVE2 to 9,900 ug/m<sup>3</sup> in BLDG5-SVE1;
- PCE was detected at concentrations ranging from 200 ug/m<sup>3</sup> in BLDG5-SVE2 to 920 ug/m<sup>3</sup> in BLDG5-SVE1; and
- cis-1,2-DCE was detected at concentrations ranging from 53 ug/m<sup>3</sup> in BLDG5-SVE2 to 230 ug/m<sup>3</sup> in BLDG5-SVE1.

Additional VOC reported above detection limits in soil vapor samples collected from the Building 5 SVE system in May 2014 include 1,1,-TCA (at 5.1 ug/m<sup>3</sup>), 2-butanone up to 51 ug/m<sup>3</sup>), 4-methyl-2-pentanone (at 13 ug/m<sup>3</sup>), and acetone (up to 130 ug/m<sup>3</sup>).

Analytical results of the September 23, 2014, grab soil vapor samples from the Building 5 SVE system indicated:

- TCE was detected at concentrations ranging from 7 ug/m<sup>3</sup> in BLDG5-SVE4 to 30,000 ug/m<sup>3</sup> in BLDG5-SVE1;
- PCE was detected at concentrations ranging from 59 ug/m<sup>3</sup> in BLDG5-SVE4 to 3,000 ug/m<sup>3</sup> in BLDG5-SVE1; and
- cis-1,2-DCE was detected at concentrations ranging from non-detectable in BLDG5-SVE4 to 300 ug/m<sup>3</sup> in BLDG5-SVE1.

Additional VOC reported above detection limits in soil vapor samples collected from the Building 5 SVE system in September 2014 included: 2-butanone (up to 21 ug/m<sup>3</sup>), acetone (up to 73 ug/m<sup>3</sup>), and dichloromethane (up to 27 ug/m<sup>3</sup>).

As indicated on **Table 17**, VOC concentrations in soil vapor from the Building 5 Area extraction wells have decreased overtime due to operation of the SVE system. For example, the TCE concentration detected at BLDG5-SVE1 has decreased from 240,000 ug/m<sup>3</sup> during the pilot test in September 2012 to 30,000 ug/m<sup>3</sup> in September 2014 (after 539 days of SVE system operation). Based on September 2014 soil vapor analytical results from extraction well BLDG5-SVE4, VOC recovery is lower than would be expected considering the elevated VOC concentrations detected in soil and groundwater at adjacent well OB44-S.

Monitoring the vacuum beneath the Building 5 floor is conducted at six sub-slab vapor monitoring points (BLDG5-SV1, BLDG5-SV2, BLDG5-SV3, BLDG5-SV4, BLDG5-SV5 and BLDG5-SV6) installed inside the building (**Figure 14**). The monitoring data indicates that vacuum influence from operation of the SVE system is observed at most of the monitoring vapor monitoring locations demonstrating vapor control beneath this portion of the Building 5 floor slab.

On September 24, 2014, sub-slab soil vapor and indoor air samples were collected in the Building 5 area to assess the impact of operating the new SVE trench well on VOC concentration in soil vapor and indoor air. Vapor samples were collected from five sub-slab soil vapor points beneath Building 5 (BLDG5-SV2, BLDG5-SV3, BLDG5-SV4, BLDG5-SV5, and BLDG5-SV6). Indoor air samples were collected at four locations within Building 5 (BLDG5-1, BLDG5-2, BLDG5-3 and BLDG5-6). Soil vapor samples were collected using an evacuated Summa® canister over a four-hour sampling interval. Indoor air samples were collected using an evacuated Summa® canister over an eight-hour sampling interval. The soil vapor and indoor air samples collected were submitted to ALS for laboratory analysis of VOC by EPA Method TO-15.

Analytical results of the September 24, 2014 sub-slab soil vapor samples are summarized on **Table 14**. A complete copy of the laboratory analytical report is provided in **Appendix F**. Analytical results of these sub-slab soil vapor samples collected beneath Building 5 indicated:

- TCE was detected at concentrations ranging from 4 ug/m<sup>3</sup> in BLDG5-SV5 to 390 ug/m<sup>3</sup> in BLDG5-SV6;
- PCE was detected at concentrations ranging from non-detectable in BLDG5-SV4 to 97 ug/m<sup>3</sup> in BLDG5-SV6;
- cis-1,2-DCE was detected at a concentration of 590 ug/m<sup>3</sup> in BLDG5-SV6;
- 1,1,1-TCA was detected at a concentration of 490 ug/m<sup>3</sup> in BLDG5-SV6; and
- 1,1-dichloroethene and 1,1-dichloroethane were detected in BLDG5-SV6 at a concentrations of 350 ug/m<sup>3</sup> and 1,800 ug/m<sup>3</sup>, respectively.

Additional VOC reported above detection limits in sub-slab soil vapor samples collected from beneath Building 5 in June 2014 included: 2-buanone (up to 230 ug/m<sup>3</sup>), 2-hexanone (up to 5 ug/m<sup>3</sup>), 4-methyl-2-pentanone (up to 62 ug/m<sup>3</sup>), acetone (up to 300 ug/m<sup>3</sup>), 1,3 dichlorobenzene (up to 13 ug/m<sup>3</sup>), benzene (up to 2 ug/m<sup>3</sup>), ethylbenzene (up to 10 ug/m<sup>3</sup>), toluene (up to 29 ug/m<sup>3</sup>), dichloromethane (up to 350 ug/m<sup>3</sup>); and xylenes (up to 54 ug/m<sup>3</sup>) .

Analytical results of the September 24, 2014 indoor air samples are summarized on **Table 13**. A complete copy of the laboratory analytical report is provided in **Appendix F**. Analytical results of these indoor air samples from Building 5 indicated:

- TCE was detected at concentrations ranging from non-detectable at BLDG5-3 and BLDG5-6 to 9 ug/m<sup>3</sup> in BLDG5-1;
- PCE was detected at concentrations ranging from non-detectable at BLDG5-3 and BLDG5-6 to 8 ug/m<sup>3</sup> in BLDG5-SV1 and
- cis-1,2-DCE was detected at concentrations ranging from non-detectable at BLDG5-3 and BLDG5-6 to 1 ug/m<sup>3</sup> in BLDG5-SV6.

Additional VOC reported above detection limits in sub-slab soil vapor samples collected from beneath Building 5 in June 2014 included: 2-butanone (up to 340 ug/m<sup>3</sup>), 4-methyl-2-pentanone (up to 100 ug/m<sup>3</sup>), acetone (up to 620 ug/m<sup>3</sup>), ethylbenzene (up to 2 ug/m<sup>3</sup>), toluene (up to 4 ug/m<sup>3</sup>), dichloromethane (up to 57 ug/m<sup>3</sup>); and xylenes (up to 10 ug/m<sup>3</sup>).

Data from soil vapor samples collected in September 2014 continue to indicate lower VOC concentrations beneath Building 5. VOC concentrations from the September 2014 indoor air samples indicate mixed results. For example, TCE and PCE were both non detectable in the Sanding Room for the first time (BLDG5-3), but concentrations of these VOC indicated a slight increase in the QA Room sample (BLDG5-1). Lower than expected VOC concentrations have been measured in the soil vapor recovered by the new SVE trench well BLDG5-SVE4. These data suggest that indoor air impacts in the Building 5 area may be more directly from shallow groundwater rather than residual VOC in vadose zone soil. Even with operation of the SVE system, TCE concentrations in indoor air at Building 5 have periodically been detected above 8 ug/m<sup>3</sup>, which MADEP has specified as the long-term remediation target for situations where workplace indoor air has been impacted by vapor intrusion. This MADEP target is intended to be protective of developmental toxicity as well as other potential effects. Therefore, it appears that shallow groundwater treatment may be warranted in the Building 5 area.

## 2.6 32 Tozer Road Soil Vapor and Indoor Air Sampling

Previously collected data, including indoor air sampling results, indicated a condition of No Significant Risk exists at the 32 Tozer road building. Building renovations by the owner that resulted significant changes to the 32 Tozer Road building floor plan were completed in May 2013. To confirm that a condition of No Significant Risk still existed at this property following these renovations, CB&I completed soil vapor and indoor air sampling within the 32 Tozer Road building during previous reporting periods in May 2013, October 2013, and February 2014, and in April 2014 during this reporting period.

On April 17, 2014, three sub-slab soil vapor samples (32Tozer-SV3, 32Tozer-SV4, and 32Tozer-SV5) were collected from beneath the building floor at 32 Tozer Road using evacuated Summa<sup>®</sup> canisters over a four-hour sampling interval. The locations of soil vapor sampling points are shown on **Figure 16**. These samples were submitted to ALS Environmental for analysis of select VOCs by EPA Method TO-15.

Analytical results of the sub-slab soil vapor samples collected beneath the 32 Tozer Road building on April 17, 2014 are summarized in **Table 18**. A complete copy of the laboratory analytical report is included in **Appendix F**. The April 17, 2014 soil vapor analytical results indicated the following:

- TCE was detected at concentrations ranging from 0.41 ug/m<sup>3</sup> in 32 Tozer-SV5 to 4,500ug/m<sup>3</sup> in 32 Tozer-SV3;
- PCE was detected at concentrations ranging from 1.4 ug/m<sup>3</sup> in 32 Tozer-SV5 to 14,000 ug/m<sup>3</sup> in 32 Tozer-SV3;
- cis-1,2-DCE was reported at concentrations ranging from non-detectable in 32 Tozer-SV5 to 17,000 ug/m<sup>3</sup> in 32 Tozer-SV3;
- 1,1-dichloroethane was detected at 0.8 ug/m<sup>3</sup> in 32 Tozer-SV4; and
- vinyl chloride was detected at 1.2 ug/m<sup>3</sup> in 32 Tozer-SV4.

Data from the April 2014 soil vapor samples indicate similar results to previous sampling rounds at location 32 Tozer-SV5 and 32 Tozer-SV4, but indicate an increase in VOC concentrations in location 32 Tozer-SV3.

As shown on **Table 18**, concentrations of some VOC in sample 32Tozer-SV3 from April 17, 2014 exceeded the Commercial/Industrial Sub-Slab Soil Gas Screening Values, which are screening criteria recommended by the MADEP for initial evaluation of soil vapor data in a commercial or industrial setting.

In conjunction with sub-slab soil vapor sampling on April 17, 2014, three indoor air samples (32Tozer-1, 32Tozer-2, and 32Tozer-3) were collected using evacuated Summa<sup>®</sup> canisters over an eight-hour sampling interval (**Figure 16**). These indoor air samples were submitted to ALS for analysis of select VOC by EPA method TO15.

Analytical results of the indoor air samples collected inside the 32 Tozer Road building April 17, 2014 are also summarized in **Table 18**. A complete copy of the laboratory analytical report is included in **Appendix F**. The April 17, 2014 indoor air analytical results indicated the following:

- TCE was reported at concentrations ranging from non-detectable in 32Tozer-3 to 1.9 ug/m<sup>3</sup> in 32 Tozer-1;
- PCE was detected at concentrations ranging from 0.26 ug/m<sup>3</sup> in 32Tozer-3 to 18 ug/m<sup>3</sup> in 32 Tozer-1; and
- cis-1,2-DCE was reported at concentrations ranging from non-detectable in 32Tozer-3 to 3.9 ug/m<sup>3</sup> in 32 Tozer-1.

In general, VOC concentrations detected in the four indoor sampling events conducted in May 2013, October 2013, February 2014, and April 2014 at 32 Tozer Road indicate similar levels. As indicated in **Table 18**, PCE was detected in the April 2014 indoor air sample at concentrations exceeding the Commercial/ Industrial Threshold Value in 32Tozer-1. This threshold value is a screening criterion recommended by the MADEP for initial evaluation of indoor air data in a commercial or industrial setting. Further evaluation of potential risk associated with indoor air at 32 Tozer Road was therefore conducted and is discussed in section 4.3.

## 2.7 Quality Assurance/Quality Control (QA/QC)

In general, the environmental data collected by CB&I during these remedial monitoring activities meets the "presumptive certainty" criteria described in MADEP guidance (MADEP, 2004a). To make this determination, the laboratory reports were reviewed by CB&I to confirm that each sample was analyzed within holding times and to ensure that surrogate recoveries and internal laboratory standards were within QA/QC limits. Based on a data usability assessment of the laboratory analytical reports, the data are appropriate for use in this ROS report. Copies of Data Usability Worksheets that document this review are included with each laboratory analytical report in **Appendix F**. If applicable, results from samples reported beyond the calibration range of the laboratory instrument are flagged with an "E" (exceeds calibration range) qualifier in the laboratory analytical report. However, these samples were reanalyzed by the laboratory as a secondary diluted sample. A "D" (diluted) qualifier in the laboratory analytical report and on the data tables indicates compounds that are reported from a secondary diluted sample.

Potential QA/QC issues identified during this reporting period included percent recoveries outside of control limits for certain compounds in laboratory control samples (LCS)/laboratory control sample duplicates (LCSD) in ALS submission numbers R1302631, R1402601, R1402779, R1403116, 2027489, 2031945 and 2031370. As a result of this, a "J" (estimated) qualifier was assigned to positive detects in applicable samples while non-detect results were not qualified.

In ALS submission number R1302631, R1402595 and R1402727, certain batches of samples had continued calibration verification (CCV) outside the control range. As a result, a "UJ" (non-detect, estimated) qualifier was assigned to non-detectable results in applicable samples.

In ALS submission number R1405214, a faulty regulator on the summa canister of sample BLDG3-SVE1 resulted in ambient air dilution of the sample. As a result positive and non-detect results were assigned a "J" (estimated) qualifier.

In summary, no data collected during this reporting period were rejected and the data generally meet the QA/QC requirements of the MCP.

### **3.0 SIGNIFICANT MODIFICATIONS TO THE OPERATION, MAINTENANCE, AND/OR MONITORING PROGRAM (310 CMR 40.0892 (2)(b))**

No major modifications to the remediation or monitoring plans for the Site were made during this reporting period. One minor adjustment to the field monitoring plan was made during this reporting period. During previous years, well monitoring was conducted on a bi-weekly schedule following permanganate injections to confirm no adverse impacts resulted from the injections. As part of the 2014 permanganate treatment program, field monitoring was conducted monthly. It is anticipated that the monthly monitoring schedule will continue to provide data needed to confirm no adverse impacts resulted from the injections as required by MADEP guidance.

The original Phase IV Plan (IT, 2001) detailed groundwater remediation and monitoring activities for the various permanganate treatment areas of the Site. Plans for the bioremediation monitoring activities have been presented in previous ROS status reports. The operation, maintenance and monitoring plan for the Building 3 SVE system was submitted to the MADEP in a March 2010 IRA status report (Shaw 2010a). The operation, maintenance and monitoring plan for the Building 5 SVE system was presented in the modified Phase IV Plan (Shaw, 2012d). Minor adjustments to these remedial monitoring plans will continue to be made as site conditions warrant and will be reported in subsequent ROS reports.

### **4.0 EVALUATION OF THE PERFORMANCE OF REMEDIAL ACTIVITIES (310 CMR 40.0892 (2)(c))**

As described in the preceding sections, remedial activities are progressing at the former Varian Facility Site in general accordance with the Phase IV Plan (IT, 2001) and the Modified Phase IV Plan (Shaw 2012d). Generally lower VOC levels and decreasing VOC concentration trends in groundwater have been observed at monitoring wells across the Site as a result of the permanganate injection program. October 2014 groundwater analytical results will be reviewed in an effort to determine if further treatment is required.

In addition, the limited bioremediation program which began at the Site in 2006 has resulted in significant decreases in VOC levels in shallow groundwater near the Unnamed Stream, where permanganate application is not appropriate. The deep overburden bioremediation injections conducted near the northeast corner of Building 3 were successful in establishing culture activity in the deep aquifer and distributing lactate to the target wells particularly wells AP23-DO and AP24-DO to sustain biodegradation. Monitoring data indicates that some reductive dechlorination is occurring in this area. However, the groundwater monitoring results indicated lower levels of carbon are available to sustain bioremediation activity. Due to the lower total organic carbon concentrations and the continued elevated TCA and TCE levels in this area, Varian plans to injection EVO as a carbon source for reductive dechlorination in the deep overburden during the next reporting period. Monitoring results from sampling events after these injections (e.g. January and April 2015) will be evaluated to determine future steps in the bioremediation program.

Site data continue to show that the remedial program is effectively treating Site groundwater in accordance with remedial objectives.

The Building 3 and Building 5 SVE systems are being operated in accordance with their respective Phase IV O&M plans (Shaw, 2012d and Shaw, 2013a). Monitoring of vacuum beneath the building floor in each area is conducted to demonstrate that soil vapor control is maintained beneath Buildings 3 and 5.

The indoor air samples collected at the April 2014 temporary shutdown of the Building 3 SVE system in April 2014 continue to indicate that operation of the SVE system is needed to mitigate VOC impacts to indoor air. It is expected that operation of the two new SVE wells will address additional VOC impacts in the vadose zone and further reduce potential vapor migration into the building. Data from the Building 3 area will be evaluated over the next reporting period to assess the impact of the two new horizontal SVE wells on site conditions. In addition, the Building 3 horizontal SVE wells will be utilized to inject permanganate beneath Building 3 to provide groundwater treatment. Application of permanganate directly to VOC impacted groundwater where historic releases likely occurred will help to limit rebound of VOC concentrations at deep overburden wells in the Building 3 Area and may also reduce potential VOC migration into indoor air. After this additional treatment is conducted, further soil vapor and indoor air sampling will be conducted in the Building 3 area to evaluate remedial progress.

Data from the Building 5 area suggest that indoor air impacts in the building may be more directly related to VOC in shallow groundwater than residual VOC in vadose zone soil. Because TCE concentrations in indoor air at Building 5 have periodically been detected above MADEP's long-term remediation target for workplace indoor air ( $8 \text{ ug/m}^3$ ) with operation of the SVE system, it appears that shallow groundwater treatment may also be warranted in the Building 5 area. Over the next reporting period Varian will evaluate completing shallow groundwater treatment using the existing Building 5 SVE trench wells (e.g. permanganate or bioremediation injections) to further reduce potential impacts to indoor air.

The following sections present an updated evaluation, including new data collected during this monitoring period as it pertains to potential risk posed by oil or hazardous materials associated with the Site and potential receptors.

#### **4.1 Building 3 Indoor Air Evaluation**

The Phase II CSA for the Building 3 remedial area (Shaw, 2012b) included an evaluation of exposure to indoor air with the SVE system operating, considering four rounds of indoor air data collected from February 2011 to January 2012. The conclusion of the Phase II evaluation was that a Condition of No Significant Risk has been achieved with the operation of the SVE system. A subsequent round of indoor air samples in November 2013 confirmed that the SVE system is continuing to maintain a Condition of No Significant Risk. In addition, no conditions of Imminent Hazard have been identified. In particular, concentrations of TCE in indoor air with the system operating have been consistently below the Imminent Hazard value set by MADEP for occupational settings of 24 ug/m<sup>3</sup> (MADEP, 2014). It should be noted that, even during the temporary shutdown of the Building 3 system in April 2014, TCE concentrations in indoor air remained below MADEP's long-term remediation target of 8 ug/m<sup>3</sup> for workplace indoor.

#### **4.2 Building 5 Indoor Air Evaluation**

As shown in **Table 14**, soil vapor VOC concentrations beneath Building 5 have decreased substantially with the operation of the SVE system. Indoor air concentrations were relatively low prior to the installation of the SVE system and have also declined (**Table 13**), though not to the same degree as soil vapor. In the April 2012 ROS report (Shaw, 2012a), an evaluation of indoor air exposure was conducted using three rounds of pre-treatment indoor air data, collected from August 2011 to January 2012. This evaluation concluded that indoor air sampling results did not indicate the presence of an Imminent Hazard or Significant Risk in Building 5. However, indoor air concentrations are likely to be variable and the risk was at, but did not exceed, the MADEP limit. Therefore, Varian has continued to operate and maintain the Building 5 SVE system.

The April 2014 ROS report included a risk evaluation which considered four rounds of indoor air data collected since the installation of the Building 5 SVE system (CB&I, 2014). The risk evaluation concluded that the SVE system has achieved a condition of No Significant Risk (and no Imminent Hazard) while in operation. No new evaluation was conducted on analytical results collected during this reporting period. However, indoor air results from June and September 2014 indicated VOC concentrations consistent with the data evaluated in the April 2014 ROS report. Therefore, the SVE system continues to maintain a condition of No Significant Risk (and no Imminent Hazard) while in operation.

#### **4.3 Evaluation of Off-Site Properties**

##### **4.3.1 32 Tozer Road**

In April 2014, CB&I conducted the fourth round of indoor air and soil vapor sampling at the 32 Tozer Road property since the completion of building renovations in April 2013 (section 2.6 above). The results of these four rounds of indoor air sampling (May 2013, October 2013, February 2014 and April 2014) have been evaluated in accordance with the MCP to conservatively estimate potential risk from VOC in indoor air due to vapor intrusion.

CB&I used the maximum concentration of each VOC detected over the four sampling events to conservatively estimate risk in accordance with evaluation procedures established by MADEP. The

maximum indoor air concentrations of TCE, PCE and cis-1,2-dichloroethene detected in the four rounds were 1.9 ug/m<sup>3</sup>, 18 ug/m<sup>3</sup>, and 3.9 ug/m<sup>3</sup>, respectively. The risk evaluation, including input parameters and calculations, is presented on **Table 19**. The estimated non-cancer hazard resulted in a Hazard Index of 0.5. This estimated Hazard Index does not exceed the MCP cumulative non-cancer risk limit of 1 for Significant Risk. The estimated cancer risk was 5x10<sup>-6</sup>, which is below the MCP cumulative cancer risk limit of 1 in 100,000 or 1x10<sup>-5</sup>. Based on this evaluation, the data demonstrate a condition of No Significant Risk exists at the 32 Tozer Road property in accordance with MADEP criteria. In addition, the TCE concentrations in indoor air at 32 Tozer Road (**Table 18**) have consistently been less than 8 ug/m<sup>3</sup>, which MADEP has specified as the long-term remediation target for situations where workplace indoor air has been impacted by vapor intrusion to be protective of developmental toxicity as well as other potential effects.

#### **4.3.2 30 Tozer Road**

The April 2013 ROS report included an indoor air evaluation for 30 Tozer Road, which concluded that a condition of No Significant Risk associated with VOCs from the former Varian Site existed at the 30 Tozer Road property (Shaw, 2013b). The ROS report stated that additional indoor air sampling at 30 Tozer Road may be conducted if increased VOC concentrations are observed at shallow monitoring well OB42-S, located adjacent to the 30 Tozer Road Building (**Figure 2**). April 2014 groundwater analytical results indicate VOC concentrations similar to previous sampling rounds in OB42-S. Therefore, a condition of No Significant Risk would still be expected.

#### **4.3.3 39 Tozer Road**

The April 2013 ROS report included an indoor air evaluation for 39 Tozer Road, which concluded that a condition of No Significant Risk associated with VOCs from the former Varian Site existed at the 39 Tozer Road property (Shaw, 2013b). The ROS report stated that additional indoor air sampling at 39 Tozer Road may be conducted if increased VOC concentrations are observed at shallow monitoring well OB41-S, located adjacent to the 39 Tozer Road Building (**Figure 2**). April 2014 groundwater analytical results indicate VOC concentrations similar to previous sampling rounds in OB41-S. Therefore, a condition of No Significant Risk would still be expected.

### **5.0 MEASURES TAKEN TO ADDRESS PROBLEMS AFFECTING THE PERFORMANCE OF THE REMEDIAL ACTION (310 CMR 40.0892 (2)(d))**

No problems affecting the performance of the selected remedial actions were identified during this reporting period. As demonstrated by the analytical data contained in this ROS report, significant remedial progress continues to be made with lower VOC concentrations measured across the Site. The performance of on-going remedial actions will continue to be documented in future ROS reports.

### **6.0 ACTIVE EXPOSURE PATHWAY MITIGATION MEASURES (310 CMR 40.1026)**

The two SVE systems being operated under this Remedy Operation Status were designed and implemented to mitigate exposure to VOCs from potential vapor migration into Building 3 and Building 5. As discussed above, the remediation system in Building 3 was installed in 2009 under an IRA. In 2013, an IRA Completion report was submitted along with a Phase IV Plan and Remedy Operation Status



Opinion (Shaw, 2013a). The Building 3 SVE system is operated as part of the ROS at this Site. The Building 5 SVE system was installed in 2013 as part of the Phase IV Plan (Shaw, 2013b) and is operated under the Phase V ROS at this Site. The SVE systems at both Building 3 and Building 5 are therefore part of the Remedy Operation Status for the Site and meet the definition of an Active Exposure Pathway Mitigation Measure established in the June 2014 revisions to the MCP. The following sections present information required by 310 CMR 40.1026 and discusses how the existing operation and maintenance plans and Site conditions meet those requirements.

### **6.1 Operational Regimen for Active Exposure Pathway Mitigation Measure (310 CMR 40.1026(3) (a), (b) & (c))**

The Operation and Maintenance (OMM) Plan for the Building 3 system was provided to the MADEP as part of the March 2010 IRA Status Report (Shaw, 2010a). The OMM Plan for the Building 5 system was provided to the MADEP as part of the April 2013 ROS Status Report (Shaw, 2013b). Each OMM Plan includes the methods of monitoring and the frequency of planned maintenance activities. The Building 3 and Building 5 operating regimens were designed to ensure a level of No Significant Risk is maintained for the Receptor of concern under normal operating conditions. Monitoring and maintenance activities regularly conducted for the remedial systems demonstrate that the systems are operating in accordance with the OMM Plans and the objectives stated in appropriate MCP submittals, thereby effectively mitigating the exposure pathway.

### **6.3 Remote Monitoring for Active Exposure Pathway Mitigation Measure (310 CMR 40.1026(3)(d))**

The MCP requires that an Active Exposure Pathway Mitigation Measure implemented as part of a Temporary Solution or Remedy Operation Status employ remote monitoring technology that will alert the owner and operator of the building protected by the Active Exposure Pathway Mitigation Measure and MADEP immediately upon failure of the system.

Currently the systems at Building 3 and 5 provide an automated text messages to CB&I when there is an alarm condition including a power failure. CB&I is currently working to reconfigure the system to also provide notice to the MADEP and the facility operator as required by the MCP. It is expected that these upgrades will be completed by the end of November 2014 and will be reported in the next status report.

### **6.4 Duration of Active Exposure Pathway Mitigation Measure Shutdown (310 CMR 40.1026(e))**

The MCP specifies that the operating regimen for an Active Exposure Pathway Mitigation Measure document the longest duration of a shutdown that would be consistent with a level of exposure that does not pose an Imminent Hazard and a level of exposure that poses No Significant Risk.

A planned shutdown of the Building 3 SVE system was conducted in April 2014. The indoor air data collected at the end of the 26-day shutdown were discussed above. For the purpose of estimating the durations required in 310 CMR 40.1026(e), these results have been compared to risk-based indoor air concentrations provided in MADEP guidance (MADEP, 2014a, MADEP 2014b and MADEP 2013).

Based on this comparison, neither the PCE concentration ( $99 \text{ ug/m}^3$ ) nor the TCE concentration ( $1.7 \text{ ug/m}^3$ ) detected at the end of the April 2014 shutdown would be an imminent hazard or substantial hazard based on non-cancer effects. The April 2014 PCE concentration detected is above those values based on  $1 \times 10^{-5}$  or  $1 \times 10^{-6}$  risk, indicating an indoor air concentration that could be a Significant Risk if the Building 3 system was not operating for a sufficient period. Using this potential indoor air concentration, the estimated time to substantial hazard for potential PCE exposure is identified as 0.8 years, as that is the time that would result in an equivalent exposure to a cancer risk of  $1 \times 10^{-6}$  over 70 years. Although the actual target cancer risk for substantial hazard is  $1 \times 10^{-5}$ , a value of  $1 \times 10^{-6}$  has been used to provide a margin of safety in estimated shutdown time. As a result, the estimated time for shutdown that could approach a Significant Risk is 0.8 years, based on PCE exposure.

A shutdown has not been conducted on the Building 5 SVE system since the system began operation in March 2013. For the purpose of estimating the durations required in 310 CMR 40.1026(e), indoor air analytical results from prior to system startup were used to compare to risk-based indoor air concentrations provided in MADEP guidance. Based on this comparison neither the PCE concentration ( $14 \text{ ug/m}^3$ ) nor the TCE concentration ( $18 \text{ ug/m}^3$ ) detected before the SVE system was activated would be an imminent hazard. The pre-treatment PCE and TCE concentrations detected are above those values based on  $1 \times 10^{-6}$  risk, indicating that indoor air concentration could be a Significant Risk if the Building 5 system was not operating for an extended period. In addition, the pretreatment TCE concentration is above the concentration associated with a Hazard Index of 1, indicating the potential for a non-cancer hazard were the system to be shutdown. The exact time for shutdown cannot be estimated since the concentration that results in non-cancer effects is not a function of time, although there is some minimum period of exposure for effects to occur. Due to concerns with short term exposure to TCE, a period of four weeks is specified for the longest shutdown period.

Regardless of this estimated time frame for either SVE system, the OMM Plans include taking prompt steps to maintain SVE system operation and it is not expected that the system would remain shut down for longer than two weeks.

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## **8.0 LIMITATIONS ON WORK PRODUCT**

The information contained in this report, including its conclusions, is based upon the information that was made available to CB&I Environmental and Infrastructure, Inc.(CB&I), (formerly Shaw Environmental, Inc.), during the investigation and obtained from the services described, which were performed within time and budgetary restraints.

CB&I makes no representation concerning the legal significance of its findings or of the value of the property investigated. CB&I has no contractual liability to any third parties for the information or opinions contained in this report.

Unless and until the parties agree otherwise in writing, the use of this report or any information contained therein by any third party shall be at such third party's sole risk. Such use shall constitute an agreement to release, defend and indemnify Varian Medical Systems, Inc. and CB&I from and against any and all liability in connection therewith.

## TABLES

Table 1

Summary of Soil Vapor Extraction Test Results  
 Building 3 Drain Lines and Injection Galleries  
 April 8 and 9, 2014

Former Varian Facility Site  
 150 Sohier Road  
 Beverly, MA

Extraction Location, Soil Vapor Extraction Rate (scfm), and Vacuum (" W.C.)	Soil Vapor Monitoring Point	Distance from Extraction Point (feet)	Vacuum (" W.C.)	Measured VOC Concentration (ppm) at SVE blower effluent (prior to carbon treatment)	Measured VOC Concentration (ppm) at carbon effluent (post treatment)
Drain Line 9 180 scfm, 5"W.C.	Drain Line 7	5.0	0.013	0.7	ND
	VP-1	5.0	0.039		
	VP-2	25.0	0.003		
	VP-3	20.0	0.002		
	VP-4	35.0	0.012		
	Injection Gallery 1	10.0	NA		
Drain Line 9 120 scfm, 2"W.C.	Drain Line 7	5.0	0.047	ND	ND
	VP-1	5.0	0.004		
	VP-2	25.0	ND		
	VP-3	20.0	ND		
	VP-4	35.0	0.005		
	Injection Gallery 1	10.0	0.020		
Drain Line 7 180 scfm, 5"W.C.	Drain Line 9	5.0	0.030	ND	ND
	VP-1	22.0	ND		
	VP-2	35.0	ND		
	VP-3	24.0	ND		
	VP-4	35.0	0.003		
	Injection Gallery 1	8.0	0.006		
Drain Line 7 120 scfm, 2"W.C.	Drain Line 9	5.0	0.018	ND	ND
	VP-1	22.0	ND		
	VP-2	35.0	ND		
	VP-3	24.0	ND		
	VP-4	35.0	0.004		
	Injection Gallery 1	8.0	0.005		
Injection Gallery 1 175 scfm, 12"W.C.	Drain Line 9	8.0	0.039	ND	ND
	VP-1	22.0	0.006		
	VP-2	25.0	0.015		
	VP-3	9.0	0.032		
	VP-4	14.0	0.041		
	Injection Gallery 2	2.0	10.57		
Injection Gallery 2 175 scfm, 12"W.C.	Drain Line 9	7.0	0.041	0.2	ND
	VP-1	10.0	0.006		
	VP-2	21.0	0.016		
	VP-3	11.0	0.024		
	VP-4	26.0	0.030		
	Injection Gallery 1	2.0	10.67		

Notes:

" W.C. = inches of water column vacuum

scfm = standard cubic feet per minute

ppm = parts per million

VOC = volatile organic compounds measured with a photoionization detector with detection limit of 0.1 ppm

ND = non-detect

NA = not available

**Table 2A**  
**Water Quality Sample Summary**  
**April 2014**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

Well ID	Location	Comments/Notes	Analysis
<b>Building 3/6 Treatment Areas</b>			
AP12-S	East Building 6	Monitor injection & Site conditions	VOC
AP12-DO	East Building 6	Monitor injection & Site conditions	VOC, Fe & Mn, Chloride, permanganate
AP12-BR	East Building 6	Monitor injection & Site conditions	VOC, Fe & Mn, Chloride, permanganate
AP13-S	East Building 3	Monitor injection & Site conditions	VOC
AP14-S	North Building 3	Monitor injection & Site conditions	VOC
AP26-DO	West Building 1 & 2	Monitor injection & Site conditions	VOC, Fe & Mn, Chloride, permanganate
AP31-DO	North Building 3	Monitor remediation and VOC trends	VOC, Fe & Mn, Chloride, permanganate
AP32-DO	North Building 3	Monitor remediation and VOC trends	VOC, Fe & Mn, Chloride, permanganate
B-3	East Building 3	Monitor injection & Site conditions	VOC
BW-5	By Unnamed Stream	Monitor shallow VOC trends	VOC
BW-6	By Unnamed Stream	Monitor shallow VOC trends	VOC
BW-8	By Unnamed Stream	Monitor shallow VOC trends	VOC
BW-9	By Unnamed Stream	Monitor shallow VOC trends	VOC
CL2-BR	16 Tozer	Monitor injection & Site conditions	VOC
CL-11S	Southwest Building 7	Monitor VOC trends	VOC
CL-11DO	Southwest Building 7	Monitor VOC trends	VOC
MW-5	East Building 4	Monitor VOC trends	VOC
MW-8	East Building 9	Monitor injection & Site conditions	VOC
MW-9A	By Unnamed Stream	Monitor shallow VOC trends	VOC
MW-13	North Building 3 by Rte 128	Monitor injection & Site conditions	VOC, Fe & Mn, Chloride, permanganate
MW-14A	North Building 1	Monitor injection & Site conditions	VOC
MW-16	South Building 4	Monitor VOC trends	VOC
MW-2R	16 Tozer	Monitor injection & Site conditions	VOC
MW-4R	16 Tozer	Monitor injection & Site conditions	VOC
OB9-DO	By Unnamed Stream	Monitor VOC trends	VOC
OB9-BR	By Unnamed Stream	Monitor VOC trends	VOC
OB10-S	East Building 4	Monitor shallow VOC trends	VOC
OB10-BR	East Building 4	Monitor injection & Site conditions	VOC
OB11-DO	North Building 3 by Rte 128	Monitor injection & Site conditions	VOC
OB11-BR	North Building 3 by Rte 128	Monitor injection & Site conditions	VOC
OB12-S	North Building 3 by Rte 128	Monitor shallow VOC trends	VOC
OB12-DO	North Building 3 by Rte 128	Monitor remediation	VOC, Fe & Mn, Chloride, permanganate



**Table 2A  
Water Quality Sample Summary  
April 2014  
Former Varian Facility Site  
150 Sohier Road  
Beverly, Massachusetts**

<b>Well ID</b>	<b>Location</b>	<b>Comments/Notes</b>	<b>Analysis</b>
OB14-DO	North Building 1	Monitor injection & Site conditions	VOC
OB19-S	West Building 1 & 2	Monitor injection & Site conditions	VOC
OB19-DO	West Building 1 & 2	Monitor remediation	VOC, Fe & Mn, Chloride, permanganate
OB25-BR	West Building 1 & 2	Monitor injection & Site conditions	VOC, Fe & Mn, Chloride, permanganate
OB26-DO	West Building 1 & 2	Monitor injection & Site conditions	VOC
OB26-BR	West Building 1 & 2	Monitor injection & Site conditions	VOC
OB27-BR	West Building 7	Monitor injection & Site conditions	VOC, Fe & Mn, Chloride, permanganate
OB28-BR	West Building 1 & 2	Monitor injection & Site conditions	VOC
OB32-DO	North Building 3	Monitor injection & Site conditions	VOC, Fe & Mn, Chloride, permanganate
OB36-DO	Inside Building 6	Monitor VOC trends	VOC, permanganate
OB37-DO	Inside Building 6	Monitor VOC trends	VOC
RW-22	North Building 1	Monitor injection & Site conditions	VOC
STR-3	Unnamed Stream	Monitor VOC trends, also Con Comm request	VOC
UNNAMED STREAM	Unnamed Stream	Monitor VOC trends, also Con Comm request	VOC
AP13-DO	East Building 3	Monitor remediation and VOC trends	VOC, methane, ethane, ethene, TOC, Dehalococcoides sp.
AP23-DO	East Building 3	Monitor remediation and VOC trends	VOC, methane, ethane, ethene, TOC, Dehalococcoides sp.
AP24-DO	East Building 3	Monitor remediation and VOC trends	VOC, methane, ethane, ethene, TOC, Dehalococcoides sp.
AP33-DO	East Building 3	Monitor remediation and VOC trends	VOC, methane, ethane, ethene, TOC, Dehalococcoides sp.
AP34-DO	East Building 3	Monitor remediation and VOC trends	VOC, methane, ethane, ethene, TOC, Dehalococcoides sp.
AP35-DO	East Building 3	Monitor remediation and VOC trends	VOC, methane, ethane, ethene, TOC, Dehalococcoides sp.
AP25-DO	East Building 3	Monitor VOC trends and confirm no adverse downgradient impacts	VOC, methane, ethane, ethene, TOC
RW-1	East Building 3	Monitor VOC trends and confirm no adverse downgradient impacts	VOC, methane, ethane, ethene, TOC
AP30R-DO	Beneath Building 3	Monitor VOC trends and confirm no adverse downgradient impacts	VOC, methane, ethane, ethene, TOC
OB25-DO	West Building 1 & 2	Monitor VOC trends and confirm no adverse downgradient impacts	VOC, methane, ethane, ethene, TOC
MW-9	Near Bldg. 9 and Unnamed Stream	Monitor VOC trends in shallow bioremediation area	VOC, methane, ethane, ethene, TOC
OB9-S	Near Bldg. 9 and Unnamed Stream	Monitor VOC trends in shallow bioremediation area	VOC, methane, ethane, ethene, TOC

**Table 2A**  
**Water Quality Sample Summary**  
**April 2014**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

<b>Well ID</b>	<b>Location</b>	<b>Comments/Notes</b>	<b>Analysis</b>
OB15-S	Near Bldg. 9 and Unnamed Stream	Monitor VOC trends in shallow bioremediation area	VOC, methane, ethane, ethene, TOC
<b>Building 5 Treatment Area</b>			
B-2	East Building 5	Monitor shallow VOC concentrations	VOC
OB35-DO	Inside Building 5	Monitor injection and VOC trends	VOC, Fe & Mn, Chloride, permanganate
AP27-DO	East Building 5	Monitor residual permanganate and VOC trends	VOC, Fe & Mn, Chloride, permanganate
OB38-DO	East Building 5	Monitor VOC trends	VOC
<b>Tozer Road North Area</b>			
CL6-BR	Walden Street	Monitor VOC trends	VOC
CL6-DO	Walden Street	Monitor VOC trends	VOC
CL9-DO	Commons Drive	Monitor Site conditions	VOC
CL9-BR ZONE 1	Commons Drive	Monitor Site conditions	VOC
CL9-BR ZONE 2	Commons Drive	Monitor Site conditions	VOC
CL9-BR ZONE 3	Commons Drive	Monitor Site conditions	VOC
BR-1 ZONE 1	Walden Street	Monitor VOC trends	VOC
BR-1 ZONE 2	Walden Street	Monitor VOC trends	VOC
BR-1 ZONE 3	Walden Street	Monitor VOC trends	VOC
BR-3 ZONE 1	Devon Street	Sentry Wells	VOC
BR-3 ZONE 2	Devon Street	Sentry Wells	VOC
BR-3 ZONE 3	Devon Street	Sentry Wells	VOC
MW-3R	16 Tozer	Monitor current VOC concentrations	VOC
MW-5R	16 Tozer	Monitor current VOC concentrations	VOC
OB17-DO	Commons Drive	Monitor Site conditions	VOC
OB17-BR	Commons Drive	Monitor Site conditions	VOC
OB23-BR	16 Tozer	Monitor Site conditions	VOC

**Table 2A**  
**Water Quality Sample Summary**  
**April 2014**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

Well ID	Location	Comments/Notes	Analysis
<b>Tozer Road South Area</b>			
MW-36	28 Tozer	Monitor Site conditions	VOC
CL3-DO	28 Tozer	Monitor VOC trends	VOC
CL3-S	28 Tozer	Monitor VOC trends	VOC
BR-5 ZONE 1	28 Tozer	Monitor Site conditions	VOC
BR-5 ZONE 2	28 Tozer	Monitor Site conditions	VOC
BR-5 ZONE 3	28 Tozer	Monitor Site conditions	VOC
CL8-BR ZONE 1	Longmeadow Rd	Sentry Wells	VOC
CL8-BR ZONE 2	Longmeadow Rd	Sentry Wells	VOC
CL8-BR ZONE 3	Longmeadow Rd	Sentry Wells	VOC
CL8-DO	Longmeadow Rd	Sentry Wells	VOC
OB4-DO	28 Tozer	Monitor Site conditions	VOC
OB5-BR	27 Tozer	Monitor Site conditions	VOC
OB5-DO	27 Tozer	Monitor Site conditions	VOC
OB6-BR	Sonning Rd	Monitor Site conditions	VOC
OB6-DO	Sonning Rd	Monitor Site conditions	VOC
OB42-S	30 Tozer Rd	Monitor shallow VOC trends	VOC
OB43-S	30 Tozer Rd	Monitor shallow VOC trends	VOC
<b>31 Tozer Rd Treatment Area</b>			
GZ-1	31 Tozer Road	Monitor Site conditions	VOC
GZ-4	31 Tozer Road	Monitor Site conditions	VOC
OB8-DO	39 Tozer Road	Monitor Site conditions	VOC
OB18-DO	31 Tozer Road	Monitor Site conditions	VOC
OB18-S	31 Tozer Road	Monitor Site conditions	VOC
OB41-S	39 Tozer Road	Monitor shallow VOC trends	VOC
AP15-S	31 Tozer Road	Monitor Site conditions	VOC
BR-7 ZONE 1	39 Tozer Road	Sentry Wells	VOC
BR-7 ZONE 2	39 Tozer Road	Sentry Wells	VOC
BR-7 ZONE 3	39 Tozer Road	Sentry Wells	VOC
MW-34	39 Tozer Road	Sentry Wells	VOC
STRHA-7A	39 Tozer Road	Monitor VOC trends in surface water	VOC
STRHA-7B	39 Tozer Road	Monitor VOC trends in surface water	VOC
Culvert Outfall	39 Tozer Road	Sentry Wells	VOC

**Table 2A**  
**Water Quality Sample Summary**  
**April 2014**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

Well ID	Location	Comments/Notes	Analysis
Longview/Hill Street Treatment Area			
BR-6 ZONE 1	Hill Street	Monitor VOC trends	VOC
BR-6 ZONE 2	Hill Street	Monitor VOC trends	VOC
BR-6 ZONE 3	Hill Street	Monitor VOC trends	VOC
APBIO-01	SCDS field	Monitor VOC trends	VOC
P-9R	Hill Street	Monitor VOC trends	VOC
P-11R	Longview Terr	Monitor VOC trends	VOC
P-19A	Hill Street	Monitor VOC trends	VOC
P-20R	SCDS field	Monitor VOC trends	VOC
OB20-S	SCDS field	Monitor VOC trends	VOC
OB20-DO	SCDS field	Monitor VOC trends	VOC
OB20-BR	SCDS field	Monitor VOC trends	VOC
OB21-DO	SCDS field	Monitor VOC trends	VOC
OB21-BR	SCDS field	Monitor VOC trends	VOC
STRM-A-SCDS	SCDS field	Monitor VOC trends in surface water	VOC
PSL10 Treatment Area			
AP-19	PSL10	Monitor residual permanganate and VOC trends	VOC, Fe & Mn, Chloride, permanganate
AP-20	PSL10	Monitor residual permanganate and VOC trends	VOC, Fe & Mn, Chloride, permanganate
AP-21	PSL10	Monitor residual permanganate and VOC trends	VOC, Fe & Mn, Chloride, permanganate
AP-22	PSL10	Monitor residual permanganate and VOC trends	VOC, Fe & Mn, Chloride, permanganate
MW2-32 Tozer	32 Tozer Rd	Monitor VOC trends	VOC
MW-33B	Base ball field	Monitor Site conditions	VOC
CL10-S	32 Tozer Rd	Monitor VOC trends	VOC
CL10-DO	32 Tozer Rd	Monitor VOC trends	VOC, Fe & Mn, Chloride, permanganate
CL10-BR	32 Tozer Rd	Monitor VOC trends	VOC
CL4-DO	30 Tozer Rd	Monitor VOC trends	VOC
CL4-BR	30 Tozer Rd	Monitor VOC trends	VOC
OB16-S	32 Tozer Rd	Monitor VOC trends	VOC
OB16-BR	32 Tozer Rd	Monitor VOC trends	VOC
OB24-S	32 Tozer Rd	Monitor VOC trends	VOC

**Notes:**

TOC = Total Organic Carbon, analysis by EPA Method 5310C  
VOCs = Volatile Organic Compounds, analysis by EPA Method 8260C  
Methane, ethane, ethene analysis by RSK-175 Method  
Dissolved Iron and Manganese, analysis by Method 6010C  
Dehalococoides sp. analysis by polymerase chain reaction (PCR)

**Table 2B**  
**Water Quality Sample Summary**  
**August 2014**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

Sample Location	Location	Rationale for Sampling	Analysis Performed
AP13-DO	East Building 3	Monitor remediation and VOC trends	VOC, methane, ethane, ethene, TOC, Nitrate/sulfate, dissolved iron and manganese, Dehalococcoides sp.
AP23-DO	East Building 3	Monitor remediation and VOC trends	VOC, methane, ethane, ethene, TOC, Nitrate/sulfate, dissolved iron and manganese, Dehalococcoides sp.
AP24-DO	East Building 3	Monitor remediation and VOC trends	VOC, methane, ethane, ethene, TOC, Nitrate/sulfate, dissolved iron and manganese, Dehalococcoides sp.
AP33-DO	East Building 3	Monitor remediation and VOC trends	VOC, methane, ethane, ethene, TOC, Nitrate/sulfate, dissolved iron and manganese, Dehalococcoides sp.
AP34-DO	East Building 3	Monitor remediation and VOC trends	VOC, methane, ethane, ethene, TOC, Nitrate/sulfate, dissolved iron and manganese, Dehalococcoides sp.
AP35-DO	East Building 3	Monitor remediation and VOC trends	VOC, methane, ethane, ethene, TOC, Nitrate/sulfate, dissolved iron and manganese, Dehalococcoides sp.
AP25-DO	East Building 3	Monitor VOC trends and confirm no adverse downgradient impacts	VOC, methane, ethane, ethene, TOC
OB25-DO	West Building 1 & 2	Monitor VOC trends and confirm no adverse downgradient impacts	VOC
RW-1	East Building 3	Monitor VOC trends and confirm no adverse downgradient impacts	VOC, methane, ethane, ethene, TOC
AP30R-DO	Beneath Building 3	Monitor VOC trends and confirm no adverse downgradient impacts	VOC
MW-9	Near Bldg. 9 and Unnamed Stream	Monitor VOC trends in shallow bioremediation area	VOC, methane, ethane, ethene, TOC
OB9-S	Near Bldg. 9 and Unnamed Stream	Monitor VOC trends in shallow bioremediation area	VOC, methane, ethane, ethene, TOC
OB15-S	Near Bldg. 9 and Unnamed Stream	Monitor VOC trends in shallow bioremediation area	VOC, methane, ethane, ethene, TOC

**Notes:**

TOC = Total Organic Carbon, analysis by EPA Method 5310C  
VOCs = Volatile Organic Compounds, analysis by EPA Method 8260C  
Methane, ethane, ethene analysis by RSK-175 Method  
nitrate/sulfate analysis via EPA Method 300  
Dissolved Iron and Manganese, analysis by Method 6010C  
Dehalococcoides sp. analysis by polymerase chain reaction (PCR)

**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)	
AP-02	4/3/2009	24	0.16	0.023	<0.0020	<0.0020	---	0.042	<0.0020	0.028	<0.0020	<0.0020	0.032	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
AP-06-BR	4/1/2009	93	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0022	<0.0010	0.024	0.059	<0.0010	
AP-12-BR	4/3/2009	84	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	0.47	24	<0.20	<0.20	9.4	<0.20	
	10/26/2009	65	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	0.59	17	<0.20	<0.20	4.6	<0.20	
	10/26/2009	76	<0.13	<0.13	<0.13	<0.13	---	<0.13	<0.13	<0.13	<0.13	<0.13	0.48	12	<0.13	<0.13	3.6	<0.13	
	4/20/2010	81	0.0011	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	0.0091	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	10/14/2010	81	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	0.0046	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/14/2011	78	<0.0020	<0.0020	<0.0020	<0.0020	0.013	<0.0020	<0.0020	0.0021	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/28/2011	74	<0.0020	<0.0020	<0.0020	<0.0020	0.01	<0.0020	<0.0020	0.0031	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/6/2012	80	0.0022J	<0.0020J	<0.0020J	<0.0020J	<0.010J	<0.0020J	<0.0020J	0.0036J	<0.0020J	<0.0020J	<0.0020J	<0.0020J	<0.0020J	<0.0020J	<0.0020J	<0.0020J	
	11/27/2012	81	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/18/2013	81	<0.0020	<0.0020	<0.0020	<0.0020	0.018	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/23/2013	81	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/10/2014	73	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.016	<0.0020	<0.0020	<0.0020	<0.0020	
	AP-12-DO	4/3/2009	50	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	0.033	<0.010	<0.010	0.94	<0.010	<0.010	<0.010	<0.010	<0.010
		10/26/2009	50	<0.0025	<0.0025	<0.0025	<0.0025	---	0.004	<0.0025	0.019	<0.0025	<0.0025	0.33	<0.0025	<0.0025	<0.0025	<0.0025	
4/20/2010		57	<0.050	<0.050	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	7.1	0.53	<0.050	<0.050	<0.050		
10/14/2010		37	<0.10	<0.10	<0.10	<0.10	---	<0.10	<0.10	<0.10	<0.10	<0.10	7.7	0.57	<0.10	<0.10	<0.10		
4/14/2011		48	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	8.8	4.6	<0.10	<0.10	0.16		
10/28/2011		44	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	10D	27D	<0.10	<0.10	2.7		
4/5/2012		56	<0.50	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<0.50	14	39	<0.50	<0.50	4.2		
11/27/2012		57	0.003	<0.0020	<0.0020	<0.0020	<0.010	0.013	<0.0020	0.083	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020		
4/18/2013		35	0.0046	<0.0020	<0.0020	<0.0020	0.023	0.042	<0.0020	0.12	<0.0020	<0.0020	0.002	<0.0020	<0.0020	<0.0020	<0.0020		
10/23/2013		57	0.0038	<0.0020	<0.0020	<0.0020	<0.010	0.017	<0.0020	0.093	<0.0020	<0.0020	0.0022	<0.0020	<0.0020	<0.0020	<0.0020		
4/10/2014		48	0.0032	<0.0020	<0.0020	<0.0020	<0.010	0.0074	<0.0020	0.11	<0.0020	<0.0020	1.9D	0.012	<0.0020	<0.0020	<0.0020		
AP-12-S		4/3/2009	26	0.011	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	0.0032	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
		4/20/2010	29	0.0088	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	0.0035	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
		4/14/2011	31	0.008	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	0.0044	<0.0020	<0.0020	0.0027	<0.0020	<0.0020	<0.0020		
	4/5/2012	26	0.0062	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	0.0032	<0.0020	<0.0020	0.016	<0.0020	<0.0020	<0.0020			
	4/12/2013	22	0.0049	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	0.0034	<0.0020	<0.0020	0.26D	0.11	<0.0020	<0.0020			
	4/10/2014	26	0.0043	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	1.9D	1.8D	<0.0040	<0.0040			
AP-13-DO	1/14/2009	47	25	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	87	170	<2.0	<2.0			
	4/2/2009	51	28	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	86	200	<2.0	<2.0			
	10/26/2009	52	29	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	84	200	<2.0	<2.0			
	4/22/2010	60	27	<4.0	<4.0	<4.0	---	<4.0	<4.0	<4.0	<4.0	<4.0	72	290	<4.0	<4.0			
	7/14/2010	60	28J	<2.0UJ	<2.0UJ	<2.0UJ	---	<2.0UJ	<2.0UJ	<2.0UJ	<2.0UJ	<2.0UJ	70J	290J	<2.0UJ	<2.0UJ			
	10/12/2010	51	28	<5.0	<5.0	<5.0	28	<5.0	<5.0	<5.0	<5.0	<5.0	75	350	<5.0	<5.0			
	1/4/2011	61	13	<2.0	<2.0	<2.0	5.5J	<2.0	<2.0	<2.0	<2.0	<2.0	40	160	<2.0	<2.0			
	4/5/2011	51.2	18	<4.0	<4.0	<4.0	12J	<4.0	<4.0	<4.0	<4.0	<4.0	46	200	<4.0	<4.0			
	7/28/2011	51	13	<2.0	<2.0	<2.0	41	<2.0	<2.0	<2.0	<2.0	<2.0	23	150	<2.0	<2.0			
	10/25/2011	60	19	<2.0	<2.0	<2.0	<10	<2.0	<2.0	<2.0	<2.0	<2.0	44	230D	<2.0	<2.0			
	1/17/2012	51	29	<2.0	<2.0	<2.0	10	<2.0	<2.0	<2.0	<2.0	<2.0	53	360D	<2.0	<2.0			
	4/3/2012	51	25	<4.0	<4.0	<4.0	<20	<4.0	<4.0	<4.0	<4.0	<4.0	59	320	<4.0	<4.0			
	5/2/2013	47.5	26	<4.0	<4.0	<4.0	62	<4.0	<4.0	<4.0	<4.0	<4.0	60	330	<4.0	<4.0			
	1/20/2014	41	26	<4.0	<4.0	<4.0	20	<4.0	<4.0	<4.0	<4.0	<4.0	87	350	<4.0	<4.0			
	4/8/2014	51	25	<4.0	<4.0	<4.0	24	<4.0	<4.0	<4.0	<4.0	<4.0	85	340	<4.0	<4.0			
	8/6/2014	49	26	<4.0	<4.0	<4.0	28	<4.0	<4.0	<4.0	<4.0	<4.0	92	320	<4.0	<4.0			
	AP-13-S	4/3/2009	16	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0019	0.0021	<0.0010	<0.0010		
4/20/2010		17	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0037	0.0034	<0.0010	<0.0010			
4/4/2011		16.1	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020				
10/26/2011		16	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0036	0.002	<0.0020				
1/7/2012		16	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020					
4/5/2012		16	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020					



Table 3  
Water Quality Data - VOC Results  
2009 to Present  
Former Varian Facility Site  
150 Sohier Road, Beverly, Massachusetts

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)	
AP-22	4/6/2009	13	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	0.001	0.0023	<0.0010	<0.0010	<0.0010	<0.0010	0.001	<0.0010	<0.0010	<0.0010	
	10/27/2009	17	<0.0010	0.015	<0.0010	<0.0010	---	<0.0010	0.0031	0.0011	<0.0010	<0.0010	<0.0010	<0.0010	0.0099	<0.0010	<0.0010	<0.0010	
	4/21/2010	19	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	0.0035	<0.0010	<0.0010	<0.0010	0.0013	<0.0010	0.0019	<0.0010	<0.0010	<0.0010	
	10/14/2010	19	<0.0020	0.017	<0.0020	<0.0020	---	<0.0020	0.0055	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/14/2011	19	<0.0020	<0.0020	<0.0020	<0.0020	0.014	<0.0020	0.0063	<0.0020	<0.0020	<0.0020	<0.0020	1.4D	0.15	<0.0020	<0.0020	0.33D	<0.0020
	10/27/2011	19	<0.0020	<0.0020	<0.0020	<0.0020	0.015	<0.0020	<0.0020	0.0028	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/5/2012	18	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	0.0036	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	11/13/2012	19	<0.0020	0.009	<0.0020	<0.0020	<0.010	<0.0020	0.0052	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/17/2013	20	<0.0020	<0.0020	<0.0020	<0.0020	0.012	<0.0020	0.0047	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	10/24/2013	20.8	<0.0020	0.0062	<0.0020	<0.0020	<0.010	<0.0020	0.0053	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/11/2014	20	<0.0020	0.0024	<0.0020	<0.0020	<0.010	<0.0020	0.005	<0.0020	<0.0020	<0.0020	<0.0020	0.025	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	AP-23-DO	1/14/2009	51	<1.0	<1.0	<1.0	<1.0	---	<1.0	<1.0	<1.0	<1.0	<1.0	35	140	<1.0	<1.0	8.2	<1.0
		4/2/2009	47	<2.0	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	34	210	<2.0	<2.0	7	<2.0
		10/26/2009	48	<2.0	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	41	210	<2.0	4.2	29	<2.0
1/28/2010		51	<1.0	<1.0	<1.0	<1.0	---	<1.0	<1.0	1	<1.0	<1.0	32	150	<1.0	4.8	30	<1.0	
4/22/2010		51	<2.0	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	40	270	<2.0	<2.0	7.1	<2.0	
7/14/2010		14	<2.0UJ	<2.0UJ	<2.0UJ	<2.0UJ	---	<2.0UJ	<2.0UJ	<2.0UJ	<2.0UJ	<2.0UJ	<2.0UJ	50J	330J	<2.0UJ	<2.0UJ	12J	<2.0UJ
10/12/2010		47	<4.0	<4.0	<4.0	<4.0	30	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	46	270	<4.0	<4.0	17	<4.0
1/4/2011		51	<1.0	<1.0	<1.0	<1.0	2.5J	<1.0	<1.0	<1.0	<1.0	<1.0	11	86	<1.0	5.2	20	<1.0	
4/8/2011		47.4	<4.0	<4.0	<4.0	<4.0	14J	<4.0	<4.0	<4.0	<4.0	<4.0	20	230	<4.0	<4.0	6.2	<4.0	
7/28/2011		47	<2.0	<2.0	<2.0	<2.0	2.9J	<2.0	<2.0	2	<2.0	<2.0	20	140	<2.0	2.7	7.4	<2.0	
10/25/2011		51	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<2.0	<2.0	<2.0	<2.0	23	240D	<2.0	3.3	9.6	<2.0	
1/17/2012		47.5	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<2.0	<2.0	<2.0	<2.0	41	490D	<2.0	<2.0	4.7	<2.0	
4/3/2012		47	<4.0	<4.0	<4.0	<4.0	<20	<4.0	<4.0	<4.0	<4.0	<4.0	21	350	<4.0	<4.0	<4.0	<4.0	
5/2/2013		47.4	<4.0	<4.0	<4.0	<4.0	79	<4.0	<4.0	<4.0	<4.0UJ	<4.0	47	510D	<4.0	<4.0	<4.0	<4.0	
1/20/2014		47.6	<4.0	<4.0	<4.0	<4.0	23	<4.0	<4.0	<4.0	<4.0	<4.0	40	390	<4.0	4.7	41	<4.0	
4/8/2014		48	<4.0	<4.0	<4.0	<4.0	21	<4.0	<4.0	<4.0	<4.0	<4.0	41	360	<4.0	5.2	32	<4.0	
8/6/2014		46	<4.0	<4.0	<4.0	<4.0	76	<4.0	<4.0	<4.0	<4.0	<4.0	61	440D	<4.0	<4.0	<4.0	<4.0	
AP-24-DO		1/14/2009	52	22	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	41	210	<2.0	<2.0	10	<2.0
		4/2/2009	47	36	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	54	270	<2.0	<2.0	19	<2.0
	10/26/2009	48	62	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	32	270	<2.0	4.2	44	<2.0	
	1/28/2010	52	41	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	39	240	<2.0	6	14	<2.0	
	4/22/2010	52	52	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	21	270	<2.0	3.7	14	<2.0	
	7/14/2010	15.5	38J	<2.0UJ	<2.0UJ	<2.0UJ	---	<2.0UJ	<2.0UJ	<2.0UJ	<2.0UJ	<2.0UJ	26J	260J	<2.0UJ	15J	65J	<2.0UJ	
	10/12/2010	47	27	<4.0	<4.0	<4.0	<20	<4.0	<4.0	<4.0	<4.0	<4.0	13	190	<4.0	27	41	<4.0	
	1/4/2011	52	9.5	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	19	9.8D	<1.0	30	75	<1.0	
	4/5/2011	47.3	43	<4.0	<4.0	<4.0	<20	<4.0	<4.0	<4.0	<4.0	<4.0	24	300	<4.0	10	28	<4.0	
	7/28/2011	47	1.2	<0.20	<0.20	<0.20	0.10J	<0.20	<0.20	0.22	<0.20	<0.20	1.7	16	<0.20	0.94	1.7	<0.20	
	10/25/2011	52	35D	<0.20	1.2	<0.20	<1.0	<0.20	<0.20	0.74	<0.20	<0.20	31D	350D	<0.20	6.9	12	<0.20	
	4/3/2012	47	27	<4.0	<4.0	<4.0	<20	<4.0	<4.0	<4.0	<4.0	<4.0	26	240	<4.0	26	80	<4.0	
	1/20/2014	51.1	21	<4.0	<4.0	<4.0	<20	<4.0	<4.0	<4.0	<4.0	<4.0	27	280	<4.0	4.2	45	<4.0	
	4/8/2014	47	30	<4.0	<4.0	<4.0	<20	<4.0	<4.0	<4.0	<4.0	<4.0	31	340	<4.0	7.9	64	<4.0	
	8/6/2014	46	120	<4.0	<4.0	<4.0	<20	<4.0	<4.0	<4.0	<4.0	<4.0	39	560D	<4.0	<4.0	12	<4.0	
	AP-25-DO	1/14/2009	51	0.021	0.006	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0059	<0.0050	0.56	0.62	<0.0050
4/2/2009		47	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	0.24	1.6	<0.20	2.2	17	<0.20	
10/26/2009		48	0.029	0.025	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0056	<0.0050	<0.0050	0.48	0.74	0.0073	
1/28/2010		51	0.005	0.0054	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0025	0.01	<0.0010	0.047	0.13	<0.0010	
7/14/2010		51	0.14J	<0.10UJ	<0.10UJ	<0.10UJ	---	<0.10UJ	<0.10UJ	<0.10UJ	<0.10UJ	<0.10UJ	<0.10UJ	<0.10UJ	<0.10UJ	2.3J	12J	<0.10UJ	
10/12/2010		47	0.054	0.052	<0.040	<0.040	---	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.8	3.7	<0.040	
1/4/2011		51	0.029	0.065	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.8	0.66	<0.010	
4/5/2011		46.7	0.011	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	0.062	<0.010	0.13	0.45	<0.010	
7/28/2011		46	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	2.6	5.4	<0.10	
10/25/2011		51	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.6	2.7	<0.040	



**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)	
AP-25-DO (cont.)	1/17/2012	46	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.049	<0.040	0.73	2.1	<0.040	
	4/3/2012	47	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.1	7.5D	<0.040	
	10/22/2013	46.75	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	3.9	9.1	<0.10	
	1/20/2014	46.8	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1.5	6.1	<0.10	
	4/8/2014	46	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.19	<0.040	0.12	2.4	<0.040	
	8/6/2014	44	0.11	<0.040	0.05	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	3.4	11D	<0.040	
AP-26-DO	4/3/2009	61	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	8.7	16	<0.20	<0.20	0.42	<0.20	
	10/26/2009	62	<0.10	<0.10	<0.10	<0.10	---	<0.10	<0.10	<0.10	<0.10	<0.10	4.4	7.2	<0.10	<0.10	<0.10	<0.10	
	4/22/2010	64	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	13	25	<0.20	<0.20	<0.20	<0.20	
	7/14/2010	64	<0.20UJ	<0.20UJ	<0.20UJ	<0.20UJ	---	<0.20UJ	<0.20UJ	<0.20UJ	<0.20UJ	<0.20UJ	9.2J	19J	<0.20UJ	<0.20UJ	<0.20UJ	<0.20UJ	
	10/13/2010	61	<0.40	<0.40	<0.40	<0.40	---	<0.40	<0.40	<0.40	<0.40	<0.40	8.7	21	<0.40	<0.40	<0.40	<0.40	
	4/5/2011	61.1	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	13	27D	<0.20	<0.20	<0.20	<0.20	
	10/26/2011	64	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	11	25D	<0.20	<0.20	<0.20	<0.20	
	4/5/2012	61	<0.40	<0.40	<0.40	<0.40	<2.0	<0.40	<0.40	<0.40	<0.40	<0.40	11	27	<0.40	<0.40	<0.40	<0.40	
	11/26/2012	64	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.35	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	
	4/15/2013	67	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	7.4J	17	<0.20	<0.20	<0.20	<0.20	
	10/23/2013	64	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	0.041	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/16/2014	60	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	0.01	<0.0020	<0.0020	0.44D	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	AP-27-DO	4/9/2009	60	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.003	0.019	<0.0010	<0.0010	0.0023	<0.0010
10/28/2009		57	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0017	0.022	<0.0010	<0.0010	0.001	<0.0010	
4/21/2010		61	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0036	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
10/14/2010		57.5	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.009	1.2D	<0.0020	<0.0020	0.01	0.0049	
4/7/2011		57.2	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.010UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	0.0027J	0.027J	<0.0020UJ	<0.0020UJ	0.010J	<0.0020UJ	
10/26/2011		61	<0.0020	<0.0020	0.0027	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.17	12D	<0.0020	<0.0020	0.031	0.08	0.037
4/6/2012		57	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	13	<0.20	<0.20	<0.20	<0.20	<0.20	
11/27/2012		61	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/16/2013		59	<0.0020	<0.0020	<0.0020	<0.0020	0.016	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.023	0.0039	<0.0020	<0.0020	<0.0020	<0.0020	
10/23/2013		59	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.33D	5.5D	<0.0020	<0.0020	0.014	<0.0020	
4/11/2014		56	<0.0020	<0.0020	0.003	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.24D	11D	<0.0020	0.0023	0.072	0.023	
AP-29-DO		4/2/2009	42	<0.010	<0.010	0.011	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.36	1.2	<0.010	<0.010	0.31	<0.010
AP-30-DO		2/12/2010	NA	<1.2	<1.6	<1.5	<1.1	<4.0	<0.90	<1.1	<0.45	<0.88	<2.4	82	330	---	<1.3	<1.2	<1.2
	5/24/2010	NA	<2.5	<2.5	<2.5	<2.5	---	<2.5	<2.5	<2.5	<2.5	<2.5	59	680D	<2.5	<2.5	<2.5	<2.5	
AP-30R-DO	4/7/2011	67	2.4J	<0.050UJ	<0.050UJ	<0.050UJ	<0.25UJ	6.4DJ	<0.050UJ	5.5DJ	<0.050UJ	<0.050UJ	0.47J	0.082J	<0.050UJ	<0.050UJ	<0.050UJ	<0.050UJ	
	11/7/2011	27	0.085	<0.0020	<0.0020	<0.0020	0.013	0.19D	<0.0020	0.18	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/17/2012	88	0.22	<0.010	<0.010	<0.010	<0.050	0.7	<0.010	0.27	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
	11/27/2012	28	0.95	0.017	<0.010	<0.010	<0.050	1.9D	<0.010	3.5D	<0.010	<0.010	0.073	<0.010	<0.010	<0.010	<0.010	<0.010	
	4/18/2013	50	0.72	<0.040	<0.040	<0.040	<0.20	1.1	<0.040	2.3	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	
	11/8/2013	35	0.7	<0.040	<0.040	<0.040	<0.20	1.1	<0.040	2.6	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	
	1/21/2014	30	0.67	<0.040	<0.040	<0.040	<0.20	0.56	<0.040	2.1	<0.040	<0.040	3.9D	17D	<0.040	<0.040	0.52	<0.040	
	4/8/2014	30	0.53	<0.10	<0.10	<0.10	<0.50	0.47	<0.10	1.4	<0.10	<0.10	3.1	4.8	<0.10	<0.10	0.25	<0.10	
	8/6/2014	50	0.27	<0.10	<0.10	<0.10	<0.50	0.23	<0.10	1.2	<0.10	<0.10	1.1	8.3	<0.10	<0.10	0.71	<0.10	
	AP-31-DO	2/11/2010	NA	<1.2	<1.6	<1.5	<1.1	<4.0	<0.90	<1.1	<0.45	<0.88	<2.4	71	940D	---	<1.3	<1.2	<1.2
10/18/2010	89	1.3D	0.011	<0.0040	<0.0040	---	0.97D	<0.0040	1.6D	<0.0040	0.0062	0.053	0.015	0.0049	<0.0040	<0.0040	<0.0040		
4/6/2011	30	1.6J	0.034J	<0.0020UJ	<0.0020UJ	0.062J	0.68DJ	0.0028J	2.1DJ	<0.0020UJ	0.0070J	0.082J	0.0099J	0.0090J	<0.0020UJ	<0.0020UJ	<0.0020UJ		
11/7/2011	38	1.8	0.041	<0.020	<0.020	<0.10	0.52	<0.020	1.9	<0.020	<0.020	0.043	<0.020	<0.020	<0.020	<0.020	<0.020		
4/17/2012	88	1.3	0.045	<0.040	<0.040	<0.20	0.27	<0.040	1.7	<0.040	<0.040	1.9	43D	<0.040	<0.040	<0.040	<0.040		
11/27/2012	28	1.4	<0.020	<0.020	<0.020	<0.10	0.49	<0.020	0.66	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020		
4/18/2013	50	1.2	<0.020	0.022	<0.020	<0.10	0.28	<0.020	2	<0.020	<0.020	2.1D	4.4D	<0.020	<0.020	0.046	<0.020		
10/24/2013	35	0.98	<0.020	<0.020	<0.020	<0.10	0.25	<0.020	0.91	<0.020	<0.020	0.62	<0.020	<0.020	<0.020	<0.020	<0.020		
4/16/2014	30	0.6	<0.020	<0.020	<0.020	<0.10	0.15	<0.020	0.8	<0.020	<0.020	7.4D	4.6D	<0.020	<0.020	<0.020	<0.020		
AP-32-DO	2/11/2010	NA	<1.2	<1.6	<1.5	<1.1	<4.0	<0.90	<1.1	<0.45	<0.88	<2.4	91	950D	---	<1.3	<1.2	<1.2	
	10/18/2010	89	2.3	<0.10	<0.10	<0.10	---	1.2	<0.10	6.8	<0.10	<0.10	0.2	<0.10	<0.10	<0.10	<0.10	<0.10	
	4/7/2011	60	2.1J	<0.10UJ	<0.10UJ	<0.10UJ	<0.50UJ	0.87J	<0.10UJ	5.7J	<0.10UJ	<0.							

**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2- DCE (mg/l)	trans-1,2- DCE (mg/l)	
AP-32-DO (cont.)	11/7/2011	34	1.8	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	3.3	<1.0	<1.0	41	81D	<1.0	<1.0	<1.0	<1.0	
	4/17/2012	88	1.4	<0.10	<0.10	<0.10	<0.50	0.55	<0.10	2.4	<0.10	<0.10	62D	140D	<0.10	<0.10	<0.10	<0.10	
	11/27/2012	25	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<2.0	3	<2.0	<2.0	31	170	<2.0	<2.0	<2.0	<2.0	
	4/18/2013	50	2	<2.0	<2.0	<2.0	<10	<2.0	<2.0	3.5	<2.0	<2.0	56	370D	<2.0	<2.0	<2.0	<2.0	
	10/24/2013	35	1.8	<0.040	<0.040	<0.040	<0.20	0.83	<0.040	2.6	<0.040	<0.040	0.27	0.049	<0.040	<0.040	<0.040	<0.040	
	4/16/2014	30	1.2	<0.020	<0.020	<0.020	<0.10	0.45	<0.020	1.6	<0.020	<0.020	1.6	0.036	<0.020	<0.020	<0.020	<0.020	
AP-33-DO	9/11/2013	NA	19	<0.50	0.85	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<0.50	24	26	<0.50	0.74	4.6	<0.50	
	1/20/2014	37.5	75D	6.2	0.71	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<0.50	99D	400D	<0.50	6	150D	<0.50	
	4/8/2014	36	60	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	69	290	<5.0	10	290	<5.0	
AP-34-DO	8/6/2014	35	82	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	<5.0	<5.0	66	330	<5.0	5.6	170	<5.0	
	9/11/2013	NA	<0.50	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<0.50	35	25	<0.50	<0.50	0.73	<0.50	
	1/20/2014	36	7	1.1	0.77	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	<0.50	1.1	46	<0.50	
AP-35-DO	4/8/2014	36	8.1	1	0.92	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.64	<0.50	2.1	55D	<0.50	
	8/6/2014	33	1.1	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	77	<1.0	
	9/12/2013	NA	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<2.0	<2.0	<2.0	<2.0	77	98	<2.0	2.1	19	<2.0	
APBIO-01	1/20/2014	35.8	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	6.3	<2.0	<2.0	82	<2.0	
	4/8/2014	35	<2.0	<2.0	<2.0	<2.0	<10	<2.0	<2.0	<2.0	<2.0	<2.0	2.1	25	<2.0	<2.0	130	<2.0	
	8/6/2014	33	0.81	<0.40	<0.40	<0.40	<2.0	<0.40	<0.40	0.59	<0.40	<0.40	1.8	46D	<0.40	0.53	230D	1.8	
B-2	4/6/2009	78	<0.0020	0.007	0.003	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.027	<0.0020	0.092	0.29	0.0022	
	4/23/2010	78	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.045	<0.010	0.12	0.77	<0.010	
	4/6/2011	77	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.023	<0.010	0.16	0.8	<0.010	
	4/6/2012	77	<0.0050	0.0084	0.012	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.024	0.076	<0.0050	0.065	1.1D	<0.0050
	4/12/2013	77	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.021	<0.010	0.22	0.54	<0.010	
	4/21/2014	77	<0.010	<0.010	0.015	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.14	<0.010	0.15	0.87	<0.010	
B-3	4/9/2009	11	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.019	<0.0010	<0.0010	0.022	<0.0010	
	10/26/2009	11	<0.0025	<0.0025	0.0026	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.091	<0.0025	<0.0025	0.32	0.0049	
	4/21/2010	12	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.29	<0.0050	0.022	0.46	0.0056	
	10/14/2010	12	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	0.03	1.2D	0.016	
	4/6/2011	15.7	<0.0040UJ	0.0044J	<0.0040UJ	<0.0040UJ	<0.020UJ	<0.0040UJ	<0.0040UJ	<0.0040UJ	<0.0040UJ	<0.0040UJ	<0.0040UJ	0.092J	<0.0040UJ	<0.0040UJ	0.23J	0.0070J	
	10/27/2011	11.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.017	<0.0020	0.19	0.18	0.0053	
	4/6/2012	11.5	<0.0020	<0.0020	0.0025	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0069	0.27D	<0.0020	<0.0020	0.26D	0.0038
	11/27/2012	12	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0055	0.22	<0.0040	<0.0040	0.32	<0.0040
	4/16/2013	12	<0.0040	<0.0040	0.0052	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.015	0.56D	<0.0040	<0.0040	0.53D	0.0081
	10/23/2013	12	<0.0020	0.0022	0.0042	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.011	0.40D	<0.0020	<0.0020	0.49D	0.0077
	4/11/2014	11	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.074	<0.0050	0.015	0.33	<0.0050	
	4/3/2009	12.5	0.09	0.0017	0.0023	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.02	0.015	<0.0010	<0.0010	0.0011	<0.0010
	10/26/2009	12.5	0.044	0.0016	0.0014	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.013	0.0095	<0.0010	<0.0010	<0.0010	<0.0010
4/21/2010	14	0.056	0.001	0.0014	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0062	0.01	<0.0010	<0.0010	<0.0010	<0.0010	
10/12/2010	12.5	0.049	0.0021	0.0028	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.016	0.011	<0.0020	<0.0020	<0.0020	<0.0020	
4/4/2011	12.5	0.042	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.015	0.0068	<0.0020	<0.0020UJ	<0.0020	<0.0020	
10/26/2011	12	0.069	<0.0020	0.0028	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.016	0.013	<0.0020	<0.0020	<0.0020	<0.0020	
4/3/2012	12.5	0.065	<0.0020	0.004	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.023	0.011	<0.0020	<0.0020	<0.0020	<0.0020	
11/13/2012	14	0.043	<0.0020	0.0027	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.018	0.0088	<0.0020	<0.0020	<0.0020	<0.0020	
4/15/2013	12.5	0.036	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.014J	0.0043	<0.0020	<0.0020	<0.0020	<0.0020	
4/10/2014	12	0.034	<0.0020	0.0021	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.016	0.0061	<0.0020	<0.0020	<0.0020	<0.0020	
BR-1_ZONE1	4/6/2009	205	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0016	0.0016	<0.0010	
	10/29/2009	205	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.028	0.067	<0.0010	0.083	0.20D	0.009
	4/22/2010	205	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	10/18/2010	205	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.013	0.042	<0.0020	0.036	0.11	0.0033	
	4/14/2011	205	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.056	<0.020	0.43	1.5	0.027	
	10/24/2011	205	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.01	0.035	<0.0020	0.041	0.19	0.0031
	4/2/2012	205	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/16/2013	205	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/21/2014	205	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020



**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)	
BR-6_ZONE1	4/7/2009	94	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.058	0.22	<0.0025	
	11/2/2009	94	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.047	0.22	<0.0025	
	4/28/2010	94	<0.0010	0.002	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0084	0.0075	0.0014	
	10/18/2010	94	<0.0020	0.0021	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.015	0.17	<0.0020	
	4/19/2011	94	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.024	0.260	<0.0050	
	10/27/2011	94	<0.0020	0.0023	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.024	0.200	<0.0020	
	4/2/2012	94	<0.0020	<0.0020	<0.0020	<0.0020	0.012	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0035	<0.0020
	4/16/2013	94	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0055	0.012	<0.0020
	10/24/2013	94	<0.0020	<0.0020	<0.0020	<0.0020	0.01	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020UJ	<0.0020	<0.0020	<0.0020
	4/11/2014	94	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.004	0.012	<0.0020	
BR-6_ZONE2	4/7/2009	62	<0.0025	0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.013	0.31	<0.0025	
	11/2/2009	62	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.04	0.21	<0.0025	
	4/28/2010	62	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.014	0.3	<0.0025	
	10/18/2010	62	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.046	0.31	<0.0050	
	4/19/2011	62	<0.013	<0.013	<0.013	<0.013	<0.050	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	0.023	0.37	<0.013	
	10/27/2011	62	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.021	0.4	<0.0050	
	4/2/2012	62	<0.0020	0.0022	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.11	0.190	<0.0020	
	4/16/2013	62	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.024	0.34	<0.0040	
	10/24/2013	62	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.019	0.14	<0.0020	
	4/11/2014	62	<0.0020	0.0031	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.023	0.350	<0.0020	
BR-6_ZONE3	4/7/2009	42	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.06	0.15	0.0026	
	11/2/2009	42	<0.0010	0.001	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0024	<0.0010	
	4/28/2010	42	<0.0010	0.002	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.038	0.04	0.0012	
	10/18/2010	42	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.035	0.0057	<0.0020	
	4/19/2011	42	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0076	<0.0050	
	10/27/2011	42	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.017	0.061	<0.0020	
	4/2/2012	42	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/16/2013	42	<0.0020	<0.0020	<0.0020	<0.0020	0.018	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/24/2013	42	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020UJ	<0.0020	<0.0020	<0.0020	
	4/11/2014	42	<0.0020	0.0021	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.078	0.17	<0.0020	
BR-7_ZONE1	4/7/2009	152	<0.0010	0.0069	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.11	0.085	<0.0010	
	4/28/2010	152	<0.0020	0.0072	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.18	0.13	<0.0020	
	4/14/2011	152	<0.0020	0.0034	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.051	0.012	<0.0020	
	4/4/2012	152	<0.0020	0.0069	<0.0020	<0.0020	0.018	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.12	0.0048	<0.0020	
	4/16/2013	152	<0.0020	0.0027	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.007	0.0037	<0.0020	
	4/21/2014	152	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
BR-7_ZONE2	4/7/2009	112	<0.0050	0.0055	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.048	0.47	<0.0050	
	4/28/2010	112	<0.0050	0.0054	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.039	0.5	<0.0050	
	4/14/2011	112	<0.0040	0.0064	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.15	0.2	<0.0040	
	4/4/2012	112	<0.0040	0.0069	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.2	0.0093	<0.0040	
	4/16/2013	112	<0.0020	0.0085	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.16	0.0068	<0.0020	
4/21/2014	112	<0.0020	0.0038	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0097	0.0021	<0.0020		
BR-7_ZONE3	4/7/2009	69	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.029	0.84	<0.010	
	4/28/2010	69	<0.010	<0.010	0.012	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.021	1	<0.010	
	4/14/2011	69	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.036	1.1	<0.020	
	4/4/2012	69	<0.010	<0.010	0.01	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.069	0.74	<0.010	
	4/16/2013	69	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.024	<0.020	<0.020	
	4/21/2014	69	<0.0020	0.0065	0.0037	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.02	0.0150	0.0038	
BW-01	1/13/2009	14	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0019	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/2/2009	12	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0016	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	7/14/2009	14	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	10/27/2009	12	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0036	0.002	<0.0010	<0.0010	<0.0010	<0.0010	
	1/28/2010	12	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/22/2010	14	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050</											

Table 3  
Water Quality Data - VOC Results  
2009 to Present  
Former Varian Facility Site  
150 Sohier Road, Beverly, Massachusetts

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)		
BW-02	1/13/2009	14	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
	4/2/2009	13	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
	7/14/2009	14	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0037	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
	10/27/2009	13	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0028	0.0014	<0.0010	<0.0010	<0.0010	<0.0010		
	1/28/2010	13	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0017	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/22/2010	14	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.12	0.4	<0.0050	<0.0050	
BW-03	1/13/2009	15.5	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0017	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
	4/2/2009	13	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
	7/14/2009	15.5	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0026	<0.0010	<0.0010	<0.0010	0.0011	<0.0010		
	10/27/2009	13	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.003	0.0018	<0.0010	0.0037	0.0029	<0.0010		
	1/28/2010	13	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/22/2010	15.5	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	<0.0010	0.04	0.11	<0.0010	<0.0010	
BW-04	8/21/2012	15.5	<0.0020	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020	0.0087	0.0026	<0.0020	<0.0020	<0.0020	<0.0020	0.0064	0.0039	<0.0020	<0.0020	
	1/13/2009	13	0.0011	0.0028	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.095	0.065	<0.0010	<0.0010	
	4/2/2009	12	0.0054	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.54	0.48	<0.0050	<0.0050	
	7/14/2009	13	0.0051	0.005	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.59	0.15	<0.0050	<0.0050	
	10/27/2009	12	0.05	0.035	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.3	0.02	<0.0025	<0.0025	
	1/28/2010	12	<0.0010	0.0019	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	<0.0010	<0.0010	0.012	0.016	<0.0010	<0.0010
	4/22/2010	13	0.022	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.74	0.51	<0.010	<0.010	
	7/14/2010	13	<0.0010UJ	0.0016J	<0.0010UJ	<0.0010UJ	---	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	0.0014J	<0.0010UJ	0.013J	0.0075J	<0.0010UJ	<0.0010UJ
	10/12/2010	13	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0027	0.0044	<0.0020	<0.0020
	1/4/2011	13	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	0.0024	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.016	0.0081	<0.0020	<0.0020
	4/5/2011	12.5	<0.0020	0.002	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.16	0.069	<0.0020	<0.0020
	7/28/2011	13	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.21	0.066	<0.0040	<0.0040
	10/25/2011	12	0.095	0.032	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0023	<0.0020	<0.0020	0.098	0.0031	<0.0020	<0.0020
	1/18/2012	12.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/3/2012	12	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	8/21/2012	12.3	<0.0020	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.40D	0.16D	<0.0020	<0.0020
	11/28/2012	13	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.052	0.01	<0.0020	<0.0020
	2/6/2013	12.35	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0084	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/11/2013	13	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	BW-05	1/13/2009	15	0.16	0.099	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	5.3	2.8	<0.050	<0.050
		4/2/2009	9	0.019	0.018	<0.0010	<0.0010	---	<0.0010	<0.0010	0.004	<0.0010	<0.0010	0.0013	<0.0010	0.0045	0.021	0.015	<0.0010	<0.0010
		7/14/2009	15	0.018	0.011	<0.0010	0.0011	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0064	0.002	0.002	0.0013	<0.0010	<0.0010	<0.0010
		10/27/2009	9	0.0043	0.17	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0021	0.0025	<0.0020	<0.0020	<0.0020
		1/28/2010	9	<0.0010	0.02	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	<0.0010	0.0047	0.074	0.011	<0.0010	<0.0010
4/22/2010		15	0.33	0.02	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.014	<0.010	<0.010	0.73	0.67	<0.010	<0.010	
7/14/2010		15	<0.0010UJ	0.0059J	<0.0010UJ	0.0023J	---	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	0.0010J	0.0050J	<0.0010UJ	0.052J	0.066J	<0.0010UJ	<0.0010UJ	
10/12/2010		10	<0.0020	0.0041	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
1/4/2011		15	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	0.0047	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
4/5/2011		9.5	0.022	0.013	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.86	0.22	<0.010	<0.010	
7/28/2011		9	<0.0020	0.0049	<0.0020	<0.0020	0.015	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
10/25/2011		9	1.5D	4.3D	0.02	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0047	<0.0020	0.003	<0.0020	<0.0020	<0.0020	0.97D	0.064	<0.0020	<0.0020
1/18/2012		9.5	<0.0020	0.021	<0.0020	<0.0020	0.018	<0.0020	<0.0020	<0.0020	0.024	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
4/3/2012		9	<0.0020	0.0021	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.005	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
8/21/2012		9.4	0.0022	<0.0020	<0.0020	<0.0020	0.014	<0.0020	<0.0020	0.019	<0.0020	<0.0020	0.0027	<0.0020	<0.0020	<0.0020	0.02	0.014	<0.0020	<0.0020
11/28/2012		15	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.006	<0.0020	<0.0020
2/6/2013	9.4	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0025	<0.0020	<0.0020	
4/11/2013	9	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0044	<0.0020	<0.0020	
10/22/2013	15	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/10/2014	9	<0.0020																		

**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2- DCE (mg/l)	trans-1,2- DCE (mg/l)	
BW-06 (cont.)	1/18/2012	13	0.0027	0.14	<0.0020	0.0028	<0.010	<0.0020	<0.0020	<0.0020	1.1D	<0.0020	<0.0020	<0.0020	<0.0020	0.002	<0.0020	<0.0020	
	4/3/2012	13	<0.0050	0.012	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	0.38	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
	8/21/2012	13.3	<0.0020	<0.0020	<0.0020	<0.0020	0.013	<0.0020	<0.0020	0.0065	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0045	0.0027	<0.0020	
	11/28/2012	15	<0.0020	0.0023	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0033	<0.0020	<0.0020	<0.0020	<0.0020	0.011	0.007	<0.0020	
	2/6/2013	13.1	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0021	0.002	<0.0020	
	4/11/2013	13	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0044	0.0023	<0.0020	
	10/22/2013	14	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0035	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0025	<0.0020	
	4/10/2014	13	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	BW-08	1/13/2009	15	0.39	0.42	<0.010	<0.010	---	<0.010	<0.010	<0.010	0.096	<0.010	<0.010	<0.010	<0.010	0.78	0.072	<0.010
		4/2/2009	13	<0.0020	0.02	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	0.25	<0.0020	<0.0020	<0.0020	0.005	<0.0020	<0.0020	<0.0020
7/14/2009		15	0.023	0.031	<0.0010	0.0026	---	<0.0010	<0.0010	<0.0010	0.131	<0.0010	<0.0010	<0.0010	0.0088	<0.0010	<0.0010	<0.0010	
10/27/2009		13	<0.010	0.046	<0.010	<0.010	---	<0.010	<0.010	<0.010	1	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
1/28/2010		13	0.0053	0.05	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	0.41	<0.0050	<0.0050	<0.0050	<0.0050	0.0058	<0.0050	<0.0050	
4/22/2010		15	2.4	0.12	0.13	<0.020	---	<0.020	<0.020	<0.020	0.047	<0.020	0.075	0.098	<0.020	1.8	2.2	<0.020	
7/14/2010		15	0.59J	0.56J	<0.0050UJ	<0.0050UJ	---	<0.0050UJ	<0.0050UJ	<0.0050UJ	0.090J	<0.0050UJ	<0.0050UJ	<0.0050UJ	<0.0050UJ	0.045J	0.024J	<0.0050UJ	
10/12/2010		14	<0.0020	0.013	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	0.045	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
1/5/2011		15	<0.0020	0.031	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	0.051	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/5/2011		13.7	0.09	0.037	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	0.053	<0.010	<0.010	<0.010	<0.010	0.72	0.19	<0.010	
7/28/2011		13	<0.0020	0.13	<0.0020	0.0031	0.014	<0.0020	<0.0020	<0.0020	0.14	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0023	
10/25/2011		13.5	0.12	0.73D	<0.0031	<0.020	<0.010	<0.0020	<0.0020	<0.0020	0.24D	<0.0020	0.0096	0.017	<0.0020	0.30D	0.012	<0.0020	
1/18/2012		13.5	<0.0020	3.5D	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.95D	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/3/2012		13	0.018	0.077	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	2.0D	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
8/21/2012		14	<0.0020	<0.0020	<0.0020	<0.0020	0.013	<0.0020	<0.0020	0.0054	0.018	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
11/28/2012		15	<0.0020	<0.0020	<0.0020	<0.0020	0.016	<0.0020	<0.0020	<0.0020	0.044	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.003	<0.0020	
2/6/2013		13.6	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.021	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/11/2013		17.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.015	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
10/22/2013		14	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0033	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/10/2014		13	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
BW-09		1/13/2009	15	0.17	0.22	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	0.25	<0.0025	<0.0025	<0.0025	<0.0025	0.16	0.019	<0.0025
		4/2/2009	11	0.0022	0.015	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	0.19	<0.0020	<0.0020	<0.0020	<0.0020	0.0024	<0.0020	<0.0020
		7/14/2009	15	0.0051	0.017	<0.0010	0.0024	---	<0.0010	<0.0010	<0.0010	0.141	<0.0010	<0.0010	<0.0010	0.0087	<0.0010	<0.0010	0.0013
		10/27/2009	11	<0.0050	0.017	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	0.62	<0.0050	<0.0050	<0.0050	0.0072	<0.0050	<0.0050	<0.0050
		1/28/2010	11	0.0062	0.07	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	0.46	<0.0050	<0.0050	<0.0050	<0.0050	0.018	<0.0050	<0.0050
		4/22/2010	15	0.33	0.16	0.026	<0.010	---	<0.010	<0.010	<0.010	0.059	<0.010	<0.010	0.022	<0.010	1.2	1	<0.010
		7/28/2011	12.5	<0.0040	0.13	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	0.22	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
	10/25/2011	12	0.0094	0.062	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.092	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	1/18/2012	12	0.012	1.1D	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	3.6D	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	
	4/3/2012	12	0.0067	0.013	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	1.7D	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	8/21/2012	12	<0.0020	<0.0020	<0.0020	<0.0020	0.013	<0.0020	<0.0020	<0.0020	0.046	0.11	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	11/28/2012	15	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.057	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	2/6/2013	12.2	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.021	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/11/2013	12.5	<0.0020	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020	<0.0020	0.025	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/22/2013	14	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0075	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/10/2014	12	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	CL02-BR	4/27/2009	42	<0.0020J	<0.0020J	<0.0020J	<0.0020J	---	<0.0020J	<0.0020J	<0.0020J	<0.0020J	<0.0020J	0.011J	0.086J	<0.0020J	<0.0020J	0.16J	<0.0020J
		10/26/2009	75	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.039	0.2	<0.0020
		4/21/2010	42	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.084	0.15	<0.0020
		10/18/2010	42	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0038	0.0033	<0.0020
5/2/2011		80	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.017	<0.0050	<0.0050	0.018	<0.0050	
10/24/2011		42	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0097	0.035	<0.0020	
4/3/2012		41.5	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.011	<0.0040	0.011	0.2	<0.0040	
11/12/2012		42	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.17	<0.0040	<0.0040	0.29	<0.0040	
5/2/2013		79.6	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.043	0.057	<0.0020	



**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2- DCE (mg/l)	trans-1,2- DCE (mg/l)	
CL08-BR_ZONE2 (cont.)	4/16/2013	102	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/11/2014	102	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
CL08-BR_ZONE3	4/7/2009	70	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	<0.0010	
	4/28/2010	70	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	<0.0010	<0.0010	<0.0010	<0.0010	
	4/14/2011	70	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/2/2012	70	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/16/2013	70	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/11/2014	70	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
CL08-DO	4/6/2009	51	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	<0.0010	<0.0010	0.0013	<0.0010	
	4/22/2010	52	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	<0.0010	<0.0010	0.0011	<0.0010	
	4/6/2011	51	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/5/2012	51.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/12/2013	51.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/9/2014	51	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
CL09-BR_ZONE1	4/6/2009	160	<0.025	<0.025	<0.025	<0.025	---	<0.025	<0.025	<0.025	<0.025	<0.025	1.3	2.2	<0.025	<0.025	0.4	<0.025	
	11/2/2009	160	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.58	1.1	<0.010	0.069	1	<0.010	
	4/21/2010	160	<0.050	<0.050	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	0.7	1.7	<0.050	<0.050	5.7	<0.050	
	11/15/2010	160	<0.10	<0.10	<0.10	<0.10	---	<0.10	<0.10	<0.10	<0.10	<0.10	0.62	1.1	<0.10	0.13	11D	<0.10	
	4/14/2011	160	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.97	1.8	<0.020	0.086	1.8	<0.020	
	10/24/2011	160	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.83	2.0D	<0.020	<0.020	1	<0.020	
	4/2/2012	160	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.66	1.4	<0.040	0.11	6.4D	<0.040	
	5/2/2013	160	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	0.56	1.8	<0.10	<0.10	4.8	<0.10	
	4/11/2014	160	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	0.23	<0.10	<0.10	4.9	<0.10	
	CL09-BR_ZONE2	4/6/2009	119	<0.050	<0.050	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	0.81	1.5	<0.050	0.12	5.9	<0.050
11/2/2009		119	<0.025	<0.025	<0.025	<0.025	---	<0.025	<0.025	<0.025	<0.025	<0.025	0.43	0.94	<0.025	0.078	2.9	<0.025	
4/21/2010		119	<0.050	<0.050	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	0.68	1.3	<0.050	0.084	5.2	<0.050	
11/15/2010		119	<0.10	<0.10	<0.10	<0.10	---	<0.10	<0.10	<0.10	<0.10	<0.10	0.42	0.75	<0.10	0.12	7.7	<0.10	
4/14/2011		119	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	0.42	0.76	<0.10	0.14	9.8	<0.10	
10/24/2011		119	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	0.33	1	<0.050	0.067	2.7	<0.050	
4/2/2012		119	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	0.38	0.96	<0.050	0.09	4.5	<0.050	
5/2/2013		119	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	0.54	1.6	<0.050	0.075	2.4	<0.050	
4/11/2014		119	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	0.25	0.4	<0.050	0.085	6.7D	<0.050	
4/6/2009		81	<0.050	<0.050	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	0.56	0.84	<0.050	0.11	6.3	<0.050	
CL09-BR_ZONE3	11/2/2009	81	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.21	0.29	<0.0050	0.75	0.62	<0.0050	
	4/21/2010	81	<0.050	<0.050	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	0.24	0.36	<0.050	<0.050	5.9	<0.050	
	11/15/2010	81	<0.040	<0.040	<0.040	<0.040	---	<0.040	<0.040	<0.040	<0.040	<0.040	0.22	0.33	<0.040	0.75	4.1D	<0.040	
	4/14/2011	81	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.048	0.036	<0.010	0.063	0.98	0.016	
	10/24/2011	81	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.05	0.09	<0.010	1.2D	1.2D	0.014	
	4/2/2012	81	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.12	0.31	<0.020	0.3	2.6D	<0.020	
	5/2/2013	81	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	0.24	0.64	<0.050	0.32	2.6	<0.050	
	4/11/2014	81	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.066	0.071	<0.020	0.052	1	<0.020	
	4/2/2009	35	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.015	0.037	<0.0010	<0.0010	0.0012	<0.0010
	4/21/2010	35	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.024	0.061	<0.0010	<0.0010	0.0024	<0.0010
4/4/2011	32	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/2/2012	32.8	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.073	0.18	<0.0020	<0.0020	0.0061	<0.0020	
4/15/2013	32.8	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/7/2014	32	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	0.0051	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
CL09-S	9/24/2009	NA	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
CL10-BR	4/6/2009	44	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	0.0023	<0.0010	<0.0010	<0.0010	<0.0010	
	10/27/2009	44	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/20/2010	46	<0.0010	<0.00															



**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)	
CL10-BR (cont.)	10/25/2011	46	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0036	<0.0020	<0.0020	0.0027	<0.0020	
	4/5/2012	44.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	11/12/2012	46	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/16/2013	45	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020UJ	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/23/2013	46	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020UJ	<0.0020	<0.0020	0.0033	
	4/10/2014	44	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
CL10-DO	4/6/2009	30	0.0026	0.0022	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	10/27/2009	30	0.0021	0.0019	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/20/2010	36	0.0045	0.0041	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0016	<0.0010	<0.0010	<0.0010	
	10/14/2010	31	<0.0020	0.0021	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/5/2011	30	<0.0020	0.0027	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/27/2011	36	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/6/2012	30.5	<0.0020	0.0034	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	11/12/2012	36	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/16/2013	30	0.0023	0.0033	<0.0020	<0.0020	<0.010	<0.0020UJ	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/23/2013	36	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020UJ	<0.0020	<0.0020	<0.0020	
	4/10/2014	30	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	CL10-S	4/6/2009	13	<0.020	<0.020	<0.020	<0.020	---	<0.020	<0.020	<0.020	<0.020	<0.020	1.4	0.12	<0.020	<0.020	0.048	<0.020
		10/27/2009	13	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0064	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
4/21/2010		15	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.64	0.041	<0.0050	<0.0050	0.024	<0.0050	
10/14/2010		13	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.013	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/5/2011		13	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.87	0.032	<0.010	<0.010	0.017	<0.010	
10/25/2011		15	<0.0020	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.045	0.0027	<0.0020	<0.0020	0.0096	<0.0020	
4/5/2012		13	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.13	0.0035	<0.0020	<0.0020	0.0032	<0.0020	
11/12/2012		15	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.013	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/16/2013		11	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020UJ	<0.0020	<0.0020	<0.0020	<0.0020	1.3D	0.15	<0.0020	<0.0020	0.033	0.0038	
10/23/2013		12	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020UJ	<0.0020	<0.0020	<0.0020	
4/10/2014		12	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	1.8D	0.13	<0.0020	<0.0020	0.046	<0.0020	
CL11-DO		4/3/2009	49	0.019	0.034	0.021	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0096	0.07	<0.0010	<0.0010	0.0016	<0.0010
		4/20/2010	50	0.011	0.024	0.017	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0096	0.067	<0.0010	<0.0010	0.0013	<0.0010
	4/6/2011	49.5	0.0087J	0.021J	0.019J	<0.0020UJ	0.012J	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	0.0076J	0.067J	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	
	4/6/2012	49.5	0.0043	0.0095	0.012	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0059	0.044	<0.0020	<0.0020	<0.0020	<0.0020	
	4/15/2013	49	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0056	<0.0020	<0.0020	<0.0020	<0.0020	
	4/11/2014	48	0.0028	0.005	0.0063	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0037	0.025	<0.0020	<0.0020	<0.0020	<0.0020	
CL11-S	4/3/2009	24	0.011	0.029	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.011	0.005	<0.0010	<0.0010	<0.0010	<0.0010	
	4/20/2010	24	0.01	0.026	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.014	0.0061	<0.0010	<0.0010	<0.0010	<0.0010	
	4/6/2011	23.4	0.0057J	<0.0020UJ	<0.0020UJ	<0.0020UJ	0.011J	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	0.0086J	0.0037J	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	
	4/6/2012	23.5	0.0077	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.012	0.0063	<0.0020	<0.0020	<0.0020	<0.0020	
	4/15/2013	22	0.0032	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.011J	0.0079	<0.0020	<0.0020	<0.0020	<0.0020	
	4/11/2014	24	0.0049	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.01	0.0052	<0.0020	<0.0020	<0.0020	<0.0020	
CL12-S1	4/2/2009	22	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0031	<0.0010	<0.0010	<0.0010		
CULVERT_OUTFALL	11/10/1999	NA	<0.0020	<0.0020	0.002	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0050	<0.0020	0.017	0.079	<0.0050	<0.0020	0.051	<0.0020	
	6/5/2000	NA	<0.0020	<0.0020	<0.0010	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.010	<0.010	0.007	0.026	<0.0020	<0.0020	0.012	<0.0020	
	12/11/2000	NA	<0.0020U	<0.0020U	<0.0010U	<0.0020U	---	<0.0020U	<0.0020U	<0.0020U	<0.010U	<0.010U	<0.0020U	0.003	<0.0020U	<0.0020U	0.004	<0.0020U	
	6/4/2001	NA	<0.0020U	<0.0020U	<0.0010U	<0.0020U	---	<0.0020U	<0.0020U	<0.0020U	<0.010U	<0.010U	0.004	0.024	<0.0020U	<0.0020U	0.019	<0.0020U	
	11/26/2001	NA	<0.0020U	0.002	0.002	<0.0020U	---	<0.0020U	<0.0020U	<0.0020U	<0.010U	<0.010U	0.012	0.079	<0.0020U	<0.0020U	0.055	<0.0020U	
	5/15/2003	NA	<0.0020U	0.002	0.003	<0.0020U	---	<0.0020U	<0.0020U	<0.0020U	<0.010U	<0.010U	0.019	0.096	<0.0020U	<0.0020U	0.071	<0.0020U	
	12/22/2003	NA	<0.0010U	0.0019	0.0019	<0.0010U	---	<0.0010U	<0.0020U	<0.0010U	<0.0020U	<0.0050U	0.02	0.091	<0.0010U	<0.0020U	0.063	<0.0010U	
	1/4/2005	NA	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0020	<0.									

**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)
CULVERT_OUTFALL (Cont.)	4/28/2010	NA	<0.0010	0.0011	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.016	0.075	<0.0010	<0.0010	0.074	<0.0010
	4/6/2011	NA	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0021	<0.0020	<0.0020	0.0032	<0.0020
	4/6/2012	NA	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0021	<0.0020	<0.0020	0.0029	<0.0020
	4/15/2013	NA	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0093	0.056	<0.0020	<0.0020	0.058	<0.0020
	4/9/2014	NA	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0085	0.043	<0.0020	<0.0020	0.043
GZ-1	4/3/2009	12	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	0.016	<0.0010	<0.0010	0.0024	<0.0010
	4/20/2010	14	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002	0.022	<0.0010	<0.0010	0.0062	<0.0010
	4/5/2011	12	0.0031	0.0044	0.0074	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.17	1.6D	<0.0020	0.0029	0.62D	0.0036
	4/5/2012	12.3	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.18	0.76D	<0.010	<0.010	0.35	<0.010
	4/12/2013	12.4	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.19J	1.3	<0.020	<0.020	0.32	<0.020
	4/8/2014	12	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.013	0.047	<0.0020	<0.0020	0.0089	<0.0020
GZ-2R	4/3/2009	10	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0083	0.23	<0.0025	<0.0025	0.17	<0.0025
GZ-4	10/26/2009	14	<0.0010	0.003	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0039	0.029	<0.0010	0.0016	0.045	<0.0010
	4/20/2010	14	<0.0010	0.0015	0.0015	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0028	0.044	<0.0010	0.0037	0.069	<0.0010
	10/14/2010	14	<0.0020	0.0046	0.0045	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.047	0.24D	<0.0020	0.0028	0.43D	0.0028
	4/5/2011	14	<0.0050	0.0056	0.0072	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.097	0.78D	<0.0050	0.006	0.55D	<0.0050
	10/25/2011	14	<0.0020	0.0027	0.002	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0037	0.003	<0.0020	0.11	0.36D	0.0021
	4/5/2012	14	<0.010	<0.010	0.01	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.14	0.84	<0.010	<0.010	0.6	<0.010
	11/12/2012	14	<0.0020	0.0049	0.0036	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.2	0.54D	0.0034
	4/11/2013	12	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.11	0.71	<0.010	<0.010	0.7	<0.010
	10/23/2013	12	<0.0020	0.004	0.0068	<0.0020	0.014	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020UJ	0.042	0.75D	0.0044
	4/8/2014	12	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0045	0.0063	<0.0020	0.0044	0.055	<0.0020
MW-001	4/3/2009	17	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
MW-001DO	4/3/2009	55	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
MW-002R	4/27/2009	13	<0.0010J	<0.0010J	<0.0010J	<0.0010J	---	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	0.0020J	0.0070J	<0.0010J	<0.0010J	<0.0010J	<0.0010J
	4/21/2010	13	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	10/12/2010	10	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	5/2/2011	9	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	10/24/2011	9	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/2/2012	9.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	5/2/2013	9.8	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/29/2014	9	<0.0020	<0.0020	<0.0020	<0.0020	0.067	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/1/2009	30	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0041	<0.0010
	10/26/2009	30	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0021	<0.0010	0.014	0.0078	<0.0010
MW-003R	4/21/2010	33	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	4/4/2011	30	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020UJ	<0.0020	<0.0020
	4/2/2012	30.2	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0035	<0.0020	0.0037	0.015	<0.0020	
	4/11/2013	30.3	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	0.0051	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.006	0.007	<0.0020
	4/7/2014	30	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0023	<0.0020	<0.0020
	4/10/2014	25	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
MW-004	4/27/2009	38	<0.0010J	<0.0010J	<0.0010J	<0.0010J	---	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	0.019J	<0.0010J	<0.0010J	0.0025J	<0.0010J
	4/21/2010	38	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.021	<0.0010	<0.0010	0.0023	<0.0010
	10/12/2010	35.5	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.066	<0.0020	<0.0020	0.0087	<0.0020
	5/2/2011	36	<0.0050	<0.0050	<0.0050	<0.0050	<0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.026	<0.0050	<0.0050	<0.0050	<0.0050
	10/24/2011	35.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.048	<0.0020	<0.0020	0.0065	<0.0020
	4/2/2012	35.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.066	<0.0020	<0.0020	0.0081	<0.0020
MW-005	5/2/2013	35.4	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0061	<0.0020	<0.0020	<0.0020	<0.0020
	10/23/2013	23	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0064	0.0022	<0.0020	<0.0020	<0.0020	<0.0020
	4/10/2014	21	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.016					

**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)	
MW-005R (cont.)	4/2/2012	17.25	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0021	0.0054	<0.0020	<0.0020	<0.0020	<0.0020	
	4/11/2013	17.2	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0061	0.019	<0.0020	<0.0020	0.0064	<0.0020	
	4/7/2014	17	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0084	0.022	<0.0020	<0.0020	0.0051	<0.0020	
MW-007R	4/2/2009	24	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/28/2010	29	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
MW-008	4/3/2009	17	1.3	1.3	0.066	<0.050	---	<0.050	<0.050	<0.050	0.18	<0.050	<0.050	<0.050	<0.050	5.1	1.5	<0.050	
	4/20/2010	19	3	0.38	0.15	<0.025	---	<0.025	<0.025	<0.025	<0.025	<0.025	0.07	0.087	<0.025	2.1	2.5	<0.025	
	4/6/2011	16.9	0.92J	0.21J	0.055J	<0.020UJ	<0.10UJ	<0.020UJ	<0.020UJ	<0.020UJ	0.023J	<0.020UJ	<0.020UJ	<0.020UJ	<0.020UJ	1.3J	0.50J	<0.020UJ	
	4/4/2012	17	0.1	0.9	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	0.64	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
	8/21/2012	16.8	0.034	0.24	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	0.41	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
	11/28/2012	19	<0.0040	0.084	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	0.21	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	
	2/6/2013	16.8	0.45	0.4	0.014	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	0.17	<0.0050	<0.0050	<0.0050	<0.0050	0.19	0.054	<0.0050	
	4/11/2013	17.9	0.42	1.1D	0.029J	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	0.32	<0.0050	0.044	0.029	<0.0050	0.93D	0.19	<0.0050	
	4/10/2014	17	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	MW-009	1/14/2009	19	<0.0010	0.0025	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	0.014	<0.0010	<0.0010	0.0015	<0.0010	0.007	0.0061	<0.0010
4/2/2009		20	<0.0010	0.003	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	0.0099	<0.0010	<0.0010	0.0015	<0.0010	0.0036	0.0053	<0.0010	
7/14/2009		19	0.0018	0.011	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0065	0.047	0.0018	0.026	0.043	0.0018	
10/27/2009		20	<0.0010	0.0028	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	0.0056	<0.0010	<0.0010	<0.0010	<0.0010	0.005	0.0059	0.0014	
1/28/2010		20	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	0.0023	<0.0010	<0.0010	<0.0010	<0.0010	0.0035	0.0058	<0.0010	
4/22/2010		19	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	0.0044	<0.0010	<0.0010	0.0013	<0.0010	0.0086	0.0036	<0.0010	
7/14/2010		19	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	---	<0.0010UJ	<0.0010UJ	<0.0010UJ	0.0025J	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	0.0026J	0.0039J	<0.0010UJ	
10/12/2010		20	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.002	0.0024	<0.0020	
1/4/2011		19	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0023	<0.0020	0.013	0.011	<0.0020	
4/5/2011		19.8	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0028	<0.0020	<0.0020	<0.0020	<0.0020	0.003	0.0028	<0.0020	
7/28/2011		19	<0.0020	<0.0020	<0.0020	<0.0020	0.015	<0.0020	<0.0020	<0.0020	0.0056	<0.0020	<0.0020	<0.0020	<0.0020	0.03	0.023	<0.0020	
10/25/2011		20	<0.0020	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020	<0.0020	0.0096	<0.0020	<0.0020	<0.0020	<0.0020	0.016	0.02	<0.0020	
1/17/2012		20	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.006	<0.0020	<0.0020	0.0034	<0.0020	0.0093	0.039	<0.0020	
4/3/2012		20	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0029	<0.0020	<0.0020	0.0061	<0.0020	0.012	0.027	<0.0020	
8/21/2012		19.7	<0.0020	<0.0020	<0.0020	<0.0020	0.01	<0.0020	<0.0020	0.003	<0.0020	<0.0020	<0.0020	0.0027	<0.0020	0.0058	0.016	<0.0020	
11/28/2012		19	<0.0020	0.003	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0048	<0.0020	<0.0020	0.0045	0.019	<0.0020	0.11	0.13D	0.0032
2/6/2013		20	<0.0020	0.0083	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0052	<0.0020	<0.0020	0.0058	0.023	<0.0020	0.45D	0.60D	0.0029
4/11/2013		19	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.022	<0.010	0.63	0.74	<0.010	
10/22/2013		20.21	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.46	1.2	<0.10	
1/20/2014		20.2	<0.010	0.015	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	1.7D	3.0D	<0.010	
4/8/2014	20	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	2.4	4.1D	<0.050		
8/6/2014	19	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.69	2.6	<0.040		
MW-009A	4/3/2009	13	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	10/26/2009	13	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/20/2010	9	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.01	0.0084	<0.0010	<0.0010	0.016	<0.0010	
	10/12/2010	9	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/4/2011	13.4	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0041	0.0049	<0.0020	0.0033	0.062	<0.0020	
	10/26/2011	13	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0049	0.012	<0.0020	0.097	0.13	<0.0020	
	4/3/2012	13	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0033	<0.0020	
	11/13/2012	9	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/15/2013	13.3	<0.0020	<0.0020	<0.0020	<0.0020	0.012	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/23/2013	13.33	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/10/2014	13	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.032J	0.028	<0.0020		
MW-013	4/3/2009	42	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	21	12	<0.20	<0.20	<0.20	<0.20	
	4/21/2010	54	1.2	<0.020	<0.020	<0.020	---	2.2	<0.020	0.24	<0.020	<0.020	0.074	<0.020	<0.020	<0.020	<0.020	<0.020	
	10/14/2010	54	0.77D	0.0072	<0.0020	<0.0020	---	2.7D	0.014	0.30D	<0.0020	0.0061	0.0037	<0.0020					

Table 3  
Water Quality Data - VOC Results  
2009 to Present  
Former Varian Facility Site  
150 Sohler Road, Beverly, Massachusetts

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)
MW-013 (cont.)	11/26/2012	54	0.39	<0.0050	<0.0050	<0.0050	<0.025	0.55D	0.0054	0.55D	<0.0050	<0.0050	0.058	0.026	<0.0050	<0.0050	<0.0050	<0.0050
	4/17/2013	41.8	0.25	<0.0050	<0.0050	<0.0050	<0.025	0.28	<0.0050	0.41	<0.0050	<0.0050	0.017	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
	10/24/2013	50	0.29D	0.0051	<0.0020	<0.0020	0.011	0.42D	0.0052	0.48D	<0.0020	<0.0020	0.022	0.0061	<0.0020	<0.0020	<0.0020	<0.0020
	4/9/2014	41	0.19	0.0051	<0.0050	<0.0050	<0.025	0.23	0.0052	0.36	<0.0050	<0.0050	0.014	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
MW-014A	4/3/2009	60	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.42	<0.0050	<0.0050	0.054	<0.0050
	4/20/2010	60	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.007	0.44	<0.0050	<0.0050	0.054	<0.0050
	4/4/2011	59	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.005	0.38D	<0.0020	<0.0020UJ	0.065	<0.0020
	4/5/2012	59	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0027	0.16D	<0.0020	0.0023	0.06	<0.0020
	4/17/2013	58.8	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.41	<0.0050	<0.0050	0.087	<0.0050
	4/9/2014	58	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0031	0.057	<0.0020	<0.0020	0.19	<0.0020
MW-016	10/23/2013	35	<0.0020	0.007	<0.0020	<0.0020	<0.010	<0.0020	0.0024	<0.0020	<0.0020	<0.0020	0.012	0.50D	<0.0020	<0.0020	0.12	<0.0020
	4/10/2014	35	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.058	1.7D	<0.010	<0.010	0.36	<0.010
MW-030	4/9/2009	20	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
MW-033B	4/9/2009	24	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	4/21/2010	24	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	4/5/2011	24.8	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/6/2012	24.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/15/2013	19	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/11/2014	25	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
MW-034	4/9/2009	0	<0.010	<0.010	0.014	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	0.21	<0.010	0.013	1.1	<0.010
	4/28/2010	64	<0.010	<0.010	0.013	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.11	<0.010	0.014	1.1	<0.010
	4/7/2011	64	<0.020UJ	<0.020UJ	<0.020UJ	<0.020UJ	<0.10UJ	<0.020UJ	<0.020UJ	<0.020UJ	<0.020UJ	<0.020UJ	<0.020UJ	0.14J	<0.020UJ	0.020J	1.2J	<0.020UJ
	4/4/2012	63	<0.020	<0.020	0.021	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.16	<0.020	0.022	1.3	<0.020
	4/16/2013	63	<0.020	<0.020	0.02	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.089	<0.020	0.026	1.6	<0.020
	4/9/2014	62	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.13	<0.020	<0.020	1.3	<0.020
MW-035	4/1/2009	24	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
MW-036	4/2/2009	51	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0039	<0.0010	<0.0010	<0.0010	<0.0010
	4/20/2010	55	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.25	0.59	<0.0050	<0.0050	0.22	<0.0050
	4/4/2011	51	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.54	1.2D	<0.010	0.017	0.42	<0.010
	4/6/2012	51.8	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.75	1.8	<0.020	0.061	0.8	<0.020
	4/12/2013	51.7	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	1.2J	2.3D	<0.020	0.14J	1.2	<0.020
	4/7/2014	52	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.95	2.4	<0.040	0.18	1.4	<0.040
MW-1_32-TOZER	2/24/2011	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	0.013	0.62D	<0.0050	<0.0050	0.046	<0.0050
	4/6/2012	18	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0067	0.41	<0.0050	<0.0050	0.098	<0.0050
	4/16/2013	12	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020UJ	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.11	<0.0020
MW-2_32-TOZER	2/24/2011	NA	<0.25	<0.25	<0.25	<0.25	<2.5	<0.25	<0.25	<0.25	<0.50	<0.50	11	1.8	<0.25	<0.25	3.4	<0.25
	11/8/2011	NA	<0.20	<0.20	<0.20	<0.20	<2.0	<0.20	<0.20	<0.20	<0.40	<0.40	10	1.5	<0.20	<0.20	3.7	<0.20
	4/6/2012	17.3	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	12	1.8	<0.20	<0.20	3.3	<0.20
	11/28/2012	19	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	16	4.3	<0.20	<0.20	4.6	<0.20
	4/16/2013	17	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10UJ	<0.10	<0.10	<0.10	<0.10	6.7	3.8	<0.10	<0.10	4.6	<0.10
	10/23/2013	17	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	8.1	1.2	<0.10UJ	<0.10	2.2	<0.10
	4/10/2014	17	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	4.9	0.97	<0.10	<0.10	2.2	<0.10
MW-3_32-TOZER	2/24/2011	NA	<0.0010	<0.0010	<0.0010	<0.0010	<0.010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	0.039	0.012	<0.0010	<0.0010	0.013	<0.0010
	4/6/2012	18.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
MW-4_32-TOZER	11/8/2011	0	<0.0010	<0.0010	<0.0010	<0.0010	<0.010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	0.0044	0.0025	<0.0010	<0.0010	0.066	<0.0010
	11/12/2012	14	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/16/2013	14	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020UJ	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
MW-5_32-TOZER	11/8/2011	NA	<0.0010	0.0026	<0.0010	<0.0010	0.028	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	0.0051	0.019	<0.0010	<0.0010	0.0038	<0.0010
	11/12/2012	14	<0.0020	0.015	0.0052	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0053	0.041	<0.0020	<0.0020	0.12	<0.0020
	4/16/2013	14	<0.0020	0.0057	0.003	<0.0020	<0.010	<0.0020UJ	<0.0020	<0.0020	<0.0020	<0.0020	0.0043	0.029	<0.0020	<0.0020	0.043	<0.0020

Table 3  
Water Quality Data - VOC Results  
2009 to Present  
Former Varian Facility Site  
150 Sohier Road, Beverly, Massachusetts

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)	
OB-04-BR (cont.)	4/3/2012	88	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/12/2013	77.3	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
OB-04-DO	4/1/2009	69	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.035	0.07	<0.0010	<0.0010	0.038	<0.0010	
	4/20/2010	69	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.054	0.1	<0.0010	<0.0010	0.027	<0.0010	
	4/4/2011	67	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.04	0.094	<0.0020	<0.0020	0.043	<0.0020	
	4/3/2012	67	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.059	0.14	<0.0020	0.011	0.091	<0.0020	
	4/12/2013	67	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.075	0.16	<0.0020	0.013	0.086	<0.0020	
	4/7/2014	68	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.079	0.19	<0.0020	0.021	0.12	<0.0020	
OB-04-S	4/1/2009	23	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0016	<0.0010	<0.0010	<0.0010	<0.0010	
	9/24/2009	NA	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0022	<0.0010	<0.0010	<0.0010	<0.0010	
	4/20/2010	24	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/4/2011	23	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/3/2012	23.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/12/2013	23.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
OB-05-BR	4/1/2009	106	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.084	0.036	<0.0010	
	10/26/2009	104	<0.0010	0.0013	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.067	0.026	<0.0010	
	4/20/2010	109	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.24	1.2	<0.010	
	10/12/2010	109	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.41	0.48	<0.0050	
	4/4/2011	104	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.004	<0.0040	0.004	0.22	0.032	<0.0040	
	10/24/2011	109	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0042	<0.0020	0.086	0.013	<0.0020
	4/3/2012	104	<0.0020	0.0022	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.11	0.0069	<0.0020	
	4/12/2013	104	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.012	0.0085	<0.0020	
	4/8/2014	100	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0042	<0.0020	0.0084	0.016	<0.0020
OB-05-DO	4/1/2009	81	<0.0050	0.014	0.014	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.13	0.47	<0.0050	<0.0050	0.11	<0.0050	
	10/26/2009	81	<0.0050	0.011	0.0096	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.16	0.69	<0.0050	<0.0050	0.23	<0.0050	
	4/20/2010	85	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.52	1.4	<0.010	<0.010	0.4	<0.010	
	10/12/2010	81.5	<0.040	<0.040	<0.040	<0.040	---	<0.040	<0.040	<0.040	<0.040	<0.040	0.47	1.9	<0.040	<0.040	0.48	<0.040	
	4/4/2011	81	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.87	3.0D	<0.020	<0.020UJ	0.76	<0.020	
	10/24/2011	81	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.99	2.7D	<0.010	0.026	1.0D	<0.010	
	4/3/2012	81.3	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.6	1.8	<0.020	<0.020	0.44	<0.020	
	4/12/2013	81.5	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.85	3	<0.040	<0.040	0.72	<0.040	
	4/8/2014	80	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.59	1.8	<0.020	0.078	1.7	<0.020	
OB-05-S	4/1/2009	25	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002	0.0068	<0.0010	<0.0010	<0.0010	<0.0010	
	10/26/2009	25	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0019	<0.0010	<0.0010	<0.0010	<0.0010	
	4/20/2010	29	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0043	0.014	<0.0010	<0.0010	0.0028	<0.0010	
	10/12/2010	25	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0043	<0.0020	<0.0020	<0.0020	<0.0020	
	4/4/2011	25	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0022	0.0036	<0.0020	<0.0020UJ	<0.0020	<0.0020	
	10/24/2011	27	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0034	0.0053	<0.0020	<0.0020	<0.0020	<0.0020	
	4/3/2012	25	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0024	<0.0020	<0.0020	<0.0020	<0.0020	
	4/12/2013	25	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0024	<0.0020	<0.0020	<0.0020	<0.0020	
4/8/2014	25	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0024	<0.0020	<0.0020	<0.0020	<0.0020		
OB-06-BR	4/2/2009	99	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.22	0.46	<0.0050	<0.0050	0.15	<0.0050	
	10/26/2009	99	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.12	0.22	<0.0025	<0.0025	0.07	<0.0025	
	4/22/2010	101	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.12	0.22	<0.0025	<0.0025	0.04	<0.0025	
	10/12/2010	101	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.061	0.19	<0.0020	<0.0020	0.023	<0.0020	
	4/5/2011	99	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0028	0.0025	<0.0020	0.029	0.074	<0.0020	
	10/24/2011	101	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.07	0.14	<0.0020	<0.0020	0.019	<0.0020	
	4/3/2012	89	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.049	0.14	<0.0020	<0.0020	0.023	<0.0020	
	4/12/2013	100	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.069	0.11	<0.0020	<0.0020	0.038	<0.0020	
	4/9/2014	99	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020											



Table 3  
Water Quality Data - VOC Results  
2009 to Present  
Former Varian Facility Site  
150 Sohier Road, Beverly, Massachusetts

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2- DCE (mg/l)	trans-1,2- DCE (mg/l)	
OB-09-DO (cont.)	1/5/2011	95	<0.020	<0.020	<0.020	<0.020	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	1.3	0.35	<0.020	
	4/6/2011	92.3	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	1.4D	0.45	<0.010	
	7/28/2011	92	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	2	0.57	<0.040	
	10/25/2011	92	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.41	1	<0.040	0.15	5.1D	<0.040	
	1/18/2012	92	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.9	1.6	<0.040	
	4/3/2012	92	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.9	2	<0.040	
	8/21/2012	92	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	1.8D	1.4	<0.020	
	11/28/2012	95	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	1.1	0.27	<0.020	
	2/6/2013	87.2	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	1.5	1.4	<0.020	
	4/11/2013	94	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	1.5	1.8	<0.020	
	10/22/2013	95	<0.020	<0.020	0.023	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	1.3J	2.2D	<0.020	
	4/10/2014	92	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.9J	2.3	<0.040	
	OB-09-S	1/13/2009	29	0.039	0.38	<0.010	<0.010	---	<0.010	<0.010	<0.010	0.13	<0.010	0.012	0.062	<0.010	1.2	0.43	0.02
		4/9/2009	27.5	0.055	0.023	<0.020	<0.020	---	<0.020	<0.020	<0.020	0.024J	<0.020	<0.020	<0.020	<0.020	1.9	1.4	<0.020
7/14/2009		29	0.002	0.049	<0.0010	0.0011	---	<0.0010	<0.0010	<0.0010	0.046J	<0.0010	0.0045	0.035	0.0049	0.073	0.025	0.0037	
10/28/2009		29	<0.0050	0.078	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	0.046	<0.0050	<0.0050	<0.0050	<0.0050	0.63	0.24	0.0056	
10/22/2013		27.5	<0.0050	0.097	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	0.042	<0.0050	<0.0050	0.009	<0.0050	0.49	0.15	0.0098	
4/22/2010		29	0.014	0.046	<0.0010	<0.0010	---	<0.0010	<0.0010	0.0036	0.029	<0.0010	0.0019	0.029	<0.0010	0.14	0.048	0.0047	
7/14/2010		29	0.019J	0.25DJ	<0.0010UJ	0.0024J	---	<0.0010UJ	<0.0010UJ	<0.0010UJ	0.087J	<0.0010UJ	0.0018J	0.0035J	<0.0010UJ	0.020J	0.020J	0.0024J	
10/12/2010		27	0.0045	0.053	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	0.12	<0.0020	<0.0020	<0.0020	<0.0020	0.023	0.061	0.0021	
1/5/2011		29	<0.0020	0.0089	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	0.04	<0.0020	<0.0020	0.0074	<0.0020	0.0054	0.0065	<0.0020	
4/5/2011		26.5	0.018	0.039	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.047	<0.0020	<0.0020	0.003	<0.0020	0.076	0.081	0.0028	
7/28/2011		26	<0.0020	<0.0020	<0.0020	0.0025	<0.019	<0.0020	<0.0020	<0.0020	0.044	<0.0020	<0.0020	<0.0020	<0.0020	0.0031	0.0063	<0.0020	
10/25/2011		23	0.14	0.89D	0.0042	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.45D	<0.0020	<0.0020	<0.0020	<0.0020	0.095	0.018	<0.0020	
1/18/2012		23.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.56D	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0037	<0.0020	
4/3/2012		23	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	0.27	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	
8/21/2012		23	<0.0020	<0.0020	<0.0020	<0.0020	0.014	<0.0020	<0.0020	<0.0020	0.0059	<0.0020	<0.0020	0.0048	<0.0020	<0.0020	0.0027	<0.0020	
11/28/2012		29	<0.0020	<0.0020	<0.0020	<0.0020	0.01	<0.0020	<0.0020	<0.0020	0.0082	<0.0020	0.0077	0.033	<0.0020	0.0037	0.017	<0.0020	
2/6/2013		23.1	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0056	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.019	<0.0020	
4/11/2013		23	<0.0020	0.0024	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020	0.003	<0.0020	0.035	0.023	<0.0020	
10/22/2013		29	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.008	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0033	<0.0020	
1/21/2014		23.1	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0022	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/9/2014		23	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0023	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0029	<0.0020	
8/6/2014		18	<0.0020	0.0043	0.0023	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.11	<0.0020	<0.0020	<0.0020	<0.0020	0.14	0.37D	<0.0020	
OB-10-BR		4/3/2009	74	<0.020	<0.020	<0.020	<0.020	---	<0.020	<0.020	<0.020	<0.020	<0.020	0.31	1.7	<0.020	0.034	1.6	<0.020
	4/21/2010	75	<0.020	<0.020	<0.020	<0.020	---	<0.020	<0.020	<0.020	<0.020	<0.020	0.079	0.51	<0.020	0.04	2.9	<0.020	
	4/5/2011	73.4	<0.0020	0.0032	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0043	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/6/2012	73	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.25	1.6	<0.020	<0.020	0.3	<0.020	
	4/12/2013	71	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	2.0DJ	4.8D	<0.020	<0.020	0.51	<0.020	
	4/10/2014	72	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	0.89	4.9	<0.10	<0.10	0.76	<0.10	
OB-10-DO	1/13/2009	49	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.017	0.39	<0.0050	<0.0050	0.4	<0.0050	
	4/1/2009	46	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.034	1.1	<0.010	<0.010	0.66	<0.010	
	7/14/2010	48.5	<0.010UJ	<0.010UJ	<0.010UJ	<0.010UJ	---	<0.010UJ	<0.010UJ	<0.010UJ	<0.010UJ	<0.010UJ	0.020J	1.2J	<0.010UJ	<0.010UJ	0.16J	0.014J	
	10/13/2010	46	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	1.1D	0.014	
	1/5/2011	48.5	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.37	<0.010	<0.010	0.69	0.014	
	4/6/2011	46	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.17	<0.010	<0.010	0.76	0.013	
	7/28/2011	46	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	0.87	<0.010	<0.010	0.4	0.017	
	10/26/2011	48.5	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.25	<0.010	<0.010	0.81	0.019	
	1/18/2012	46	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.13	0.92	<0.010	<0.010	0.38	0.023
	4/4/2012	46	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.3	<0.010	<0.010	0.74	0.021	

Table 3  
Water Quality Data - VOC Results  
2009 to Present  
Former Varian Facility Site  
150 Sohier Road, Beverly, Massachusetts

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)	
OB-10-S	1/13/2009	29	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/1/2009	29	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	7/14/2009	29	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	10/27/2009	29	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	1/28/2010	29	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	4/22/2010	29	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	7/14/2010	29	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	---	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ
	10/13/2010	29	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	1/5/2011	29	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/6/2011	31	<0.0020	<0.0020	<0.0020	<0.0020	0.01	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	7/28/2011	29	<0.0020	<0.0020	<0.0020	<0.0020	0.013	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	10/26/2011	29	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	1/18/2012	29	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/4/2012	29	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0081	0.02	<0.0020	<0.0020	<0.0020	<0.0020
	8/21/2012	29	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020	0.004	<0.0020	<0.0020
	11/28/2012	29	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0038	0.03	<0.0020	<0.0020	0.0092	<0.0020
	2/6/2013	29.1	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0023	0.024	<0.0020	<0.0020	0.0079	<0.0020
	5/2/2013	29	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0051	0.032	<0.0020	<0.0020	0.0093	<0.0020
	4/10/2014	29	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0029	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	OB-11-BR	4/3/2009	85	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0031	<0.0010	0.004	0.022	0.0021
4/6/2011		86.1	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.010UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	0.0064J	<0.0020UJ	0.0027J	0.036J	0.0045J	
4/5/2012		86	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0032	<0.0020	<0.0020	0.045	0.0051	
4/17/2013		82	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0037	<0.0020	<0.0020	0.047	0.0058	
4/9/2014		86	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0055	<0.0020	<0.0020	0.035	0.0067	
OB-11-DO	4/3/2009	61	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.065	<0.0010	<0.0010	0.023	<0.0010	
	4/6/2011	59.8	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.010UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	0.075J	<0.0020UJ	<0.0020UJ	0.021J	<0.0020UJ	
	4/5/2012	59	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.083	<0.0020	<0.0020	0.021	<0.0020	
	4/17/2013	60	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.084	<0.0020	<0.0020	0.027	<0.0020	
	4/9/2014	60	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.091	<0.0020	<0.0020	0.02	<0.0020	
OB-11-S	4/3/2009	29	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
OB-12-BR	1/13/2009	87	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0016	0.023	<0.0010	0.0013	0.037	<0.0010	
	4/1/2009	84	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0021	0.051	<0.0010	0.002	0.084	<0.0010	
OB-12-DO	1/13/2009	59	<0.40	<0.40	<0.40	<0.40	---	<0.40	<0.40	<0.40	<0.40	<0.40	2.3	39	<0.40	<0.40	18	<0.40	
	4/1/2009	50	<0.50	<0.50	<0.50	<0.50	---	<0.50	<0.50	<0.50	<0.50	<0.50	2.1	43	<0.50	<0.50	20	<0.50	
	10/27/2009	50	<0.0010	0.0078	<0.0010	0.0027	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	5/7/2010	57	<0.0010	0.0075	<0.0010	0.0026	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.088	<0.0010	<0.0010	<0.0010	<0.0010	
	7/14/2010	59	<0.0010UJ	0.0084J	<0.0010UJ	0.0034J	---	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	0.27DJ	0.0038J	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ
	10/13/2010	46	<0.0020	0.0076	0.024	<0.0020	0.011	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	1.4D	21D	<0.0020	<0.0020	8.7D	0.014
	1/5/2011	59	<0.0050	0.0075	0.053	<0.0050	0.015J	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	2.2D	45D	<0.0050	0.0066	24D	0.018
	4/6/2011	49.1	<0.50	<0.50	<0.50	<0.50	<2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.1	33	<0.50	<0.50	17	<0.50
	7/28/2011	59	<0.0020	0.0068	<0.0020	0.0022	0.02	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	10/26/2011	48	<0.0020	0.0069	<0.0020	0.0022	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0034	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	1/17/2012	48.5	<0.0020	0.008	0.018	0.0021	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	1.8D	15D	<0.0020	<0.0020	5.5D	0.013
	4/4/2012	48	<0.40	<0.40	<0.40	<0.40	<2.0	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	2.5	37	<0.40	<0.40	19	<0.40
	11/26/2012	59	<0.0020	0.0068	<0.0020	0.0024	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/17/2013	56	<0.0020	0.0076	<0.0020	<0.0020	0.014	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.086	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	10/24/2013	59	<0.0020	0.0057	0.025	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	1.8D	18D	<0.0020	<0.0020	7.5D	0.051
	4/9/2014	47	<0.0020	0.0059	0.059	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	2.0D	28D	<0.0020	0.0053	16D	0.11



Table 3  
Water Quality Data - VOC Results  
2009 to Present  
Former Varian Facility Site  
150 Sohier Road, Beverly, Massachusetts

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2- DCE (mg/l)	trans-1,2- DCE (mg/l)	
OB-12-S	1/13/2009	29	0.0041	<0.0025	<0.0025	<0.0025	---	0.0051	<0.0025	<0.0025	<0.0025	<0.0025	0.25	0.18	<0.0025	<0.0025	<0.0025	<0.0025	
	4/1/2009	26	0.0021	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.17	0.11	<0.0020	<0.0020	<0.0020	<0.0020	
	7/14/2009	29	0.0048	<0.0025	<0.0025	<0.0025	---	0.0061	<0.0025	<0.0025	<0.0025	<0.0025	0.26	0.19	<0.0025	<0.0025	<0.0025	<0.0025	
	10/27/2009	26	0.0012	<0.0010	<0.0010	<0.0010	---	0.0017	<0.0010	<0.0010	<0.0010	<0.0010	0.088	0.022	<0.0010	<0.0010	<0.0010	<0.0010	
	1/28/2010	26	0.0022	<0.0010	<0.0010	<0.0010	---	0.002	<0.0010	<0.0010	<0.0010	<0.0010	0.072	0.015	<0.0010	<0.0010	<0.0010	<0.0010	
	4/22/2010	29	0.0023	<0.0010	<0.0010	<0.0010	---	0.0017	<0.0010	<0.0010	<0.0010	<0.0010	0.089	0.055	<0.0010	<0.0010	<0.0010	<0.0010	
	7/14/2010	29	0.0043J	<0.0010UJ	<0.0010UJ	<0.0010UJ	---	0.0039J	<0.0010UJ	0.0025J	<0.0010UJ	<0.0010UJ	0.22DJ	0.14J	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	
	10/13/2010	26	0.005	<0.0040	<0.0040	<0.0040	0.0091J	0.0052	<0.0040	<0.0040	<0.0040	<0.0040	0.22	0.15	<0.0040	<0.0040	<0.0040	<0.0040	
	1/5/2011	29	0.0038	<0.0020	<0.0020	<0.0020	0.012	0.0034	<0.0020	0.0026	<0.0020	<0.0020	0.17	0.098	<0.0020	<0.0020	<0.0020	<0.0020	
	4/6/2011	27.7	<0.0020	<0.0020	<0.0020	<0.0020	0.0053J	0.002	<0.0020	<0.0020	<0.0020	<0.0020	0.15	0.071	<0.0020	<0.0020	<0.0020	<0.0020	
	7/28/2011	26	0.0033	<0.0020	<0.0020	<0.0020	0.015	0.0025	<0.0020	0.0023	<0.0020	<0.0020	0.19	0.12	<0.0020	<0.0020	<0.0020	<0.0020	
	10/26/2011	26	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.058	0.021	<0.0020	<0.0020	<0.0020	<0.0020	
	1/17/2012	26.5	0.0041	<0.0020	<0.0020	<0.0020	<0.010	0.0037	<0.0020	0.0033	<0.0020	<0.0020	0.19	0.14	<0.0020	<0.0020	<0.0020	<0.0020	
	4/4/2012	26	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.2	0.11	<0.0040	<0.0040	<0.0040	<0.0040	
	8/21/2012	27.7	0.0042	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	0.0043	<0.0040	<0.0040	0.19	0.13	<0.0040	<0.0040	<0.0040	<0.0040	
	11/28/2012	29	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	2/6/2013	27.4	<0.0061	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	0.007	<0.0040	<0.0040	0.26	0.16	<0.0040	<0.0040	<0.0040	<0.0040	
	4/12/2013	27	0.004	<0.0020	<0.0020	<0.0020	<0.010	0.0028	<0.0020	0.0038	<0.0020	<0.0020	0.18D	0.12	<0.0020	<0.0020	<0.0020	<0.0020	
	4/9/2014	27	0.0022	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	0.0029	<0.0020	<0.0020	0.16	0.096	<0.0020	<0.0020	<0.0020	<0.0020	
	OB-14-DO	4/3/2009	55	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.086	0.84	<0.010	<0.010	0.21	<0.010
4/6/2011		55.4	<0.020UJ	<0.020UJ	<0.020UJ	<0.020UJ	<0.10UJ	<0.020UJ	<0.020UJ	<0.020UJ	<0.020UJ	<0.020UJ	0.096J	1.0J	<0.020UJ	<0.020UJ	0.17J	<0.020UJ	
4/5/2012		55	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.095	1.2	<0.020	<0.020	0.13	<0.020	
4/18/2013		56	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.094	1.1	<0.020	<0.020	0.15	<0.020	
4/9/2014		55	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.11	1.3	<0.020	<0.020	0.17	<0.020	
OB-15-S	1/13/2009	19	0.5	<0.050	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	6.1	4.3	<0.050	<0.050	0.76	<0.050	
	4/1/2009	18	0.25	<0.10	<0.10	<0.10	---	<0.10	<0.10	<0.10	<0.10	<0.10	4.4	4.4	<0.10	<0.10	7.6	<0.10	
	7/14/2009	19	<0.10	<0.10	<0.10	<0.10	---	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.21	<0.10	0.78	9.5	<0.10	
	10/27/2009	18	<0.050	<0.050	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.092	<0.050	1.3	4.4	<0.050	
	1/28/2010	18	<0.050	<0.050	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	0.13	0.27	<0.050	1.4	5.6	<0.050	
	4/22/2010	19	<0.050	<0.050	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	1.2	3.7	<0.050	
	7/14/2010	19	0.0044J	0.0054J	<0.0010UJ	<0.0010UJ	---	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	<0.0010UJ	0.0011J	<0.0010UJ	0.0060J	0.0044J	0.0021J	
	10/12/2010	19	0.0026	0.0085	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.013	0.014	<0.0020
	1/4/2011	19	<0.0020	0.0022	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	0.0065	<0.0020	<0.0020	<0.0020	<0.0020	0.1	0.11	0.0022
	4/6/2011	18.7	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05	<0.010	0.53	1.2D	<0.010	
	7/28/2011	19	<0.0020	<0.0020	<0.0020	<0.0020	0.017	<0.0020	<0.0020	<0.0020	0.0028	<0.0020	<0.0020	0.012	<0.0020	0.04	0.026	<0.0020	
	10/25/2011	18.5	<0.0020	0.0051	<0.0020	<0.0020	0.013	<0.0020	<0.0020	<0.0020	0.0054	<0.0020	<0.0020	<0.0020	<0.0020	0.18	0.15	<0.0020	
	1/17/2012	18.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0043	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0052	0.0045	<0.0020
	4/3/2012	18.75	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.64	1.4	<0.020
	8/21/2012	18.6	<0.0020	<0.0020	<0.0020	<0.0020	0.014	<0.0020	<0.0020	0.02	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0088	0.024	<0.0020
	11/28/2012	19	<0.0020	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020	0.0056	0.0031	<0.0020	0.0074	0.01	<0.0020	0.067	0.055	<0.0020	
	2/6/2013	18.8	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0025	<0.0020	<0.0020	0.004	<0.0020	0.032	0.035	<0.0020	
	4/11/2013	19	<0.0020	<0.0020	<0.0020	<0.0020	0.014	<0.0020	<0.0020	<0.0020	0.0035	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.15	0.024	<0.0020
	10/22/2013	18.47	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0021	<0.0020	<0.0020	0.0023	<0.0020	0.057	0.017	<0.0020	
	1/21/2014	19.7	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0036	<0.0020	0.095	0.0058	<0.0020	
4/8/2014	18	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.011	0.0029	<0.0020	
8/6/2014	17	<0.0020	0.0022	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	0.0029	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0038	0.006	<0.0020	
OB-16-BR	4/3/2009	32	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0055	<0.0010	<0.0010	<0.0010	<0.0010	
	4/20/2010	32	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/5/2011	32	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/5/2012	32	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/16/2013	34	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020UJ	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/10/2014	20	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020		

**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2- DCE (mg/l)	trans-1,2- DCE (mg/l)	
OB-16-S	4/3/2009	15	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	0.0016	<0.0010	<0.0010	<0.0010	<0.0010	
	4/20/2010	17	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0017	<0.0010	<0.0010	<0.0010	<0.0010	
	4/6/2011	15	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/5/2012	15.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/16/2013	16	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020UJ	<0.0020	0.048	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/10/2014	15	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
OB-17-BR	4/1/2009	95	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.018	0.37	<0.0025	
	4/21/2010	97	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.17	0.11	<0.0025	
	4/4/2011	96	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0029	<0.0020	0.13	0.039	<0.0020	
	4/2/2012	98	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.13	<0.0020	<0.0020	
	4/12/2013	97	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020J	<0.0020	<0.0020	0.097J	0.016	<0.0020
	4/7/2014	95	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0021	<0.0020	0.012	0.006	<0.0020
OB-17-DO	4/1/2009	41	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.017	0.019	<0.0010	<0.0010	<0.0010	<0.0010	
	4/21/2010	42	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.016	0.018	<0.0010	<0.0010	<0.0010	<0.0010	
	4/4/2011	41	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.014	0.015	<0.0020	<0.0020UJ	<0.0020	<0.0020	
	4/2/2012	41.24	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.013	0.015	<0.0020	<0.0020	<0.0020	<0.0020	
	4/12/2013	41.4	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0094J	0.0096	<0.0020	<0.0020	<0.0020	<0.0020	
	4/7/2014	41	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0066	0.0078	<0.0020	<0.0020	<0.0020	<0.0020	
OB-18-DO	4/2/2009	23	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0051	0.088	<0.0010	0.0016	0.056	<0.0010	
	10/26/2009	23	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0019	<0.0010	<0.0010	0.012	0.11	<0.0010	<0.0010	0.048	<0.0010	
	4/20/2010	25	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.071	0.7	<0.010	0.013	0.47	<0.010	
	10/14/2010	24	<0.0020	0.0023	0.0038	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.035	0.36D	<0.0020	0.016	0.46D	0.0032	
	4/5/2011	23	<0.0020	0.0027	0.0048	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.076	0.63D	<0.0020	0.051	0.66D	<0.0020	
	10/25/2011	23	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.027	0.16	<0.0020	0.007	0.099	<0.0020	
	4/5/2012	23.8	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.018	0.23	<0.0050	0.024	0.37	<0.0050	
	4/12/2013	23.8	<0.0050	<0.0050	0.0057	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.039J	0.37	<0.0050	0.063J	0.43	<0.0050	
	4/8/2014	23	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.017	<0.0020	<0.0020	0.013	<0.0020	
	4/2/2009	11	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
OB-18-S	10/26/2009	11	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	<0.0010	<0.0010	
	4/20/2010	14	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0013	<0.0010	<0.0010	0.0011	<0.0010	
	10/14/2010	11	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0026	0.0082	<0.0020	0.019	0.07	0.0082	
	4/5/2011	11	<0.0020	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/25/2011	11	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/5/2012	11.2	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0049	<0.0020	<0.0020	0.0026	<0.0020	
	11/12/2012	14	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/12/2013	11.2	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/23/2013	11	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.013	<0.0020UJ	0.0087	0.086	0.0031	
	4/8/2014	10	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	OB-19-BR	1/13/2009	91	<0.10	<0.10	<0.10	<0.10	---	<0.10	<0.10	<0.10	<0.10	<0.10	0.85	9.4	<0.10	<0.10	4.7	<0.10
		4/9/2009	82	<0.10	<0.10	<0.10	<0.10	---	<0.10	<0.10	<0.10	<0.10	<0.10	1	12	<0.10	<0.10	6	<0.10
		7/14/2010	91	<0.050UJ	<0.050UJ	<0.050UJ	<0.050UJ	---	<0.050UJ	<0.050UJ	<0.050UJ	<0.050UJ	<0.050UJ	0.39J	6.3J	<0.050UJ	0.13J	5.8J	0.053J
OB-19-DO	1/13/2009	64	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	8.7	17	<0.20	<0.20	2.3	<0.20	
	4/9/2009	57	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	8.1	17	<0.20	<0.20	2.1	<0.20	
	7/14/2010	64	<0.020UJ	<0.020UJ	<0.020UJ	<0.020UJ	---	<0.020UJ	<0.020UJ	<0.020UJ	<0.020UJ	<0.020UJ	0.52J	2.6J	<0.020UJ	0.10J	1.4J	0.075J	
	10/13/2010	57	<0.020	<0.020	<0.020	<0.020	---	<0.020	<0.020	<0.020	<0.020	<0.020	0.25	0.94	<0.020	0.085	1.9D	0.058	
	1/5/2011	64	<0.040	<0.040	<0.040	<0.040	---	<0.040	<0.040	<0.040	<0.040	<0.040	0.87	3.2	<0.040	0.1	1.5	0.064	
	4/4/2011	57	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.46	1.8	<0.020	0.066J	1.4	0.051	
	7/28/2011	57	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.74	2.8	<0.040	0.11	1.7	0.061	
	10/26/2011	64	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.72	3.2D	<0.020	0.079	1.3	0.053	
	1/7/2012	56.5	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.82	3.1	<0.040	0.094	1.5	0.066	
	4/4/2012	57	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.8	3.1	<0.040	0.1	1.5	0.066	
	11/26/2012	64	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	1.2D	2.4D	<0.040	0.086	4.1	0.07	
4/15/2013	57	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	0.83J	3.8	<0.050	0.097	1.3	0.063		

Table 3  
Water Quality Data - VOC Results  
2009 to Present  
Former Varian Facility Site  
150 Sohier Road, Beverly, Massachusetts

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)	
OB-19-DO (cont.)	10/23/2013	64	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.64	2.4	<0.040	0.044	0.8	0.051	
	4/16/2014	56	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.41	2	<0.040	0.061J	0.83	0.057	
OB-19-S	4/3/2009	34	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/20/2010	34	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/5/2011	32.7	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/5/2012	32	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/15/2013	32	<0.0020	<0.0020	<0.0020	<0.0020	0.012	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/21/2014	32	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	0.014	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020		
OB-20-BR	4/6/2009	95	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	10/27/2009	95	<0.0010	0.0014	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/28/2010	100	<0.0010	0.0014	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	10/13/2010	96	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0027	<0.0020	<0.0020	0.014	<0.0020	
	4/6/2011	95	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.056	<0.0020	<0.0020	0.29D	<0.0020	
	10/26/2011	97	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0031	0.13	<0.0020	0.0024	0.47D	0.002
	4/6/2012	94.75	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.024	<0.0040	<0.0040	0.19	<0.0040	
	4/15/2013	93.5	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.11	<0.0040	0.0058	0.89D	0.011	
	4/21/2014	94	<0.0020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.1	<0.020	<0.020	0.98	<0.020	
	4/6/2009	75	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.031	<0.0050	0.0075	0.42	<0.0050	
10/27/2009	75	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0058	0.076	<0.0025	<0.0025	0.25	<0.0025	
4/23/2010	77	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	0.012	<0.0050	<0.0050	0.34	<0.0050	
10/13/2010	75	<0.0040	<0.0040	<0.0040	<0.0040	---	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.014	<0.0040	0.005	0.45D	<0.0040		
4/6/2011	75	<0.0020	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0036	0.023	<0.0020	<0.0020	0.19	<0.0020	
10/26/2011	75	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.012	<0.0050	0.027	0.47	<0.0050		
4/6/2012	74.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/15/2013	73	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0079	<0.0020	0.013	0.30D	<0.0020	
4/21/2014	74	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.022	0.19	<0.0040	
OB-20-S	4/6/2009	11	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	10/27/2009	11	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/23/2010	12	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	10/13/2010	11	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/6/2011	11	<0.0020	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/26/2011	12	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/6/2012	10.9	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	11/12/2012	12	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/15/2013	11	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/23/2013	12	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.003	<0.0020UJ	<0.0020	0.0029	<0.0020
	4/21/2014	10	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	OB-21-BR	4/6/2009	97	<0.0050	0.008	0.0087	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.037	0.16	<0.0050	0.012	0.74	<0.0050
		10/27/2009	97	<0.010	<0.010	0.012	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.043	0.12	<0.010	0.014	1	<0.010
4/28/2010		97	<0.010	<0.010	0.013	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.063	0.45	<0.010	0.014	1.1	<0.010	
10/13/2010		97	<0.020	<0.020	<0.020	<0.020	---	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.13	<0.020	0.03	1.6	<0.020	
4/6/2011		98.2	<0.0040	0.0092	0.011	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.013	0.14	<0.0040	0.017	1.5D	0.0043	
10/26/2011		97	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.033	0.061	<0.020	0.022	1.5	<0.020	
4/6/2012		99.5	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.49	<0.010	
4/15/2013		96	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.024	<0.0050	<0.0050	0.31	<0.0050	
4/21/2014		98	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.027	0.86	<0.010	
OB-21-DO		4/6/2009	79	<0.0050	0.0069	0.0074	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.21	0.71	<0.0050	<0.0050	0.27	<0.0050
	10/27/2009	79	<0.0050	0.0097	0.01	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.17	0.61	<0.0050	<0.0050	0.42	<0.0050	
	4/28/2010	79	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.32	1.1	<0.010	<0.010	0.49	<0.010	
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Table 3  
Water Quality Data - VOC Results  
2009 to Present  
Former Varian Facility Site  
150 Sohier Road, Beverly, Massachusetts

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)	
OB-21-DO (cont.)	4/15/2013	78.6	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.31	1.1	<0.020	<0.020	0.33	<0.020	
	4/21/2014	78	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.26	0.97	<0.020	<0.020	0.32	<0.020	
OB-22-DO	4/6/2009	56	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.38	0.58	<0.0050	<0.0050	0.15	<0.0050	
	10/27/2009	57	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.066	0.25	<0.0025	0.0039	0.28	<0.0025	
	10/12/2010	56	<0.0040	<0.0040	<0.0040	<0.0040	---	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.023	0.054	<0.0040	0.032	0.40D	<0.0040	
OB-23-BR	10/25/2011	55	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0069	<0.0020	<0.0020	0.031	<0.0020	
	4/1/2009	95	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.01	
	4/21/2010	97	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001	<0.0010	0.071	0.065	<0.0010	
	4/4/2011	83	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.062J	0.013	<0.0020	
	4/5/2012	83.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.1	0.07	<0.0020	
	4/12/2013	83	0.0069	<0.0020	<0.0020	<0.0020	<0.010	0.0047J	<0.0020	0.0064	<0.0020	<0.0020	<0.0020	0.077	<0.0020	0.038J	0.0076	<0.0020	
	4/7/2014	80	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
OB-24-S	4/3/2009	NA	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	0.0018	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/21/2010	NA	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	4/5/2011	2	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/5/2012	NA	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/12/2013	NA	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
OB-25-BR	4/10/2014	2	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/3/2009	95	<0.50	<0.50	<0.50	<0.50	---	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	<0.50	18	64	<0.50	
	4/20/2010	99	<0.50	<0.50	<0.50	<0.50	---	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	3.8	<0.50	21	56	
	7/14/2010	99.5	<0.50UJ	<0.50UJ	<0.50UJ	<0.50UJ	---	<0.50UJ	<0.50UJ	<0.50UJ	<0.50UJ	<0.50UJ	<0.50UJ	2.9J	<0.50UJ	20J	65J	<0.50UJ	
	10/13/2010	97	<0.50	<0.50	<0.50	<0.50	---	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.7	<0.50	21	67D	<0.50	
	4/14/2011	101	<0.0020	0.023	<0.0020	<0.0020	0.018	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/26/2011	99.5	<0.40	<0.40	<0.40	<0.40	<2.0	<0.40	<0.40	<0.40	<0.40	<0.40	1.9	8.8	<0.40	4	22	<0.40	
	4/5/2012	90	<0.0020	0.037	0.11	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.69D	7.8D	<0.0020	6.8D	30D	0.14
	11/26/2012	99	<0.0020	0.0026	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	0.014	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/15/2013	95	<0.0020	0.019	<0.0020	<0.0020	0.015	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/23/2013	99	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	0.11	1.1	<0.050	0.3	4.4	<0.050	
	4/16/2014	86	<0.050	<0.050	0.064	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	0.32	4.5	<0.050	5.6DJ	25D	0.056	
OB-25-DO	7/14/2010	69	<0.10UJ	<0.10UJ	<0.10UJ	<0.10UJ	---	<0.10UJ	<0.10UJ	<0.10UJ	<0.10UJ	<0.10UJ	1.0J	13J	<0.10UJ	<0.10UJ	1.3J	<0.10UJ	
	11/8/2013	69	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	0.46	8.4	<0.10	<0.10	0.21	<0.10	
	1/21/2014	50.5	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	0.46	15D	<0.10	<0.10	0.59	<0.10	
	4/9/2014	46	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	0.47	17	<0.20	<0.20	0.48	<0.20	
	8/6/2014	65	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	0.56	16	<0.20	<0.20	0.45	<0.20	
OB-26-BR	4/3/2009	93	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.019	0.48	<0.0050	<0.0050	0.19	<0.0050	
	4/20/2010	95	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0016	<0.0010	<0.0010	<0.0010	<0.0010	
	4/4/2011	93.1	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020UJ	<0.0020	<0.0020	
	4/17/2012	95	<0.0020	<0.0020	<0.0020	<0.0020	0.011	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0039	0.031	<0.0020	0.011	0.28D	<0.0020	
	4/15/2013	90	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0082	<0.0020	<0.0020	0.021	<0.0020	
	4/16/2014	90	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0077	0.24D	<0.0020	0.0068J	0.13	<0.0020	
OB-26-DO	10/23/2013	65	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	1.3	5	<0.050	<0.050	0.27	<0.050	
	4/16/2014	59	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	1.8	6.6D	<0.050	<0.050	0.74	<0.050	
OB-27-BR	4/3/2009	86	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	10	26	<0.20	<0.20	7.7	<0.20	
	10/27/2009	78.5	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	10	24	<0.20	<0.20	7.6	<0.20	
	4/22/2010	86	<0.0025	0.028	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.19	0.048	<0.0025	<0.0025	0.005	<0.0025	
	10/14/2010	86	<0.0020	0.045	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/14/2011	81	<0.0020	0.017	<0.0020	<0.0020	0.01	<0.0020	<0.0020	0.0056	<0.0020	<0.0020	0.0026	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/28/2011	86	<0.0050	0.036	0.05	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	7.4D	22D	<0.0050	0.03	4.9D	0.012	
	4/6/2012	85	<0.0020	0.033	0.054	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	3.2D	20D	<0.0020	0.026	4.7D	0.028	
	11/26/2012	86	<0.0020	0.037	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/15/2013	85	<0.0020	0.047	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.071J	<0.0020</					

**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)	
OB-27-DO	4/3/2009	61	<0.0010	0.0013	0.0029	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0028	<0.0010	<0.0010	<0.0010	<0.0010	
OB-28-BR	4/6/2009	93	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.024	<0.0010	<0.0010	0.0011	<0.0010	
	4/20/2010	93	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
	5/27/2011	122	<0.0020	<0.0020	<0.0020	<0.0020	0.022	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/5/2012	89	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/15/2013	84	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.082	<0.0020	<0.0020	0.0059	<0.0020	
	4/16/2014	89	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0042	0.98D	<0.0020	<0.0020	0.17	0.0026
OB-30-DO	4/6/2009	68	<0.0020	0.18	0.18	0.0025	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0025	0.18	<0.0020	<0.0020	0.0089	<0.0020
OB-32-DO	4/3/2009	60	2.4	<0.020	<0.020	<0.020	---	2	<0.020	0.85	<0.020	<0.020	0.16	0.03	<0.020	<0.020	<0.020	<0.020	
	10/27/2009	60	1.5	<0.010	<0.010	<0.010	---	1.4	<0.010	0.53	<0.010	<0.010	0.059	<0.010	<0.010	<0.010	<0.010	<0.010	
	11/23/2009	60	2	<0.020	<0.020	<0.020	---	1.7	<0.020	0.51	<0.020	<0.020	0.3	<0.020	<0.020	<0.020	<0.020	<0.020	
	4/20/2010	60	1.5	<0.010	<0.010	<0.010	---	1.3	<0.010	0.36	<0.010	<0.010	0.046	<0.010	<0.010	<0.010	<0.010	<0.010	
	10/14/2010	60	1.4D	<0.0020	<0.0020	<0.0020	---	1.2D	<0.0020	0.28D	<0.0020	0.0025	0.0021	<0.0020	0.004	<0.0020	<0.0020	<0.0020	
	4/14/2011	52	0.57D	<0.0040	<0.0040	<0.0040	<0.020	0.50D	<0.0040	0.1	<0.0040	<0.0040	0.079	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	
	10/28/2011	60	0.43	<0.0050	<0.0050	<0.0050	<0.025	0.45	<0.0050	0.079	<0.0050	<0.0050	0.0068	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
	4/5/2012	48	0.19	<0.0020	<0.0020	<0.0020	<0.010	0.19	<0.0020	0.041	<0.0020	<0.0020	0.042	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	12/18/2012	60	0.097	<0.00020	<0.00057	<0.00036	0.012	0.12	<0.00029	0.026	<0.00024	<0.00021	<0.00030	<0.00022	<0.00020	<0.00032	<0.00030	<0.00033	
	4/18/2013	60	0.062	<0.0020	<0.0020	<0.0020	<0.010	0.067	<0.0020	0.019	<0.0020	<0.0020	0.014	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/24/2013	60	0.043	<0.0020	<0.0020	<0.0020	<0.010	0.057	<0.0020	0.015	<0.0020	<0.0020	0.055	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	4/21/2014	57	0.026	<0.0020	<0.0020	<0.0020	<0.010	0.037	<0.0020	0.014	<0.0020	<0.0020	0.063	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	OB-33-DO	4/6/2009	55	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
OB-34-DO	4/6/2009	63	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	0.0027	<0.0010	<0.0010	0.059	0.0022	<0.0010	<0.0010	<0.0010	<0.0010	
	10/27/2009	62	<0.10	<0.10	<0.10	<0.10	---	<0.10	<0.10	<0.10	<0.10	<0.10	1.6	8.6	<0.10	<0.10	0.65	<0.10	
	4/20/2010	63	<0.10	<0.10	<0.10	<0.10	---	<0.10	<0.10	<0.10	<0.10	<0.10	1.6	10	<0.10	<0.10	1.1	<0.10	
	10/14/2010	63	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	0.0093	<0.0050	<0.0050	0.3	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
	4/14/2011	61	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.9	0.37	<0.010	<0.010	0.011	<0.010	
	10/28/2011	63	<0.0050	<0.0050	0.006	<0.0050	<0.025	<0.0050	<0.0050	0.0058	<0.0050	<0.0050	1.3D	11D	<0.0050	<0.0050	0.95D	<0.0050	
	4/5/2012	62	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	1.2	8.5	<0.10	<0.10	0.77	<0.10	
	11/27/2012	63	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	1.5	9.5D	<0.10	<0.10	0.83	<0.10	
	4/17/2013	58.2	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	1.2	7.6	<0.10	<0.10	0.58	<0.10	
	10/24/2013	63	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	1.3	10	<0.10	<0.10	0.78	<0.10	
	OB-35-DO	4/9/2009	57	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	19	6.2	<0.20	<0.20	1.7	<0.20
10/28/2009		57	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	22	6.9	<0.20	<0.20	1.6	<0.20	
4/22/2010		62	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	22	7.5	<0.20	<0.20	1.6	<0.20	
10/14/2010		49	<0.40	<0.40	<0.40	<0.40	---	<0.40	<0.40	<0.40	<0.40	<0.40	34	7.7	<0.40	<0.40	1.6	<0.40	
4/7/2011		48.7	<0.50UJ	<0.50UJ	<0.50UJ	<0.50UJ	<2.5UJ	<0.50UJ	<0.50UJ	<0.50UJ	<0.50UJ	<0.50UJ	32J	7.7J	<0.50UJ	<0.50UJ	1.6J	<0.50UJ	
10/27/2011		62	<0.40	<0.40	<0.40	<0.40	<2.0	<0.40	<0.40	<0.40	<0.40	<0.40	29	5	<0.40	<0.40	0.95	<0.40	
4/6/2012		48	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	19	5.4	<0.20	<0.20	0.79	<0.20	
11/27/2012		62	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	32D	4.8	<0.20	<0.20	0.78	<0.20	
4/15/2013		61	<0.40	<0.40	<0.40	<0.40	<2.0	<0.40	<0.40	<0.40	<0.40	<0.40	47D	8.6	<0.40	0.41	1.4	<0.40	
10/24/2013		56	<0.0020	0.009	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.007	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
4/21/2014		47	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	33D	5.2	<0.20	<0.20	0.94	<0.20	
OB-36-DO		1/14/2009	62	<0.10	<0.10	<0.10	<0.10	---	<0.10	<0.10	<0.10	<0.10	<0.10	4	8.2	<0.10	<0.10	<0.10	<0.10
		4/9/2009	54	<0.050	<0.050	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	3.9	6.3	<0.050	<0.050	<0.050	<0.050
	10/26/2009	55	<0.25	<0.25	<0.25	<0.25	---	<0.25	<0.25	<0.25	<0.25	<0.25	7.9	29	<0.25	<0.25	<0.25	<0.25	
	4/22/2010	61	<0.050	<0.050	<0.050	<0.050	---	<0.050	<0.050	<0.050	<0.050	<0.050	4.4	5.8	<0.050	<0.050	<0.050	<0.050	
	10/13/2010	54	<0.20	<0.20	<0.20	<0.20	---	<0.20	<0.20	<0.20	<0.20	<0.20	6.4	15	<0.20	<0.20	<0.20	<0.20	
	4/7/2011	53.9	<0.20UJ	<0.20UJ	<0.20UJ	<0.20UJ	<1.0UJ	<0.20UJ	<0.20UJ	<0.20UJ	<0.20UJ	<0.20UJ	7.0J	9.8J	<0.20UJ	<0.20UJ	0.24J	<0.20UJ	
	10/28/2011	61	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	6.6	5.2	<0.10	<0.10	<0.10	<0.10	
	4/6/2012	41	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	12D	10	<0.10	<0.10	<0.10	<0.10	
	11/27/2012	61	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	10	9.1	<0.20	<0.20	<0.20	<0.20	
	4/15/2013	46	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20	<0.20	8.1D	48D	<0.20	<0.20	<0.20	<0.20	
	10/24/2013	51.5	0.02	0.013	<0.0020	<0.0020	0.021	<0.0											

Table 3  
Water Quality Data - VOC Results  
2009 to Present  
Former Varian Facility Site  
150 Sohier Road, Beverly, Massachusetts

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)	
OB-37-DO (cont.)	10/26/2009	49	<0.40	<0.40	<0.40	<0.40	---	<0.40	<0.40	<0.40	<0.40	<0.40	2.3	43	<0.40	<0.40	<0.40	<0.40	
	4/22/2010	61	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.36	0.98	<0.010	<0.010	<0.010	<0.010	
	10/13/2010	61	<0.0050	<0.0050	<0.0050	<0.0050	---	0.007	<0.0050	0.019	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
	4/7/2011	35	0.0031J	<0.0020UJ	<0.0020UJ	<0.0020UJ	0.016J	<0.0020UJ	<0.0020UJ	0.0093J	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	<0.0020UJ	
	10/28/2011	61	0.0084	<0.0020	<0.0020	<0.0020	0.12	0.0033	<0.0020	0.007	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/6/2012	46	<0.0020J	<0.0020J	<0.0020J	<0.0020J	0.014J	<0.0020J	<0.0020J	<0.0020J	<0.0020J	<0.0020J	<0.0020J	0.0028J	<0.0020J	<0.0020J	<0.0020J	<0.0020J	<0.0020J
	11/27/2012	61	0.039	0.01	<0.0020	<0.0020	0.02	<0.0020	<0.0020	0.0045	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/15/2013	53.7	0.05	0.018	<0.0020	<0.0020	0.025	<0.0020	<0.0020	0.0048	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	10/24/2013	59	0.0069	<0.0020	<0.0020	<0.0020	0.018	<0.0020	<0.0020	0.0084	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/21/2014	46	<0.0020	<0.0020	<0.0020	<0.0020	0.016	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.066	0.35D	<0.0020	<0.0020	<0.0020	<0.0020
	OB-38-DO	4/9/2009	47	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.74	0.55	<0.010	<0.010	0.13	<0.010
		10/28/2009	47	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.25	0.36	<0.010	<0.010	1.1	<0.010
		4/21/2010	54	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.25	0.27	<0.0025	<0.0025	0.056	<0.0025
10/14/2010		45.5	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.43	0.32	<0.0050	0.0064	0.34	<0.0050	
4/5/2011		45	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.27	0.22	<0.0040	<0.0040	0.037	<0.0040	
10/26/2011		45	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.52D	0.39	<0.0050	0.0052	0.28	0.0057	
4/6/2012		44.5	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.47	0.46	<0.0050	<0.0050	0.15	0.0067	
11/27/2012		54	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.24	0.19	<0.0050	<0.0050	0.13	<0.0050	
4/15/2013		42	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.45	0.62D	<0.0050	0.0061	0.12	0.0075	
10/23/2013		46	<0.0050	<0.0050	<0.0050	<0.0050	<0.025	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0094	0.014	<0.0050	<0.0050	0.54D	0.0074	
4/11/2014		44	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.057	0.099	<0.0020	<0.0020	0.045	0.0034	
OB-39-DO		4/9/2009	53	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0076	<0.0010	<0.0010	<0.0010	<0.0010
OB-40-DO		4/9/2009	68	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
OB-41-S	4/5/2011	13	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.05	0.26	<0.0040	<0.0040	0.081	<0.0040	
	10/25/2011	13	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.03	0.12	<0.0020	<0.0020	0.04	<0.0020	
	4/5/2012	13.2	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.017	0.069	<0.0020	<0.0020	0.028	<0.0020	
	11/12/2012	14	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.022	0.082	<0.0020	<0.0020	0.034	<0.0020	
	4/12/2013	13.3	<0.0020	<0.0020	0.0024	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.071	0.29D	<0.0020	<0.0020	0.08	<0.0020	
	10/23/2013	13.3	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.021	0.089	<0.0020UJ	<0.0020	0.035	<0.0020	
4/8/2014	13	<0.0020	<0.0020	0.0021	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.064	0.28D	<0.0020	<0.0020	0.082	<0.0020		
OB-42-S	4/5/2011	13	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.1	2.7	<0.040	<0.040	1.2	<0.040	
	10/24/2011	13	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	0.096	3	<0.050	<0.050	1	<0.050	
	4/4/2012	13.5	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.078	2.4	<0.040	<0.040	0.94	<0.040	
	11/12/2012	14	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.11	2.6	<0.040	<0.040	0.79	<0.040	
	4/12/2013	13.6	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.13J	3.5	<0.040	<0.040	1.4	<0.040	
	10/23/2013	12.2	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.081	2.2	<0.040UJ	<0.040	0.6	<0.040	
	4/9/2014	14	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.082	2.4	<0.040	<0.040	0.96	<0.040	
OB-43-S	10/24/2011	16	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0052	0.007	<0.0020	<0.0020	<0.0020	<0.0020	
	4/4/2012	15	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	11/12/2012	14	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0021	0.003	<0.0020	<0.0020	<0.0020	<0.0020	
	4/12/2013	16	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0024	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
	10/23/2013	16	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020UJ	<0.0020	<0.0020	<0.0020	
	4/8/2014	15	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0037	0.004	<0.0020	<0.0020	<0.0020	<0.0020	
OB-44-S	1/7/2014	NA	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	47	24	<1.0	<1.0	<1.0	<1.0	
	4/21/2014	17	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.2	1.5	<1.0	<1.0	59	<1.0	
OB-45-DO	4/15/2014	45	<0.0050	<0.0050	<0.0050	<0.0050	0.035	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0059	0.27	<0.0050	<0.0050	0.37	<0.0050	
OB-45-S	4/15/2014	13	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	
P-05R	4/27/2009	NA	<0.0010J	<0.0010J	<0.0010J	<0.0010J	---	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	
P-09R	4/6/2009	4.5	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.016	<0.0010	
	10/27/2009	4.5	<0.0010																

Table 3  
Water Quality Data - VOC Results  
2009 to Present  
Former Varian Facility Site  
150 Sohier Road, Beverly, Massachusetts

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2-DCE (mg/l)	trans-1,2-DCE (mg/l)
P-09R (cont.)	10/13/2010	4.5	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/6/2011	3.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0021	<0.0020
	10/24/2011	4.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	11/12/2012	5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	5/2/2013	3.8	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	10/23/2013	4.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020UJ	<0.0020	<0.0020	<0.0020
	4/29/2014	4	<0.0020	<0.0020	<0.0020	<0.0020	0.074	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
P-11R	4/27/2009	NA	<0.0010J	<0.0010J	<0.0010J	<0.0010J	---	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J	<0.0010J
	4/22/2010	9	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	4/5/2011	8	<0.0020	<0.0020	<0.0020	<0.0020	0.01	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/5/2012	8.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/12/2013	8.75	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/21/2014	9	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
	4/6/2009	10	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0037	0.025	<0.0020	<0.0020	0.28
P-19A	10/27/2009	10	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0067	0.031	<0.0020	<0.0020	0.28	<0.0020
	4/22/2010	10	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0019	<0.0010	<0.0010	0.033	<0.0010
	10/13/2010	10	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0065	0.037	<0.0020	<0.0020	0.47D	<0.0020
	4/6/2011	9	<0.0020	<0.0020	<0.0020	<0.0020	0.01	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0031	0.012	<0.0020	<0.0020	0.12	<0.0020
	10/24/2011	10	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0047	0.021	<0.0040	<0.0040	0.2	<0.0040
	4/6/2012	9.4	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0054	0.03	<0.0040	<0.0040	0.29	<0.0040
	11/12/2012	10	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0076	0.045	<0.0040	<0.0040	0.39	<0.0040
	4/12/2013	9.5	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.006	0.031	<0.0020	<0.0020	0.16	<0.0020
	10/23/2013	10	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020UJ	<0.0020	0.0063	<0.0020
	4/21/2014	10	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0048	0.027	<0.0040	<0.0040	0.2	<0.0040
	P-20R	4/6/2009	10	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0024	0.014	<0.0010	<0.0010	0.0012
4/22/2010		11	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
4/6/2011		10	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
4/6/2012		10	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
5/2/2013		10	<0.0020	<0.0020	<0.0020	<0.0020	0.012	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
4/21/2014		10	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0038	0.009	<0.0020	<0.0020	<0.0020
4/9/2009		39	0.32	0.017	<0.0025	<0.0025	---	0.027	<0.0025	0.21	<0.0025	<0.0025	0.051	0.1	<0.0025	<0.0025	0.12	<0.0025
RW-01_MW-18	1/20/2014	37.1	<0.0050	0.014	0.025	<0.0050	<0.025	<0.0050	<0.0050	0.011	<0.0050	<0.0050	0.53D	1.1D	<0.0050	0.80D	8.7D	0.11
	4/9/2014	37	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.48	4.3	<0.050
	8/6/2014	36	<0.050	<0.050	<0.050	<0.050	<0.25	<0.050	<0.050	<0.050	<0.050	<0.050	0.77	0.45	<0.050	0.49	7.7D	0.078
	7/14/2009	70	0.047	<0.025	<0.025	<0.025	---	<0.025	<0.025	<0.025	<0.025	<0.025	0.32	0.34	<0.025	2.6	2.4	<0.025
	7/14/2009	15	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.26	0.14	<0.010	0.56	0.85	<0.010
RW-03	10/26/2009	15	0.068	0.0071	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.052	0.025	<0.0050	0.67D	0.058	<0.0050
	10/26/2009	56	0.036	0.0069	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.055	0.093	<0.0050	0.62	0.14	<0.0050
	1/28/2010	55	0.014	0.0028	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.028	0.035	<0.0020	0.14	0.2	<0.0020
	1/28/2010	15	0.01	0.0026	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.02	0.016	<0.0020	0.14	0.19	<0.0020
	4/22/2010	55	0.022	<0.020	<0.020	<0.020	---	<0.020	<0.020	<0.020	<0.020	<0.020	0.46	0.6	<0.020	0.36	2.2	<0.020
	4/28/2010	15	<0.025	<0.025	<0.025	<0.025	---	<0.025	<0.025	<0.025	<0.025	<0.025	0.92	0.84	<0.025	0.56	3.5	<0.025
	7/14/2010	69	0.032J	<0.025UJ	<0.025UJ	<0.025UJ	---	<0.025UJ	<0.025UJ	<0.025UJ	<0.025UJ	<0.025UJ	0.62J	1.1J	<0.025UJ	3.2J	3.7J	<0.025UJ
	10/12/2010	55	0.78	<0.10	<0.10	<0.10	---	<0.10	<0.10	<0.10	<0.10	<0.10	0.59	1.1	<0.10	5.2	5.4	<0.10
	1/4/2011	55	0.29	<0.020	<0.020	<0.020	---	<0.020	<0.020	<0.020	<0.020	<0.020	0.098	0.2	<0.020	0.51	1.1	<0.020
	4/5/2011	54.7	0.01	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.079	0.15	<0.0020	0.0022	0.11	<0.0020
	RW-22	4/3/2009	144	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0086	0.12	<0.0025	<0.0025	0.36
4/20/2010		144	<0.0050	<0.0050	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0063	0.094	<0.0050	<0.0050	0.38	<0.0050
4/4/2011		105	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.07	<0.0040	<0.0040UJ	0.36	<0.0040
4/5/2012		62	<0.0040	<0.0040	<0.0040	<0.0040	<0.020	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0061					





**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

SITE ID	DATE	DEPTH	1,1,1-TCA (mg/l)	1,1-DCA (mg/l)	1,1-DCE (mg/l)	1,2-DCA (mg/l)	Acetone (mg/l)	Carbon tetra chloride (mg/l)	Chloro benzene (mg/l)	Chloro form (mg/l)	Chloro ethane (mg/l)	Chloro methane (mg/l)	PCE (mg/l)	TCE (mg/l)	Trichloro fluoro methane (mg/l)	Vinyl chloride (mg/l)	cis-1,2- DCE (mg/l)	trans-1,2- DCE (mg/l)
UNNAMED_STREAM	1/14/2009	NA	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.016	0.031	<0.010	0.18	1	<0.010
	4/9/2009	NA	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.9	0.43	<0.010	0.081	0.82	<0.010
	7/14/2009	NA	<0.025	<0.025	0.033	<0.025	---	<0.025	<0.025	<0.025	<0.025	<0.025	1.7	0.95	<0.025	0.48	3.4	<0.025
	10/27/2009	NA	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.0027	0.015	<0.0025	0.1	0.31	<0.0025
	1/28/2010	NA	<0.020	<0.020	<0.020	<0.020	---	<0.020	<0.020	<0.020	<0.020	<0.020	1.4	1.2	<0.020	0.22	1.9	<0.020
	4/22/2010	NA	<0.010	<0.010	<0.010	<0.010	---	<0.010	<0.010	<0.010	<0.010	<0.010	0.29	0.17	<0.010	0.14	1	<0.010
	10/12/2010	NA	<0.0020	<0.0020	<0.0020	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.005	0.0053	<0.0020	<0.0020	0.016	<0.0020
	1/4/2011	NA	<0.0020	<0.0020	0.011	<0.0020	---	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.51D	0.24D	<0.0020	0.20D	1.4D	0.0094
	4/5/2011	NA	0.0022	<0.0020	0.015	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	1.1D	0.86D	<0.0020	0.083	2.3D	0.012
	10/25/2011	NA	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.91	0.59	<0.020	0.16	1.4	<0.020
	1/17/2012	NA	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.98	0.61	<0.010	0.037	0.48	<0.010
	4/3/2012	NA	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	1.2	0.73	<0.020	0.18	2	<0.020
	8/21/2012	NA	<0.010	<0.010	<0.010	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	0.043	0.071	<0.010	0.11	0.56	<0.010
	2/6/2013	NA	<0.010	<0.010	0.019	<0.010	<0.050	<0.010	<0.010	<0.010	<0.010	<0.010	1.7D	1.5D	<0.010	0.18	2.2D	0.012
	4/11/2013	NA	<0.040	<0.040	<0.040	<0.040	<0.20	<0.040	<0.040	<0.040	<0.040	<0.040	0.065	0.071	<0.040	0.14	2.9	<0.040
	4/10/2014	NA	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0026	0.003	<0.0020	<0.0020	0.012	<0.0020
	W-1	10/26/2009	9	<0.0025	<0.0025	<0.0025	<0.0025	---	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	0.013	0.21	<0.0025	<0.0025	0.048
4/21/2010		9	<0.0010	<0.0010	<0.0010	<0.0010	---	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0065	0.11	<0.0010	<0.0010	0.055	<0.0010
10/14/2010		9	<0.0040	<0.0040	<0.0040	<0.0040	---	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0066	0.23	<0.0040	<0.0040	0.028	<0.0040
4/5/2011		11	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0072	0.095	<0.0020	<0.0020	0.056	<0.0020
10/24/2011		9	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0066	0.0066	<0.0020	<0.0020	<0.0020	<0.0020
4/5/2012		11	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.039	1.0D	<0.0020	<0.0020	0.49D	0.0054
11/12/2012		9	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0067	0.17	<0.0020	<0.0020	0.025	<0.0020
5/2/2013		10.8	<0.0020	<0.0020	0.0021	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020UJ	<0.0020	0.055	1.3D	<0.0020	<0.0020	0.48D	0.007
4/9/2014	10	<0.020	<0.020	<0.020	<0.020	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	0.033	0.98	<0.020	<0.020	0.42	<0.020	

**Table 3**  
**Water Quality Data - VOC Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road, Beverly, Massachusetts**

**Notes:**

Analytical results presented in milligrams per liter (mg/l).

Analytical results are reported by the laboratory in micrograms per liter (ug/l). Results are presented without changing the number of significant figures reported by the laboratory.

Bedrock wells BR-1 through BR-8, CL8-BR and CL9-BR each have a multilevel groundwater monitoring system present within the bedrock portion of the well. Zone 1 refers to the deepest sample interval, Zone 2 refers to the middle sampling zone and Zone 3 refers to the sampling zone closest to the ground surface.

1,1,2-Trichloroethane, 1,2-dichloropropane, dichloromethane and dichlorodifluoromethane are compounds which have been detected but are not included on the table.

Sample depths are in feet below grade. A sample depth of NA indicates that the sample was not collected at a discrete depth.

OB-32-DO(PURGE) = Duplicate sample collected by purge and grab method.

DCA - Dichloroethane

DCE - Dichloroethene

PCE - Tetrachloroethene

TCA - Trichloroethane

TCE - Trichloroethene

NA = discreet sample depth not applicable.

< = Not Detected at indicated detection limit

D - Indicates that the result is reported from a secondary dilute sample.

E - Estimated concentration

J - Estimated concentration

L - Sample analyzed outside of holding time.

N - Matrix interference

U - Determined to be non-detect through expert validation protocol.

Z - Sample results switched in May 7, 2004 status report.

**TABLE 4**  
**Water Quality Data - Chloride, Dissolved Iron and Dissolved Manganese Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

<b>SITE_ID</b>	<b>DATE</b>	<b>Chloride Total (mg/l)</b>	<b>Iron Dissolved (mg/l)</b>	<b>Manganese Dissolved (mg/l)</b>
AP-12-BR	4/20/2010	1200	25	26000
	10/14/2010	33100	ND(3.0)	24000
	4/14/2011	10400	8.7	12000
	10/28/2011	225	ND(5.0)	3900
	4/6/2012	890	ND(2.5)	9000
	11/27/2012	420	ND(1.0)	3300
	4/18/2013	192	ND(0.50)	1400
	10/23/2013	137	ND(0.50)	230
AP-12-DO	4/10/2014	75.5	0.9	0.56
	4/20/2010	34.4	0.47	5.4
	11/27/2012	538	9.2	3400
	4/18/2013	156	ND(0.50)	720
	10/23/2013	109	ND(0.10)	36
AP-13-DO	4/10/2014	124	ND(<0.10)	0.32
	1/14/2009	150	0.26	9.3
	4/2/2009	273	0.2	13
AP-19	8/14/2014	---	ND(<0.10)	25.3
	10/27/2009	4.1	ND(0.10)	ND(0.010)
	4/21/2010	18.7	ND(0.10)	0.095
	10/14/2010	17.2	ND(0.10)	0.029
	4/6/2011	24.8	ND(0.10)	0.061
	10/27/2011	ND(1.0)	ND(0.10)	0.012
	4/5/2012	29	ND(0.10)	0.12
	11/13/2012	20.4	ND(0.10)	ND(0.010)
	5/2/2013	28.2	ND(0.10)	0.021
	10/24/2013	26.3	0.12	1.0
AP-20	4/11/2014	25.4	ND(<0.10)	1.1
	10/27/2009	11.1	ND(0.10)	6.9
	4/21/2010	31.3	ND(0.10)	0.011
	10/14/2010	29.4	ND(0.10)	0.012
	4/6/2011	15.4	ND(0.10)	ND(0.010)
	10/27/2011	2	ND(0.10)	0.028
	4/5/2012	86	ND(0.10)	23
	11/13/2012	68.2	0.39	8.5
AP-21	5/2/2013	45	ND(0.10)	2.1
	10/24/2013	109	ND(0.10)	0.17
	4/11/2014	14.1	ND(<0.10)	4.0
	11/23/2009	850	8.5	14000
	4/21/2010	900	10	15000
	10/14/2010	1690	ND(2.0)	9000
	4/14/2011	450	3.2	3400
	10/27/2011	190	ND(2.5)	1100
	4/5/2012	286	ND(1.0)	970
	11/13/2012	271	ND(0.10)	640
AP-22	5/2/2013	275	ND(0.10)	190
	10/24/2013	323	ND(0.10)	0.24
	4/11/2014	227	ND(<0.10)	0.51
	10/27/2009	378	ND(0.50)	3800
	4/21/2010	489	ND(1.0)	73
	10/14/2010	491	ND(1.0)	240
	4/14/2011	208	ND(0.10)	0.37
	10/27/2011	225	ND(2.5)	1200
AP-22	4/5/2012	1360	ND(2.0)	2000
	11/13/2012	794	ND(1.0)	4100
	4/17/2013	425	ND(0.10)	150

**TABLE 4**  
**Water Quality Data - Chloride, Dissolved Iron and Dissolved Manganese Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

SITE_ID	DATE	Chloride Total (mg/l)	Iron Dissolved (mg/l)	Manganese Dissolved (mg/l)
AP-22 (cont.)	10/24/2013	892	ND(0.50)	440
	4/11/2014	919	0.26	51
AP-23-DO	1/14/2009	43.6	1.7	6.4
	4/2/2009	60.7	3.2	19
	8/6/2014	---	0.57	7.6
AP-24-DO	1/14/2009	117	0.48	7.5
	4/2/2009	283	0.25	11
	8/6/2014	---	1.7	1.2
AP-25-DO	1/14/2009	34.9	0.28	0.24
	4/2/2009	61.1	ND(0.10)	0.11
AP-26-DO	11/26/2012	33.5	ND(0.10)	8.5
	4/15/2013	39.4	ND(0.10)	0.01
	10/23/2013	91.2	ND(0.10)	3.9
	4/16/2014	43	ND(<0.10)	0.81
AP-27-DO	4/9/2009	57.8	ND(0.10)	0.098
	10/28/2009	13.7	ND(0.10)	0.1
	4/21/2010	29.4	ND(0.10)	0.1
	10/14/2010	11.2	ND(0.10)	0.42
	4/7/2011	387J	ND(0.10)	0.046
	10/26/2011	140	ND(0.10)	2.8
	4/6/2012	450	ND(0.10)	0.053
	11/27/2012	624	ND(0.10)	9.1
	4/16/2013	79.6	ND(0.10)	0.073
	10/23/2013	50	ND(0.10)	0.095
4/11/2014	342	ND(<0.10)	0.19	
AP-30-DO	4/18/2013	3860	ND(0.50)	3500
AP-30R-DO	4/7/2011	1000J	6	7900
	11/7/2011	2730	ND(50)	20000
	4/17/2012	1070	ND(5.0)	6400
AP-31-DO	4/6/2011	3380J	2.5	2200
	11/7/2011	3240	ND(1.0)	780
	4/17/2012	2650	ND(0.10)	0.58
	4/18/2013	742	ND(0.10)	67
	10/24/2013	907	ND(0.10)	23
	4/16/2014	720	ND(<0.10)	0.86
AP-32-DO	4/7/2011	1440J	ND(1.0)	75
	11/7/2011	979	ND(0.10)	0.055
	4/17/2012	631	ND(0.10)	0.072
	4/18/2013	565	ND(0.10)	0.012
	10/24/2013	624	ND(0.10)	99
	4/16/2014	608	ND(<0.10)	110
AP-33-DO	8/6/2014	---	4.3	1.9
AP-34-DO	8/6/2014	---	0.89	9.1
AP-35-DO	8/6/2014	---	0.82	0.31
BR-5_ZONE3	4/11/2014	136	ND(<0.10)	3.1
BW-01	1/13/2009	86.1	2.1	2.3
	4/2/2009	67.3	3.8	3.2
BW-02	1/13/2009	87.2	8.2	2.3
	4/2/2009	97.8	6.4	2.4
BW-03	1/13/2009	80.8	13	5.6
	4/2/2009	91.3	18	8
BW-04	1/13/2009	96.5	9.5	3.8
	4/2/2009	95.1	10	3.2
BW-05	1/13/2009	205	20	4.7
	4/2/2009	130	27	4.9

**TABLE 4**  
**Water Quality Data - Chloride, Dissolved Iron and Dissolved Manganese Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

SITE_ID	DATE	Chloride Total (mg/l)	Iron Dissolved (mg/l)	Manganese Dissolved (mg/l)
BW-08	1/13/2009	124	18	5.3
	4/2/2009	104	27	7.9
BW-09	1/13/2009	131	20	7.1
	4/2/2009	174	41	11
CL03-DO	10/23/2013	302	ND(0.50)	300
	4/9/2014	12.4	ND(<0.10)	0.099
CL10-DO	10/23/2013	25.1	ND(0.10)	510
	4/10/2014	50.1	ND(<0.10)	180
MW-009	1/14/2009	822	60	7
	4/2/2009	711	70	6
MW-013	4/21/2010	586	2.4	2300
	10/14/2010	928	ND(1.0)	4800
	4/14/2011	1920	2.8	3100
	10/27/2011	1410	ND(0.50)	510
	4/5/2012	930	ND(0.50)	560
	11/26/2012	647	ND(1.0)	210
	4/17/2013	635	ND(0.10)	210
	10/24/2013	491	ND(0.10)	31
	4/9/2014	506	ND(<0.10)	23
MW-030	4/9/2009	135	0.16	0.012
OB-05-DO	4/8/2014	32.4	0.3	0.23
OB-06-DO	4/9/2014	32.7	0.11	0.13
OB-09-BR	1/14/2009	16	1.5	0.17
	4/9/2009	20	1.5	0.24
OB-09-DO	1/13/2009	32.6	ND(0.10)	ND(0.010)
	4/9/2009	44.6	ND(0.10)	ND(0.010)
OB-09-S	4/9/2009	122	16	2
OB-12-DO	10/27/2009	116	ND(0.50)	1100
	10/26/2011	87.6	ND(0.50)	54
	11/26/2012	120	ND(1.0)	790
	4/17/2013	62.8	ND(0.10)	22
	10/24/2013	53.8	ND(0.10)	0.11
	4/9/2014	39.4	ND(<0.10)	0.18
OB-19-DO	10/13/2010	15.9	ND(0.10)	1.1
	4/4/2011	24	0.84	2.6
	10/26/2011	34	0.78	3.2
	4/5/2012	25.8	ND(0.10)	5.8
	11/26/2012	26.7	0.13	4.9
	4/15/2013	28.3	ND(0.10)	0.061
	10/23/2013	30.4	ND(0.10)	2.3
	4/16/2014	33	ND(<0.10)	0.11
OB-25-BR	11/26/2012	812	ND(1.0)	7300
	10/23/2013	151	ND(0.10)	0.64
	Dup. 10/23/2013	145	ND(0.10)	0.63
	4/16/2014	114	ND(<0.10)	6.4
OB-27-BR	4/22/2010	214	1.9	1800
	10/14/2010	421	ND(1.0)	4800
	4/14/2011	690	5.2	6700
	10/28/2011	94	ND(0.50)	300
	4/6/2012	273	ND(0.50)	2200
	11/26/2012	540	ND(1.0)	4400
	4/15/2013	113	ND(0.50)	770
	10/24/2013	117	ND(0.50)	200
	4/11/2014	36.6	0.76	370

**TABLE 4**  
**Water Quality Data - Chloride, Dissolved Iron and Dissolved Manganese Results**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

SITE_ID	DATE	Chloride Total (mg/l)	Iron Dissolved (mg/l)	Manganese Dissolved (mg/l)
OB-32-DO	4/20/2010	74	ND(1.0)	540
	10/14/2010	211	ND(1.0)	690
	4/14/2011	262	ND(1.0)	520
	10/28/2011	175	ND(0.50)	290
	4/5/2012	204	ND(0.20)	190
	11/27/2012	209	ND(1.0)	220
	4/18/2013	203	ND(0.10)	140
	10/24/2013	132	ND(0.10)	40
	4/21/2014	107	ND(<0.10)	60
OB-34-DO	10/27/2009	38.7	ND(0.50)	10
OB-35-DO	4/9/2009	79.1	ND(0.10)	0.03
	10/28/2009	328	ND(0.10)	ND(0.010)
	4/22/2010	73.2	ND(0.10)	0.2
	10/14/2010	193	ND(0.10)	0.074
	4/7/2011	112J	ND(0.10)	0.023
	10/27/2011	84.3	ND(0.10)	0.066
	4/6/2012	78.4	ND(0.10)	0.028
	11/27/2012	83.5	ND(0.10)	4.2
	4/15/2013	135	ND(0.10)	0.37
	10/24/2013	91.5	ND(0.10)	15
	4/21/2014	96.1	ND(<0.10)	6.2
OB-36-DO	4/21/2014	419	0.13	2200
OB-37-DO	5/7/2010	47.3	ND(1.0)	63
	10/13/2010	621	ND(1.0)	3800
	4/7/2011	10800J	11	18000
	10/28/2011	890	ND(10)	15000
	4/6/2012	438	ND(1.5)	3200
	11/27/2012	14.4	0.56	20
	4/15/2013	181	ND(0.10)	66
OB-38-DO	4/9/2009	459	ND(0.10)	0.14
	10/28/2009	31.7	ND(0.10)	0.025
OB-39-DO	4/9/2009	15.5	ND(0.10)	ND(0.010)
OB-40-DO	4/9/2009	48.2	ND(0.10)	ND(0.010)
STR-03	1/13/2009	1790	1.4	0.58
	4/9/2009	1320	3.5	2.6
UNNAMED_STREAM	1/14/2009	1460	48	6.9
	4/9/2009	1170	22	6.1
MW-2_32-TOZER	11/8/2011	489	2.58	---

**Notes:**

mg/l = milligrams per liter

--- = not collected

ND(0.05) = non detect (method detection limit)

Dup. = Duplicate sample

J = Estimated value.

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	AP-13-DO 1/14/2009	AP-13-DO 4/2/2009	AP-13-DO 4/22/2010	AP-13-DO 7/14/2010	AP-13-DO 10/12/2010	AP-13-DO 1/4/2011	AP-13-DO 4/5/2011	AP-13-DO 7/28/2011	AP-13-DO 10/25/2011	AP-13-DO 1/17/2012	AP-13-DO 4/3/2012	AP-13-DO 1/20/2014	AP-13-DO 4/8/2014	AP-13-DO 8/14/2014	AP-23-DO 1/14/2009	AP-23-DO 4/2/2009	AP-23-DO 1/28/2010	AP-23-DO 4/22/2010	AP-23-DO 7/14/2010
<b>Dissolved Metals</b>																				
Iron	mg/L	0.26	0.2	---	---	---	---	---	---	---	---	---	---	---	---	<0.1	1.73	3.2	---	---
Manganese	mg/L	9.27	13	---	---	---	---	---	---	---	---	---	---	---	---	25.3	6.44	19	---	---
Sulfate	mg/L	<2.0	2.6	---	---	---	---	---	---	---	---	---	---	---	---	319	<2.0	5.2	---	---
Nitrate	mg/L	<0.50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.50	---	---	---
Nitrate/Nitrogen	mg/L	---	<0.50	---	---	---	---	---	---	---	---	---	---	---	---	<1.0	---	<0.50	---	---
<b>Metabolic Acids</b>																				
Acetic acid	mg/L	78	180	460	630J	980	2500	1600	2700	2500	1300	1200	---	---	---	---	220	290	28	320
Lactic Acid	mg/L	<1.0	<1.0	<5.0	<10J	360	16000	930	35000	6300	740	290	---	---	---	---	6.1	33	5.7	15
n-Butanoic acid	mg/L	<2.0	6.3	<10	<20J	18	<200	68	<400	<100	<40	20	---	---	---	---	36	77	3.1	22
Propionic acid	mg/L	26	48	74	85J	150	220	93	270	210	41	16	---	---	---	---	500	670D	41	770
Pyruvic Acid	mg/L	<0.50	<0.50	<2.5	<5.0J	14	<50	7.7	<100	<25	<10	<5.0	---	---	---	---	<2.5	<0.50	<0.50	<2.5
<b>Miscellaneous Analyses</b>																				
Methane	ug/L	<2.0	2.8	83	18J	6.6	5.4	2.7	8.6	3.6	3	2.3	<1.0	<1.0	2.3	3.9	36	27	14	19J
Ethane	ug/L	<1.0	<1.0	<1.0	<1.0J	<1.0	<1.0	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.2	2.1	<2.0	<1.0	<1.0J
Ethene	ug/L	<1.0	<1.0	17	5.6J	17	21	5	71	35	7.8	3.3	1.9	9.9	57	22	36	170	65	65J
Chloride	mg/L	150	273	---	---	---	---	---	---	---	---	---	---	---	---	---	43.6	60.7	---	---
TOC	mg/L	65.1	106	---	---	---	---	---	---	---	---	---	484	569	616	324	417	---	---	---
Dehalococcoides sp.	cells/ml	7.4 x 10 <sup>3</sup>	<7.7 x 10 <sup>1</sup>	1.2 X 10 <sup>6</sup>	4.4 x 10 <sup>4</sup>	1.1 x 10 <sup>5</sup>	4.0 x 10 <sup>4</sup>	1.2 x 10 <sup>4</sup>	6.3 x 10 <sup>1</sup> J	7.1 x 10 <sup>2</sup>	<2.8 x 10 <sup>1</sup>	<4.2 x 10 <sup>1</sup>	<9.2 x 10 <sup>1</sup>	11J	42	3.1 x 10 <sup>5</sup>	4.5 x 10 <sup>4</sup>	3.5 x 10 <sup>4</sup>	1.0 X 10 <sup>5</sup>	3.6 X 10 <sup>4</sup>
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn Degraders	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																				
pH	--	8.15	8.83	---	7.81	7.19	7.28	7.17	---	---	---	---	6.52	---	---	7.66	8.1	8.31	8.44	7.3
ORP	mV	-170	-153.5	---	-32	-71	-181.9	-354	---	---	---	---	-7	---	---	54.3	-36.3	-231	-390	-156
Dissolved Oxygen	mg/L	0.32	0.44	---	0.39	0.22	0.79	0.43	---	---	---	---	3.86	---	---	0.92	0.65	0.2	0.16	0.43
Specific Conductivity	ms/cm	8.547	12.369	---	9.527	9.191	11.269	9.699	---	---	---	---	0.071	---	---	28.13	25.632	20.055	19.235	16.707

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	AP-23-DO 10/12/2010	AP-23-DO 1/4/2011	AP-23-DO 4/5/2011	AP-23-DO 7/28/2011	AP-23-DO 10/25/2011	AP-23-DO 1/17/2012	AP-23-DO 4/3/2012	AP-23-DO 1/20/2014	AP-23-DO 4/8/2014	AP-23-DO 8/6/2014	AP-24-DO 1/14/2009	AP-24-DO 4/2/2009	AP-24-DO 1/28/2010	AP-24-DO 4/22/2010	AP-24-DO 7/14/2010	AP-24-DO 10/12/2010	AP-24-DO 1/4/2011	AP-24-DO 4/5/2011	AP-24-DO 7/28/2011
<b>Dissolved Metals</b>																				
Iron	mg/L	---	---	---	---	---	---	---	---	---	570	0.48	0.25	---	---	---	---	---	---	---
Manganese	mg/L	---	---	---	---	---	---	---	---	---	7560	7.46	11	---	---	---	---	---	---	---
Sulfate	mg/L	---	---	---	---	---	---	---	---	---	6.6	<2.0	48.4	---	---	---	---	---	---	---
Nitrate	mg/L	---	---	---	---	---	---	---	---	---	---	<0.50	---	---	---	---	---	---	---	---
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	---	---	---	---	<1.0	---	0.58	---	---	---	---	---	---
<b>Metabolic Acids</b>																				
Acetic acid	mg/L	620	2800	2000	920	220	26	190	---	---	---	440	780D	73	260	190J	480	2500	480	280
Lactic Acid	mg/L	<10	20000	11000	150	5.5	6	4.1	---	---	---	<10	4600D	4.8	340	<1.0J	<5.0	11000	33	20000
n-Butanoic acid	mg/L	240	<400	1200	140	25	<2.0	17	---	---	---	53	130	11	21	16J	15	250	120	<400U
Propionic acid	mg/L	1100	5200	3100	1800	390	42	290	---	---	---	930	1200D	48	330	200J	340	4900	740	<200U
Pyruvic Acid	mg/L	<5.0	430	<50	19	<1.0	<0.50	<1.0	---	---	---	<5.0	2.5	<0.50	<1.0	<0.50J	<2.5	89	<5.0	<100U
<b>Miscellaneous Analyses</b>																				
Methane	ug/L	700D	200	240	340	120	26	130	120J	280	110	59	110	<4.0	<20	<20J	<50	<100	<100	<40U
Ethane	ug/L	2.5	<10	<10	<10U	<2.0	<2.0	<4.0	17J	<5.0	<10	<1.0	<2.0	<2.0	<10	<10J	<25	<50	<50	<20U
Ethene	ug/L	310D	2500D	640	500	65	230D	510D	4700DJ	610D	750	1.6	3.9	160	680	1900DJ	4600D	4500	2600	1400
Chloride	mg/L	---	---	---	---	---	---	---	---	---	---	117	283	---	---	---	---	---	---	---
TOC	mg/L	---	---	---	---	---	---	---	2270	387	231	629	1950	---	---	---	---	---	---	---
Dehalococcoides sp.	cells/ml	7.1 x 10 <sup>5</sup>	6.0 x 10 <sup>4</sup>	3.7 x 10 <sup>5</sup>	2.1 x 10 <sup>4</sup>	2.7 x 10 <sup>6</sup>	5.5 x 10 <sup>5</sup>	1.4 x 10 <sup>7</sup>	3.16 x 10 <sup>3</sup>	9J	3.17 x 10 <sup>3</sup>	3.2 x 10 <sup>4</sup>	6.2 x 10 <sup>3</sup>	5.1 x 10 <sup>4</sup>	2.1 X 10 <sup>6</sup>	8.8 X 10 <sup>4</sup>	1.8 x 10 <sup>5</sup>	1.5 x 10 <sup>5</sup>	1.8 x 10 <sup>6</sup>	8.0 x 10 <sup>3</sup>
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn Degraders	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																				
pH	--	7.28	6.52	7.2	---	---	---	---	6.52	6.52	7.83	7.74	8.38	8.05	7.29	7.1	6.35	7.27	---	---
ORP	mV	-200	-348.6	-360	---	---	---	---	-238.2	-130.6	-238.3	-92.7	-223	-195	-33	-191	-133.1	-360	---	---
Dissolved Oxygen	mg/L	0.21	0.21	0.35	---	---	---	---	0.87	0.38	0.28	0.69	0.32	0.49	0.41	0.39	0.39	0.39	0.59	---
Specific Conductivity	ms/cm	17.112	16.25	16.20	---	---	---	---	3.162	5.327	14.33	8.644	3.816	3.262	3.473	3.415	12.112	3.542	---	---



**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	AP-24-DO 10/25/2011	AP-24-DO 4/3/2012	AP-24-DO 1/20/2014	AP-24-DO 4/8/2014	AP-24-DO 8/6/2014	AP-25-DO 1/14/2009	AP-25-DO 4/2/2009	AP-25-DO 1/28/2010	AP-25-DO 1/4/2011	AP-25-DO 4/5/2011	AP-25-DO 10/22/2013	AP-25-DO 1/20/2014	AP-25-DO 4/8/2014	AP-25-DO 8/6/2014	AP-33-DO 1/20/2014	AP-33-DO 4/8/2014	AP-33-DO 8/6/2014
<b>Dissolved Metals</b>																		
Iron	mg/L	---	---	---	---	1670	0.28	<0.10	---	---	---	---	---	---	---	---	---	4300
Manganese	mg/L	---	---	---	---	1190	0.243	0.11	---	---	---	---	---	---	---	---	---	1890
Sulfate	mg/L	---	---	---	---	13.4	<2.0	7.9	---	---	---	---	---	---	---	---	---	<2.0
Nitrate	mg/L	---	---	---	---	---	<0.50	---	---	---	---	---	---	---	---	---	---	---
Nitrate/Nitrogen	mg/L	---	---	---	---	<1.0	---	<0.50	---	---	---	---	---	---	---	---	---	<1.0
<b>Metabolic Acids</b>																		
Acetic acid	mg/L	780	380	---	---	---	24	59	<1.0	8.2	---	---	---	---	---	---	---	---
Lactic Acid	mg/L	750	<5.0	---	---	---	<1.0	1.9	<1.0	<1.0	---	---	---	---	---	---	---	---
n-Butanoic acid	mg/L	710	54	---	---	---	<2.0	<2.0	<2.0	<2.0	---	---	---	---	---	---	---	---
Propionic acid	mg/L	1600	420	---	---	---	5.8	15	<1.0	<1.0	---	---	---	---	---	---	---	---
Pyruvic Acid	mg/L	6.5	<2.5	---	---	---	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---	---	---	---
<b>Miscellaneous Analyses</b>																		
Methane	ug/L	<8.0	<8.0	2.1	<1.0	<1.0	<10	57	16	130D	---	5.7	13J	9.1	<1.0	61J	60	24
Ethane	ug/L	<4.0	<4.0	1.1	<1.0	<1.0	<5.0	<20	<1.0	<1.0	---	<1.0	<1.0UJ	<1.0	<1.0	100DJ	<50	13
Ethene	ug/L	300	5100D	100D	16	10	440	1100	18	320D	---	<1.0	110DJ	47	<1.0	4800DJ	2400	850D
Chloride	mg/L	---	---	---	---	---	34.9	61.1	---	---	---	---	---	---	---	---	---	---
TOC	mg/L	---	---	1520	38.2	13.6	19.3	32.2	---	---	---	1.8	3.3	2.5	4.4	3100	625	177
Dehalococcoides sp.	cells/ml	3.4 x 10 <sup>4</sup>	2.2 x 10 <sup>7</sup>	---	3J	5.6J	9.5 x 10 <sup>5</sup>	2.3 x 10 <sup>4</sup>	2.6 x 10 <sup>4</sup>	1.1 x 10 <sup>4</sup>	---	---	---	---	---	1.2 X 10 <sup>1</sup> JD	<92	<10
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn Degradars	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																		
pH	--	---	---	6.6	---	7.28	7.03	8.17	8.04	7.62	10.02	8.02	7.13	---	7.97	6.57	---	6.73
ORP	mV	---	---	-7.6	---	-165.7	-110.3	-133.5	-165	-175.9	-351	111.1	-73.9	---	-114.4	-205.7	---	-135
Dissolved Oxygen	mg/L	---	---	4.27	---	0.44	0.2	0.22	0.13	0.38	0.8	2.05	0.52	---	0.77	0.49	---	0.94
Specific Conductivity	ms/cm	---	---	1.834	---	2.152	0.357	0.495	0.185	0.271	0.116	0.106	3.503	---	0.275	9.869	---	2.591

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	AP-34-DO 1/20/2014	AP-34-DO 4/8/2014	AP-34-DO 8/6/2014	AP-35-DO 1/20/2014	AP-35-DO 4/8/2014	AP-35-DO 8/6/2014	BW-01 1/13/2009	BW-01 4/2/2009	BW-01 7/14/2009	BW-01 10/27/2009	BW-01 1/28/2010	BW-01 4/22/2010	BW-02 1/13/2009	BW-02 4/2/2009	BW-02 7/14/2009	BW-02 10/27/2009	BW-02 1/28/2010	BW-02 4/22/2010
<b>Dissolved Metals</b>																			
Iron	mg/L	--	---	890	--	--	820	2.1	3.8	---	---	---	---	8.16	6.4	---	---	---	---
Manganese	mg/L	--	---	9090	--	--	313	2.27	3.2	---	---	---	---	2.32	2.4	---	---	---	---
Sulfate	mg/L	---	---	3.1	---	---	2.2	16.1	8.6	---	---	---	---	16.4	14.6	---	---	---	---
Nitrate	mg/L	---	---	---	---	---	---	<0.50	---	---	---	---	---	<0.50	---	---	---	---	---
Nitrate/Nitrogen	mg/L	---	---	<1.0	---	---	1.8	---	1.03	---	---	---	---	---	0.6	---	---	---	---
<b>Metabolic Acids</b>																			
Acetic acid	mg/L	--	---	---	--	--	---	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lactic Acid	mg/L	--	---	---	--	--	---	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butanoic acid	mg/L	--	---	---	--	--	---	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0
Propionic acid	mg/L	--	---	---	--	--	---	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Pyruvic Acid	mg/L	--	---	---	--	--	---	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
<b>Miscellaneous Analyses</b>																			
Methane	ug/L	19J	25	43	24	62	19	1700	260	170	77	54	1300	1900	1300	71	100	170	1400
Ethane	ug/L	39J	<4.0	<1.0	4.3	4.3	1.0	<20U	<5.0	<2.0	<1.0	<1.0	<25	<20	<25	<1.0	<1.0	<2.0	<25
Ethene	ug/L	240DJ	210	42	36	38	5.6	<20U	<5.0	<2.0	<1.0	<1.0	<25	<20	<25	1.9	<1.0	<2.0	<25
Chloride	mg/L	--	---	---	--	--	---	86.1	67.3	---	---	---	---	87.2	97.8	---	---	---	---
TOC	mg/L	1010	215	112	1330	670	7.7	2.4	1.6	---	---	---	---	2.3	3.8	---	---	---	---
Dehalococcoides sp. (1)	cells/ml	2.3 X 10 <sup>1</sup> JD	<85	2.4J	3.68 X 10 <sup>3</sup> D	<92	7.3J	5.7 x 10 <sup>2</sup>	1.2 x 10 <sup>4</sup>	3.2 x 10 <sup>3</sup>	1.1 x 10 <sup>4</sup>	7.8 x 10 <sup>3</sup>	8.6 X 10 <sup>3</sup>	1.4 x 10 <sup>3</sup>	4.6 x 10 <sup>3</sup>	9.5 x 10 <sup>3</sup>	1.6 x 10 <sup>4</sup>	7.6 x 10 <sup>3</sup>	<1.0 X 10 <sup>1</sup>
Dehalococcoides sp. (2)		--	---	---	--	--	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp. (3)		--	---	---	--	--	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																			
pH	--	6.59	---	6.69	7.49	--	6.16	6.15	6.46	6.01	6.21	---	---	6.12	6.46	6.11	6.25	---	---
ORP	mV	-153.7	---	-149.6	-56.0	--	-138.4	-45.5	35.3	59	-0.8	---	---	-49.5	11.4	4	13.9	---	---
Dissolved Oxygen	mg/L	0.48	---	0.53	10.51	--	0.6	0.29	5.5	0.27	0.17	---	---	0.35	2.53	0.48	0.22	---	---
Specific Conductivity	ms/cm	5.261	---	2.169	0.061	--	6.626	0.348	0.174	0.216	0.253	---	---	0.361	0.219	0.192	0.213	---	---

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	BW-03 1/13/2009	BW-03 4/2/2009	BW-03 7/14/2009	BW-03 10/27/2009	BW-03 1/28/2010	BW-03 4/22/2010	BW-04 1/13/2009	BW-04 4/2/2009	BW-04 7/14/2009	BW-04 10/27/2009	BW-04 1/28/2010	BW-04 4/22/2010	BW-04 7/14/2010	BW-04 10/12/2010	BW-04 1/4/2011	BW-04 4/5/2011	BW-04 7/28/2011	BW-04 10/25/2011	BW-04 1/18/2012
<b>Dissolved Metals</b>																				
Iron	mg/L	12.6	18	---	---	---	---	9.46	10	---	---	---	---	---	---	---	---	---	---	---
Manganese	mg/L	5.64	8	---	---	---	---	3.82	3.2	---	---	---	---	---	---	---	---	---	---	---
Sulfate	mg/L	14.8	13.3	---	---	---	---	7.7	3.2	---	---	---	---	---	---	---	---	---	---	---
Nitrate	mg/L	<0.50	---	---	---	---	---	<0.50	---	---	---	---	---	---	---	---	---	---	---	---
Nitrate/Nitrogen	mg/L	---	0.59	---	---	---	---	---	<0.50	---	---	---	---	---	---	---	---	---	---	---
<b>Metabolic Acids</b>																				
Acetic acid	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0	86	<1.0	<1.0	2	280J	3.9	<1.0	<1.0	<1.0	<1.0	<1.0
Lactic Acid	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10J	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butanoic acid	mg/L	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0	35J	<2.0	<2.0	<2.0	<2.0	<2.0
Propionic acid	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	110	<1.0	<1.0	<1.0	660J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Pyruvic Acid	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.58	<5.0J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
<b>Miscellaneous Analyses</b>																				
Methane	ug/L	1900	2300	1300	45	800	2000	4800	9200	2700	2300	37	1800	2200J	3200D	2000	1100	590	240	17
Ethane	ug/L	<20	<40	<20	<1.0	<10	<20	<50	<100	<50	130	<1.0	<25	68J	99	110	40	62	19	<1.0
Ethene	ug/L	<20	<40	<20	<1.0	<10	<20	99	1300	1100	550	26	830	950J	66	110	370	330	130	5.1
Chloride	mg/L	80.8	91.3	---	---	---	---	96.5	95.1	---	---	---	---	---	---	---	---	---	---	---
TOC	mg/L	3.8	2.8	---	---	---	---	22.1	15.2	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	cells/ml	2.0 x 10 <sup>3</sup>	1.5 x 10 <sup>3</sup>	1.7 x 10 <sup>4</sup>	1.0 x 10 <sup>4</sup>	---	<2.9 X 10 <sup>1</sup>	6.2 x 10 <sup>4</sup>	<2.2 x 10 <sup>1</sup>	2.4 x 10 <sup>6</sup>	7.6 x 10 <sup>4</sup>	1.4 x 10 <sup>4</sup>	<2.9 X 10 <sup>1</sup>	2.5 X 10 <sup>5</sup>	<8.0 x 10 <sup>2</sup>	2.3 X 10 <sup>3</sup>	<6.3 x 10 <sup>1</sup>	1.4 X 10 <sup>2</sup>	5.5 x 10 <sup>4</sup>	1.8 x 10 <sup>4</sup>
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn Degraders	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																				
pH	--	6.43	6.67	6.19	6.43	---	---	7.17	7.38	6.81	6.9	---	---	---	---	---	7.52	7.17	7.1	---
ORP	mV	-102.1	-16.7	-84	-53.7	---	---	-154	-140.4	-138	-116.7	---	---	---	---	---	-367	-179.5	-141	---
Dissolved Oxygen	mg/L	0.62	1.27	0.25	0.12	---	---	0.39	0.36	0.13	0.2	---	---	---	---	---	0.24	0.24	0.43	---
Specific Conductivity	ms/cm	0.398	0.237	0.29	0.279	---	---	1.134	0.821	1.186	0.701	---	---	---	---	---	0.69	0.484	0.567	---

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	BW-04 4/3/2012	BW-04 8/21/2012	BW-04 11/28/2012	BW-04 2/6/2013	BW-04 4/11/2013	BW-05 1/13/2009	BW-05 4/2/2009	BW-05 7/14/2009	BW-05 10/27/2009	BW-05 1/28/2010	BW-05 4/22/2010	BW-05 7/14/2010	BW-05 10/12/2010	BW-05 1/4/2011	BW-05 4/5/2011	BW-05 7/28/2011	BW-05 10/25/2011	BW-05 1/18/2012	BW-05 4/3/2012
<b>Dissolved Metals</b>																				
Iron	mg/L	---	---	---	---	---	20.1	27	---	---	---	---	---	---	---	---	---	---	---	---
Manganese	mg/L	---	---	---	---	---	4.7	4.9	---	---	---	---	---	---	---	---	---	---	---	---
<b>Sulfate</b>																				
Sulfate	mg/L	---	---	---	---	---	<2.0	3.2	---	---	---	---	---	---	---	---	---	---	---	---
<b>Nitrate</b>																				
Nitrate	mg/L	---	---	---	---	---	<0.50	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Nitrate/Nitrogen</b>																				
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	0.57	---	---	---	---	---	---	---	---	---	---	---	---
<b>Metabolic Acids</b>																				
Acetic acid	mg/L	<1.0	---	---	---	---	81	41	44	1.7	<1.0	43	56J	32	<1.0	20	89	53	30	<1.0
Lactic Acid	mg/L	<1.0	---	---	---	---	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butanoic acid	mg/L	<2.0	---	---	---	---	2.1	<2.0	---	<2.0	<2.0	<2.0	4.8J	<2.0	<2.0	<2.0	6.6	<2.0	<2.0	<2.0
Propionic acid	mg/L	<1.0	---	---	---	---	140	43	34	<1.0	<1.0	43	88J	1.5	<1.0	<1.0	120	20	<1.0	<1.0
Pyruvic Acid	mg/L	<0.50	---	---	---	---	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
<b>Miscellaneous Analyses</b>																				
Methane	ug/L	1200D	960	970D	1200D	3100D	<100	210	340	260	490	<100	1600J	1400	8900D	200	970	110	710	600D
Ethane	ug/L	28	60	140	14	23	<50	<100	<50	23	<40	<50	<25J	130	1000	<50	31	<25	<25	67
Ethene	ug/L	70	310	180	<5.0U	<20	4400	5100	3600	1900	2300	4700	1900J	700	59	3700	1500	1700	4000D	750D
Chloride	mg/L	---	---	---	---	---	205	130	---	---	---	---	---	---	---	---	---	---	---	---
TOC	mg/L	---	5.5	3.9	15.3	6.8	106	42.1	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	cells/ml	<1.1 x 10 <sup>1</sup>	<3.7 x 10 <sup>1</sup>	4.1 x 10 <sup>6</sup>	<1.0 x 10 <sup>2</sup>	<1.2x10 <sup>1</sup>	3.3 x 10 <sup>4</sup>	1.8 x 10 <sup>4</sup>	1.2 x 10 <sup>5</sup>	4.5 x 10 <sup>4</sup>	3.4 x 10 <sup>4</sup>	1.1 X 10 <sup>6</sup>	2.4 X 10 <sup>4</sup>	8.7 x 10 <sup>3</sup>	6.5 x 10 <sup>2</sup>	5.9 x 10 <sup>4</sup>	5.5 x 10 <sup>2</sup>	1.9 x 10 <sup>5</sup>	1.2 x 10 <sup>4</sup>	<1.0 x 10 <sup>1</sup>
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn Degraders	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																				
pH	--	---	---	6.79	6.79	---	7.2	7.41	7.18	7.22	---	---	---	---	---	7.67	7.34	7.36	---	---
ORP	mV	---	---	-89.1	-93.5	---	-171.3	-165.6	-185	-138.8	---	---	---	---	---	-366	-170.8	-145.5	---	---
Dissolved Oxygen	mg/L	---	---	0.26	0.32	---	1.11	0.27	0.34	0.43	---	---	---	---	---	0.34	0.43	0.66	---	---
Specific Conductivity	ms/cm	---	---	0.602	0.635	---	0.952	0.862	0.692	0.571	---	---	---	---	---	0.617	0.816	0.64	---	---

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	BW-05 8/21/2012	BW-05 11/28/2012	BW-05 2/6/2013	BW-05 4/11/2013	BW-06 7/28/2011	BW-06 10/25/2011	BW-06 1/18/2012	BW-06 4/3/2012	BW-06 8/21/2012	BW-06 11/28/2012	BW-06 2/6/2013	BW-06 4/11/2013	BW-08 1/13/2009	BW-08 4/2/2009	BW-08 7/14/2009	BW-08 10/27/2009	BW-08 1/28/2010	BW-08 4/22/2010
<b>Dissolved Metals</b>																			
Iron	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	18.5	27	---	---	---	---
Manganese	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	5.26	7.9	---	---	---	---
Sulfate	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	3.7	2.5	---	---	---	---
Nitrate	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	<0.50	---	---	---	---	---
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.50	---	---	---	---
<b>Metabolic Acids</b>																			
Acetic acid	mg/L	---	---	---	---	180	1.5	110	63	---	---	---	---	7	39	160	57	<1.0	<1.0
Lactic Acid	mg/L	---	---	---	---	<2.0	<1.0	<1.0	<1.0	---	---	---	---	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butanoic acid	mg/L	---	---	---	---	8.7	<2.0	2.6	<2.0	---	---	---	---	<2.0	<2.0	---	<2.0	<2.0	<2.0
Propionic acid	mg/L	---	---	---	---	300	<1.0	58	<1.0	---	---	---	---	2.5	26	140	1.9	<1.0	<1.0
Pyruvic Acid	mg/L	---	---	---	---	<1.0	<0.50	<0.50	<0.50	---	---	---	---	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
<b>Miscellaneous Analyses</b>																			
Methane	ug/L	4800D	11000D	20000	18000	210D	51	270	1700	350	6300D	11000D	13000D	220	350	520	1000	81	210
Ethane	ug/L	49	<50	<200U	<200	<1.0	<5.0	<5.0	62	20	68	<100U	<100	<20	<100	<100	<100	12	<10
Ethene	ug/L	170	<50	<200U	<200	2800D	380	3900D	3500	77	140	<100U	<100	1500	7300	6900	5900	280	620
Chloride	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	124	104	---	---	---	---
TOC	mg/L	800	700	105	180	---	---	---	---	271	167	34.1	72.2	10.1	34.4	---	---	---	---
Dehalococcoides sp.	cells/ml	<3.3 x 10 <sup>3</sup>	1.2 x 10 <sup>6</sup>	<1.2 x 10 <sup>2</sup>	<1.4 x 10 <sup>1</sup>	9.9 x 10 <sup>3</sup>	2.5 x 10 <sup>4</sup>	3.1 x 10 <sup>4</sup>	1.2 x 10 <sup>5</sup>	<3.3 x 10 <sup>3</sup>	<4.6 x 10 <sup>1</sup>	<1.1 x 10 <sup>2</sup>	<2.4 x 10 <sup>1</sup>	4.5 x 10 <sup>2</sup>	1.3 x 10 <sup>3</sup>	1.4 x 10 <sup>5</sup>	5.6 x 10 <sup>5</sup>	4.8 x 10 <sup>4</sup>	<2.6 x 10 <sup>1</sup>
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn Degraders	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																			
pH	--	---	6.34	6.55	---	7.15	7.29	---	---	---	---	6.3	---	6.95	7.36	7.1	7.39	---	---
ORP	mV	---	-135.6	15.4	---	-157	-87.9	---	---	---	---	-62.5	---	-160.2	-138.4	-162	-191.5	---	---
Dissolved Oxygen	mg/L	---	0.21	0.52	---	0.16	0.92	---	---	---	---	0.41	---	0.2	0.16	0.14	0.06	---	---
Specific Conductivity	ms/cm	---	2.559	2.078	---	1.174	0.508	---	---	---	---	0.525	---	0.659	0.647	1.122	0.96	---	---

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	BW-08 7/14/2010	BW-08 10/12/2010	BW-08 1/5/2011	BW-08 4/5/2011	BW-08 7/28/2011	BW-08 10/25/2011	BW-08 1/18/2012	BW-08 4/3/2012	BW-08 8/21/2012	BW-08 11/28/2012	BW-08 2/6/2013	BW-08 4/11/2013	BW-09 1/13/2009	BW-09 4/2/2009	BW-09 7/14/2009	BW-09 10/27/2009	BW-09 1/28/2010	
<b>Dissolved Metals</b>																			
Iron	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	19.6	41	---	---	---	
Manganese	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	7.09	11	---	---	---	
Sulfate	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	10.3	2.4	---	---	---	
Nitrate	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	<0.50	---	---	---	---	
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.50	---	---	---	
<b>Metabolic Acids</b>																			
Acetic acid	mg/L	130J	270	290	21	220	1.8	12	100	---	---	---	---	5.6	17	260	56	<1.0	
Lactic Acid	mg/L	<2.0J	<2.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	---	---	---	---	<1.0	<1.0	<2.0	1.5	<1.0	
n-Butanoic acid	mg/L	22J	4.8	5.9	<2.0	11	<2.0	<2.0	<2.0	---	---	---	---	<2.0	<2.0	---	<2.0	<2.0	
Propionic acid	mg/L	260J	110	120	<1.0	250	<1.0	<1.0	2.2	---	---	---	---	<1.0	2.2	250	<1.0	<1.0	
Pyruvic Acid	mg/L	<1.0J	<1.0	<1.0	<0.50	<1.0	<0.50	<0.50	<0.50	---	---	---	---	<0.50	<0.50	<1.0	<0.50	<0.50	
<b>Miscellaneous Analyses</b>																			
Methane	ug/L	1500DJ	4900D	16000D	8900	2800	250	1600D	4300D	1700	15000D	21000D	19000	650	660	2500	2800	370	
Ethane	ug/L	29J	75	1700	650	<100	17	20	82	40	40	<200U	<200	42	<20	74	140	57	
Ethene	ug/L	3800DJ	1300D	250	1900	4800	1000D	760	3400D	39	<20	<200U	<200	1200	2000	4600	4600	830	
Chloride	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	131	174	---	---	---	
TOC	mg/L	---	---	---	---	---	---	---	---	194	630	181	52	9.8	13.8	---	---	---	
Dehalococcoides sp.	cells/ml	2.3 X 10 <sup>4</sup>	1.0 x 10 <sup>4</sup>	<1.0 x 10 <sup>1</sup> U	3.7 x 10 <sup>4</sup>	2.1 x 10 <sup>2</sup>	4.6 x 10 <sup>4</sup>	2.9 x 10 <sup>5</sup>	1.8 x 10 <sup>5</sup>	<3.7 x 10 <sup>1</sup>	<3.1 x 10 <sup>1</sup>	<8.3 x 10 <sup>1</sup>	3.3 X 10 <sup>3</sup>	1.9 x 10 <sup>3</sup>	6.7 x 10 <sup>3</sup>	4.0 x 10 <sup>4</sup>	1.2 x 10 <sup>5</sup>	8.3 x 10 <sup>4</sup>	
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Mn Degraders	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
<b>Field Parameters</b>																			
pH	--	---	---	---	7.5	7.21	7.43	---	---	---	6.15	6.59	---	7.06	7.34	7.24	7.51	---	
ORP	mV	---	---	---	-373	-167.6	-116.7	---	---	---	-88.1	-106.3	---	-167.1	-106.5	-174	-197.9	---	
Dissolved Oxygen	mg/L	---	---	---	0.22	0.36	0.82	---	---	---	0.26	0.72	---	0.22	0.2	0.11	0.14	---	
Specific Conductivity	ms/cm	---	---	---	0.608	1.408	0.565	---	---	---	2.384	1.754	---	0.724	0.699	1.463	1.094	---	

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	BW-09 4/22/2010	BW-09 7/28/2011	BW-09 10/25/2011	BW-09 1/18/2012	BW-09 4/3/2012	BW-09 8/21/2012	BW-09 11/28/2012	BW-09 2/6/2013	BW-09 4/11/2013	MW-009 1/14/2009	MW-009 4/2/2009	MW-009 7/14/2009	MW-009 10/27/2009	MW-009 1/28/2010	MW-009 4/22/2010	MW-009 7/14/2010	MW-009 10/12/2010	MW-009 1/4/2011
<b>Dissolved Metals</b>																			
Iron	mg/L	---	---	---	---	---	---	---	---	---	59.5	70	---	---	---	---	---	---	---
Manganese	mg/L	---	---	---	---	---	---	---	---	---	6.98	6	---	---	---	---	---	---	---
Sulfate	mg/L	---	---	---	---	---	---	---	---	---	<2.0	<2.0	---	---	---	---	---	---	---
Nitrate	mg/L	---	---	---	---	---	---	---	---	---	<0.50	---	---	---	---	---	---	---	---
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	---	---	---	---	<0.50	---	---	---	---	---	---	---
<b>Metabolic Acids</b>																			
Acetic acid	mg/L	<1.0	530	<1.0	32	85	---	---	---	---	210E	390	1000	500	250	600	320J	6.1	<1.0
Lactic Acid	mg/L	<1.0	<5.0	<1.0	<1.0	<1.0	---	---	---	---	<1.0	<1.0	370	<5.0	<2.0	<5.0	<2.0J	<1.0	<1.0
n-Butanoic acid	mg/L	<2.0	31	<2.0	<2.0	<2.0	---	---	---	---	4.9	11	---	30	12	63	11J	<2.0	<2.0
Propionic acid	mg/L	<1.0	680	<1.0	4.1	4.2	---	---	---	---	7.7	17	2900	810	200	370	74J	<1.0	<1.0
Pyruvic Acid	mg/L	<0.50	<2.5	<0.50	<0.50	<0.50	---	---	---	---	<0.50	<0.50	<20	<2.5	<1.0	<2.5	<1.0J	<0.50	<0.50
<b>Miscellaneous Analyses</b>																			
Methane	ug/L	640	7500D	7400	2200	4500D	9400D	17000D	22000D	17000	15000	17000	9500	14000	16000	15000	15000J	12000	20000D
Ethane	ug/L	<10	200	1500	160	350	450	<100	<200U	<200	1300	1900	360	330	870	1200	1200J	930	1500
Ethene	ug/L	900	3500D	280	1100	4100D	370	<100	<200U	<200	<250	<250	1600	690	<250	1000	<250J	220	430
Chloride	mg/L	---	---	---	---	---	---	---	---	---	822	711	---	---	---	---	---	---	---
TOC	mg/L	---	---	---	---	---	1010	630	124	144	109	183	---	---	---	---	---	---	---
Dehalococcoides sp.	cells/ml	<2.4 x 10 <sup>1</sup>	5.1 x 10 <sup>1</sup>	1.2 x 10 <sup>3</sup>	1.5 x 10 <sup>5</sup>	3.1 x 10 <sup>5</sup>	<3.1 x 10 <sup>1</sup>	<3.1 x 10 <sup>1</sup>	<7.7 x 10 <sup>1</sup>	<3.1 x 10 <sup>1</sup>	8.8 x 10 <sup>3</sup>	1.5 x 10 <sup>4</sup>	2.7 x 10 <sup>5</sup>	1.2 x 10 <sup>5</sup>	2.5 x 10 <sup>4</sup>	5.6 X 10 <sup>5</sup>	9.0 X 10 <sup>3</sup>	<6.4 X 10 <sup>1</sup>	3.3 X 10 <sup>3</sup>
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn Degraders	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																			
pH	--	---	6.71	7.17	---	---	---	6.3	6.55	---	6.83	6.87	6.51	6.51	---	---	---	---	---
ORP	mV	---	-163.4	-113.6	---	---	---	-111.7	-118.1	---	-168.2	-143.3	-116	-105.1	---	---	---	---	---
Dissolved Oxygen	mg/L	---	0.62	0.55	---	---	---	0.15	0.22	---	0.52	0.74	0.74	0.31	---	---	---	---	---
Specific Conductivity	ms/cm	---	3.207	0.636	---	---	---	2.362	1.725	---	3.53	3.435	7.494	5.223	---	---	---	---	---

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	MW-009 4/5/2011	MW-009 7/28/2011	MW-009 10/25/2011	MW-009 1/17/2012	MW-009 4/3/2012	MW-009 8/21/2012	MW-009 11/28/2012	MW-009 2/6/2013	MW-009 4/11/2013	MW-009 10/22/2013	MW-009 1/20/2014	MW-009 4/8/2014	MW-009 8/6/2014	OB-09-BR 1/14/2009	OB-09-BR 4/9/2009	OB-09-BR 7/14/2009	OB-09-BR 10/28/2009
<b>Dissolved Metals</b>																		
Iron	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	1.5	1.5	---	---
Manganese	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	0.166	0.24	---	---
Sulfate	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	<2.0	<2.0	---	---
Nitrate	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.50	---	---	---
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.50	---	---
<b>Metabolic Acids</b>																		
Acetic acid	mg/L	6	<1.0U	<1.0	<1.0	<1.0	---	---	---	---	---	---	---	---	<1.0	<1.0	<1.0	1.1
Lactic Acid	mg/L	<1.0	<1.0U	<1.0	<1.0	<1.0	---	---	---	---	---	---	---	---	<1.0	<1.0	<1.0	<1.0
n-Butanoic acid	mg/L	<2.0	<2.0U	<2.0	<2.0	<2.0	---	---	---	---	---	---	---	---	<2.0	<2.0	---	<2.0
Propionic acid	mg/L	1.6	<1.0U	<1.0	<1.0	<1.0	---	---	---	---	---	---	---	---	<1.0	<1.0	<1.0	<1.0
Pyruvic Acid	mg/L	<0.50	<0.50U	<0.50	<0.50	<0.50	---	---	---	---	---	---	---	---	<0.50	<0.50	<0.50	<0.50
<b>Miscellaneous Analyses</b>																		
Methane	ug/L	24000	15000	9500	17000D	16000	16000	20000	23000	15000	15000	12000	13000	9600	210	12000	170	500
Ethane	ug/L	1900	1400	830	1900	2000	2500	2600	2200	1200	1000	690	670	540	<2.5	<200	<2.5	<5.0
Ethene	ug/L	910	1400	1100	2000	1200	1600	2700	6800	5400	3000	4000	5300	1500	4.5	<200	6.4	8.4
Chloride	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	16	20	---	---
TOC	mg/L	---	---	---	---	---	28000	11900	7200	5800	1910	1370	1110	890	6.5	4.1	---	---
Dehalococcoides sp.	cells/ml	1.5 x 10 <sup>5</sup>	2.1 x 10 <sup>2</sup>	---	<4.0 X 10 <sup>1</sup>	<3.7 X 10 <sup>1</sup>	<3.3 x 10 <sup>3</sup>	<1.0 x 10 <sup>1</sup>	<3.3 x 10 <sup>3</sup>	<3.3 x 10 <sup>3</sup>	2.0 x 10 <sup>5</sup>	---	19J	---	2.7 x 10 <sup>4</sup>	<3.2 x 10 <sup>1</sup>	8.5 x 10 <sup>3</sup>	1.8 x 10 <sup>4</sup>
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn Degraders	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																		
pH	--	7.17	7.07	7.05	---	---	---	---	5.43	---	6.06	6.26	---	---	9.18	7.69	7.91	8.83
ORP	mV	-368	-169.8	-128.4	---	---	---	---	12	---	41.3	-89.2	---	---	-335.4	-156	-323	-415.7
Dissolved Oxygen	mg/L	0.59	0.2	0.39	---	---	---	---	1.56	---	0.89	0.78	---	---	1.2	0.36	0.11	0.86
Specific Conductivity	ms/cm	5.494	4.105	2.545	---	---	---	---	3.539	---	5.052	4.527	---	---	0.111	0.136	0.139	0.144



**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	OB-09-BR 1/28/2010	OB-09-BR 4/22/2010	OB-09-BR 7/14/2010	OB-09-BR 10/12/2010	OB-09-BR 1/5/2011	OB-09-BR 4/6/2011	OB-09-BR 7/28/2011	OB-09-BR 10/25/2011	OB-09-BR 1/18/2012	OB-09-BR 4/3/2012	OB-09-BR 8/21/2012	OB-09-BR 11/28/2012	OB-09-BR 2/6/2013	OB-09-BR 4/11/2013	OB-09-DO 1/13/2009	OB-09-DO 4/9/2009	OB-09-DO 4/27/2009	OB-09-DO 7/14/2009
<b>Dissolved Metals</b>																			
Iron	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.100	<0.10	---	---
Manganese	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.0100	<0.010	---	---
Sulfate	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2.4	4.7	---	---
Nitrate	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.12	---	---	---
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.63	---	---
<b>Metabolic Acids</b>																			
Acetic acid	mg/L	<1.0	<1.0	2.7J	2.4	6	2.8	8.6	1.5	110	6.2	---	---	---	---	<1.0	---	<1.0	<1.0
Lactic Acid	mg/L	<1.0	<1.0	<1.0J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	---	---	---	---	<1.0	---	<1.0	<1.0
n-Butanoic acid	mg/L	<2.0	<2.0	<2.0J	<2.0	<2.0	<2.0	<2.0	<2.0	2.7	<2.0	---	---	---	---	<2.0	---	<2.0	---
Propionic acid	mg/L	<1.0	<1.0	1.3J	<1.0	<1.0	<1.0	<1.0	<1.0	58	<1.0	---	---	---	---	<1.0	---	<1.0	<1.0
Pyruvic Acid	mg/L	<0.50	<0.50	<0.50J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<0.50	---	<0.50	<0.50
<b>Miscellaneous Analyses</b>																			
Methane	ug/L	170	340	560DJ	490	1300D	720	1600D	1200	660	1700D	2500D	2100	2300	1800	<2.0	10000	---	2100
Ethane	ug/L	<2.0	<5.0	<5.0J	<10	<10	<10	<10	<20	<10	<10	<20	<50	<25U	<25	<1.0	320	---	130
Ethene	ug/L	3	8.1	16J	13	28	20	34	<20	11	42	66	57	64	58	<1.0	370	---	73
Chloride	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	32.6	44.6	---	---
TOC	mg/L	---	---	---	---	---	---	---	---	---	---	12.3	13.2	10.3	11.5	5.7	4.4	---	---
Dehalococcoides sp.	cells/ml	<6.7 x 10 <sup>1</sup>	<3.1 x 10 <sup>1</sup>	---	---	3.6 x 10 <sup>3</sup>	---	---	---	1.5 x 10 <sup>3</sup>	---	---	---	---	---	<2.0 x 10 <sup>1</sup>	<1.0 x 10 <sup>1</sup>	---	3.0 x 10 <sup>5</sup>
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn Degraders	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																			
pH	--	7.48	---	8.51	7.65	8.51	8.10	---	---	---	---	---	---	7.53	---	6.48	6.22	6.52	6.95
ORP	mV	-174	---	-63	-311	-405.5	-363	---	---	---	---	---	---	-172.1	---	7.6	-41	37.9	-126
Dissolved Oxygen	mg/L	0.36	---	0.26	0.31	0.67	0.31	---	---	---	---	---	---	0.4	---	0.77	0.14	0.34	0.12
Specific Conductivity	ms/cm	0.146	---	0.157	0.17	0.173	0.190	---	---	---	---	---	---	0.31	---	0.105	0.233	0.161	0.21

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	OB-09-DO 10/28/2009	OB-09-DO 1/28/2010	OB-09-DO 4/22/2010	OB-09-DO 7/14/2010	OB-09-DO 10/12/2010	OB-09-DO 1/5/2011	OB-09-DO 4/6/2011	OB-09-DO 7/28/2011	OB-09-DO 10/25/2011	OB-09-DO 1/18/2011	OB-09-DO 4/3/2012	OB-09-DO 8/21/2012	OB-09-DO 11/28/2012	OB-09-DO 2/6/2013	OB-09-DO 4/11/2013	OB-09-S 4/9/2009	OB-09-S 4/27/2009	OB-09-S 7/14/2009
<b>Dissolved Metals</b>																			
Iron	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	16	---	---
Manganese	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2	---	---
Sulfate	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<2.0	---	---
Nitrate	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.50	---	---
<b>Metabolic Acids</b>																			
Acetic acid	mg/L	2.8	<1.0	72	4.0J	3.7	1.5	1.2	2.1	7.8	1.4	<1.0	---	---	---	---	---	150	660
Lactic Acid	mg/L	<1.0	<1.0	<1.0	<1.0J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	---	---	---	---	---	<1.0	<20
n-Butanoic acid	mg/L	<2.0	<2.0	2.5	<2.0J	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	---	---	---	---	---	31	---
Propionic acid	mg/L	<1.0	<1.0	140	<1.0J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	---	---	---	---	---	230	1700
Pyruvic Acid	mg/L	<0.50	<0.50	<0.50	<0.50J	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	---	---	---	---	---	<0.50	<10
<b>Miscellaneous Analyses</b>																			
Methane	ug/L	610	180	4500	13000DJ	3000	12000D	3000	600	1800D	1200	1200	1800	330	240	840D	10000	---	10000
Ethane	ug/L	16	<2.0	140	240J	80	410	100	<10	<10	<25	<20	<20	<5.0	<5.0U	<5.0	<200	---	<200
Ethene	ug/L	31	<2.0	110	210J	57	330	80	11	37	<25	<20	<20	<5.0	<5.0U	5.6	4300	---	2000
Chloride	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	122	---	---
TOC	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	29.7	8.8	6.4	5.5	231	---
Dehalococcoides sp.	cells/ml	3.5 x 10 <sup>5</sup>	5.1 x 10 <sup>3</sup>	6.1 X 10 <sup>5</sup>	---	---	2.4 x 10 <sup>5</sup>	---	---	---	1.8 x 10 <sup>5</sup>	---	---	---	---	---	---	1.0 x 10 <sup>4</sup>	9.6 x 10 <sup>5</sup>
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn Degraders	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																			
pH	--	6.69	6.52	---	6.71	6.75	6.82	6.43	---	---	---	---	---	6	6.54	---	6.43	6.43	6.3
ORP	mV	-130.7	-65	---	-34	-135	-171.6	-390	---	---	---	---	---	-99.2	-16.1	---	-126	-106.4	-100
Dissolved Oxygen	mg/L	0.32	0.26	---	0.19	0.27	0.32	0.16	---	---	---	---	---	0.15	2.26	---	0.53	0.24	0.17
Specific Conductivity	ms/cm	0.226	0.124	---	0.266	0.259	0.225	0.105	---	---	---	---	---	0.212	0.112	---	14	11.583	10.859

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	OB-09-S 10/28/2009	OB-09-S 1/28/2010	OB-09-S 4/22/2010	OB-9-S 7/14/2010	OB-09-S 10/12/2010	OB-09-S 1/5/2011	OB-09-S 4/5/2011	OB-09-S 7/28/2011	OB-09-S 10/25/2011	OB-09-S 1/18/2012	OB-09-S 4/3/2012	OB-09-S 8/21/2012	OB-09-S 11/28/2012	OB-09-S 2/6/2013	OB-09-S 4/11/2013	OB-09-S 10/22/2013	OB-09-S 1/21/2014
<b>Dissolved Metals</b>																		
Iron	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Manganese	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sulfate	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nitrate	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Metabolic Acids</b>																		
Acetic acid	mg/L	92	53	310	160J	250	870	390	940	360	<1.0	54	---	---	---	---	---	---
Lactic Acid	mg/L	<1.0	<1.0	290	220J	<2.0	<10	<5.0	<10	<2.0	<1.0	<1.0	---	---	---	---	---	---
n-Butanoic acid	mg/L	16	9	100	17J	8.5	270	100	48	74	<2.0	<2.0	---	---	---	---	---	---
Propionic acid	mg/L	110	57	830	210J	170	1700	510	1100	300	<1.0	19	---	---	---	---	---	---
Pyruvic Acid	mg/L	<0.50	<0.50	<2.5	<1.0J	<1.0	<5.0	<2.5	<5.0	<1.0	<0.50	<0.50	---	---	---	---	---	---
<b>Miscellaneous Analyses</b>																		
Methane	ug/L	3700	12000	12000	13000J	9000	25000D	25000	21000D	18000	18000	27000D	13000	15000	21000D	18000	10000	16000D
Ethane	ug/L	<50	320	<200	240J	370	470	<500	330	290	310	690	<200	<200	<200U	<200	<200	170
Ethene	ug/L	580	820	1300	1700J	290	1000	1000	<200	<250	<250	<250	<200	<200	<200U	<200	<200	<130
Chloride	mg/L	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
TOC	mg/L	---	---	---	---	---	---	---	---	---	---	---	210	32.7	23	34.9	81	28.1
Dehalococcoides sp.	cells/ml	2.4 x 10 <sup>6</sup>	1.5 x 10 <sup>5</sup>	9.6 X 10 <sup>5</sup>	<1.0 X 10 <sup>2</sup>	7.2 x 10 <sup>3</sup>	8.1 x 10 <sup>3</sup>	9.4 x 10 <sup>5</sup>	1.6 x 10 <sup>3</sup>	4.9 x 10 <sup>5</sup>	4.8 x 10 <sup>4</sup>	6.4 x 10 <sup>5</sup>	<3.3 x 10 <sup>3</sup>	<9.1 x 10 <sup>1</sup>	<9.7 x 10 <sup>1</sup>	<1.2 x 10 <sup>2</sup>	<6.8 x 10 <sup>1</sup>	---
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn Degradars	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																		
pH	--	---	6.45	---	6.42	6.3	6.16	6.8	---	---	---	---	---	5.8	6.43	---	6.52	6.65
ORP	mV	-102	-102	---	-43	-98	-144.9	-367	---	---	---	---	---	-62.2	-77.9	---	-34.8	-90.8
Dissolved Oxygen	mg/L	0.31	1.49	---	0.44	0.19	0.40	0.54	---	---	---	---	---	0.08	0.3	---	3.11	0.93
Specific Conductivity	ms/cm	7.857	12.945	---	6.045	6.144	---	11.86	---	---	---	---	---	0.276	1.539	---	2.151	1.88

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	OB-09-S 1/21/2014	OB-09-S 1/21/2014	OB-15-S 7/14/2009	OB-15-S 1/28/2010	OB-15-S 4/22/2010	OB-15-S 10/12/2010	OB-15-S 1/4/2011	OB-15-S 7/28/2011	OB-15-S 10/25/2011	OB-15-S 1/17/2012
<b>Dissolved Metals</b>											
Iron	mg/L	---	---	---	---	---	---	---	---	---	---
Manganese	mg/L	---	---	---	---	---	---	---	---	---	---
Sulfate	mg/L	---	---	---	---	---	---	---	---	---	---
Nitrate	mg/L	---	---	---	---	---	---	---	---	---	---
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	---	---	---	---
<b>Metabolic Acids</b>											
Acetic acid	mg/L	---	---	180	<1.0	12	12	120	670	230	57
Lactic Acid	mg/L	---	---	420	<1.0	490	<1.0	<1.0	<10	<2.0	<1.0
n-Butanoic acid	mg/L	---	---	---	<2.0	<10	<2.0	4.6	120	37	<2.0
Propionic acid	mg/L	---	---	310	<1.0	24	11	110	1200	310	31
Pyruvic Acid	mg/L	---	---	<1.3U	<0.50	<2.5	<0.50	<0.50	<5.0	<1.0	<0.50
<b>Miscellaneous Analyses</b>											
Methane	ug/L	15000	14000	55	92	390	5400D	12000D	8100	11000D	21000D
Ethane	ug/L	<250	<250	<1.0U	<1.0	<5.0	<5.0	150	<100	210	400
Ethene	ug/L	<250	<250	90	24	170	540D	210	230	480	160
Chloride	mg/L	---	---	---	---	---	---	---	---	---	---
TOC	mg/L	26.4	29.8	---	---	---	---	---	---	---	---
Dehalococcoides sp.	cells/ml	---	---	$8.5 \times 10^4$	$5.2 \times 10^3$	$<7.7 \times 10^1$	$8.8 \times 10^4$	$1.1 \times 10^5$	$6.1 \times 10^1$	$1.8 \times 10^7$	$<6.6 \times 10^1$
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---
Mn Degradars	(3)	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>											
pH	--	---	---	6.64	---	---	---	---	6.29	6.52	6.52
ORP	mV	---	---	-163	---	---	---	---	-145	-94.2	-94.2
Dissolved Oxygen	mg/L	---	---	0.37	---	---	---	---	0.24	0.41	0.41
Specific Conductivity	ms/cm	---	---	9.071	---	---	---	---	14.038	3.543	3.543

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	OB-15-S 4/3/2012	OB-15-S 8/21/2012	OB-15-S 11/28/2012	OB-15-S 2/6/2013	OB-15-S 4/11/2013	OB-15-S 10/22/2013	OB-15-S 1/21/2014	OB-15-S 4/8/2014	OB-15-S 8/6/2014	STR-03 1/13/2009	STR-03 4/9/2009	STR-03 7/14/2009	STR-03 10/27/2009	STR-03 1/28/2010	STR-03 4/22/2010	STR-03 7/14/2010	STR-03 10/12/2010	STR-03 1/5/2011
<b>Dissolved Metals</b>																			
Iron	mg/L	---	---	---	---	---	---	---	---	---	1.44	3.5	---	---	---	---	---	---	---
Manganese	mg/L	---	---	---	---	---	---	---	---	---	0.577	2.6	---	---	---	---	---	---	---
Sulfate	mg/L	---	---	---	---	---	---	---	---	---	32.6	22	---	---	---	---	---	---	---
Nitrate	mg/L	---	---	---	---	---	---	---	---	---	1.58	---	---	---	---	---	---	---	---
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	---	---	---	---	0.86	---	---	---	---	---	---	---
<b>Metabolic Acids</b>																			
Acetic acid	mg/L	9.4	---	---	---	---	---	---	---	---	<1.0	<1.0	<1.0	<1.0	1.8	<1.0	1.5J	<1.0	<1.0
Lactic Acid	mg/L	<1.0	---	---	---	---	---	---	---	---	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0J	<1.0	<1.0
n-Butanoic acid	mg/L	<2.0	---	---	---	---	---	---	---	---	<2.0	<2.0	---	<2.0	<2.0	<2.0	<2.0J	<2.0	<2.0
Propionic acid	mg/L	<1.0	---	---	---	---	---	---	---	---	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0J	<1.0	<1.0
Pyruvic Acid	mg/L	<0.50	---	---	---	---	---	---	---	---	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50J	<0.50	<0.50
<b>Miscellaneous Analyses</b>																			
Methane	ug/L	21000	21000	18000	24000	15000	13000	12000	11000	15000D	20	39	270	4.5	24	46	4.3J	<2.0	5.5
Ethane	ug/L	370	300	300	280	280	340	310	340	440	<1.0	1.3	13	<1.0	1.1	1.5	<1.0J	<1.0	<1.0
Ethene	ug/L	310	280	<250	<250U	<250	<250U	210	160	<130	<1.0	6.2	13	<1.0	3.6	3.5	<1.0J	<1.0	<1.0
Chloride	mg/L	---	---	---	---	---	---	---	---	---	1790	1320	---	---	---	---	---	---	---
TOC	mg/L	---	1750	1670	620	543	187	59	17.5	36.5	1.7	1.6	---	---	---	---	---	---	---
Dehalococcoides sp.	cells/ml	$7.5 \times 10^5$	$<3.3 \times 10^3$	$<1.7 \times 10^2$	$<1.1 \times 10^2$	$1.1 \times 10^5$	$<8.6 \times 10^1$	---	<150	---	$<1.0 \times 10^1$	$5.9 \times 10^2$	$<1.0 \times 10^1$	$2.0 \times 10^4$	$5.2 \times 10^3$	$<2.2 \times 10^1$	$4.2 \times 10^3$	$<6.4 \times 10^1$	$1.6 \times 10^3$
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mn Degradars	(3)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>																			
pH	--	---	---	---	6.48	---	6.65	6.61	---	---	---	---	---	---	---	---	---	---	---
ORP	mV	---	---	---	-96.5	---	-105.2	-40.3	---	---	---	---	---	---	---	---	---	---	---
Dissolved Oxygen	mg/L	---	---	---	0.99	---	0.2	2.09	---	---	---	---	---	---	---	---	6.05	8.02	---
Specific Conductivity	ms/cm	---	---	---	2.18	---	2.505	1.046	---	---	---	---	---	---	---	---	---	---	---

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	STR-03 4/5/2011	STR-03 7/28/2011	STR-03 10/25/2011	STR-03 1/18/2011	STR-03 4/3/2012	UNNAMED STREAM 1/14/2009	UNNAMED STREAM 4/9/2009	UNNAMED STREAM 7/14/2009	UNNAMED STREAM 10/27/2009	UNNAMED STREAM 1/28/2010	UNNAMED STREAM 4/22/2010
<b>Dissolved Metals</b>												
Iron	mg/L	---	---	---	---	---	47.8	22	---	---	---	---
Manganese	mg/L	---	---	---	---	---	6.89	6.1	---	---	---	---
Sulfate	mg/L	---	---	---	---	---	20.8	20.7	---	---	---	---
Nitrate	mg/L	---	---	---	---	---	<0.50	---	---	---	---	---
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	<0.50	---	---	---	---
<b>Metabolic Acids</b>												
Acetic acid	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Lactic Acid	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
n-Butanoic acid	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	---	<2.0	<2.0	<2.0
Propionic acid	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Pyruvic Acid	mg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
<b>Miscellaneous Analyses</b>												
Methane	ug/L	2	5	49	170D	7.7	470	240	240	2300	360	260
Ethane	ug/L	<1.0	<1.0	2.5	10	<1.0	37	15	14	110	31	11
Ethene	ug/L	<1.0	<1.0	7.8	36	<1.0	37	24	65	61	70	46
Chloride	mg/L	---	---	---	---	---	1460	1170	---	---	---	---
TOC	mg/L	---	---	---	---	---	16.7	3.7	---	---	---	---
Dehalococcoides sp.	cells/ml	$3.1 \times 10^3$	$<1.0 \times 10^1$	$4.8 \times 10^3$	$1.5 \times 10^4$	---	$6.7 \times 10^3$	$3.8 \times 10^2$	$1.2 \times 10^5$	$2.1 \times 10^4$	$9.7 \times 10^2$	$<2.2 \times 10^1$
Dehalococcoides sp. (1)		---	---	---	---	---	---	---	---	---	---	---
Dehalococcoides sp. (2)		---	---	---	---	---	---	---	---	---	---	---
Mn Degradars (3)		---	---	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>												
pH	--	---	---	---	---	---	---	---	---	---	---	---
ORP	mV	---	---	---	---	---	---	---	---	---	---	---
Dissolved Oxygen	mg/L	10.12	2.87	---	---	---	---	---	---	---	---	---
Specific Conductivity	ms/cm	---	---	---	---	---	---	---	---	---	---	---

**TABLE 5**  
**Water Quality Data**  
**Bioremediation Parameters**  
**2009 to Present**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT	UNITS	UNNAMED STREAM 10/12/2010	UNNAMED STREAM 1/4/2011	UNNAMED STREAM 4/5/2011	UNNAMED STREAM 10/25/2011	UNNAMED STREAM 1/17/2012	UNNAMED STREAM 4/3/2012	UNNAMED STREAM 8/21/2012	UNNAMED STREAM 2/6/2013	UNNAMED STREAM 4/11/2013
<b>Dissolved Metals</b>										
Iron	mg/L	---	---	---	---	---	---	---	---	---
Manganese	mg/L	---	---	---	---	---	---	---	---	---
Sulfate	mg/L	---	---	---	---	---	---	---	---	---
Nitrate	mg/L	---	---	---	---	---	---	---	---	---
Nitrate/Nitrogen	mg/L	---	---	---	---	---	---	---	---	---
<b>Metabolic Acids</b>										
Acetic acid	mg/L	4.5	<1.0	<1.0	<1.0	<1.0	<1.0	---	---	---
Lactic Acid	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	---	---	---
n-Butanoic acid	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	---	---	---
Propionic acid	mg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	---	---	---
Pyruvic Acid	mg/L	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	---	---	---
<b>Miscellaneous Analyses</b>										
Methane	ug/L	<2.0	780D	290	620D	200	350D	160	540D	370D
Ethane	ug/L	<1.0	57	19	52	12	26	14	33	17
Ethene	ug/L	<1.0	61	21	32	9.6	49	55	100	35
Chloride	mg/L	---	---	---	---	---	---	---	---	---
TOC	mg/L	---	---	---	---	---	---	16.2	4.5	13.8
Dehalococcoides sp.	cells/ml	1.6 x 10 <sup>3</sup>	5.2 x 10 <sup>2</sup>	<1.0 x 10 <sup>1</sup>	1.4 x 10 <sup>5</sup>	<4.0 X 10 <sup>1</sup>	4.5 x 10 <sup>3</sup>	<5.0 x 10 <sup>1</sup>	<5.9 x 10 <sup>4</sup> J	<1.1 x 10 <sup>1</sup>
Dehalococcoides sp.	(1)	---	---	---	---	---	---	---	---	---
Dehalococcoides sp.	(2)	---	---	---	---	---	---	---	---	---
Mn Degraders	(3)	---	---	---	---	---	---	---	---	---
<b>Field Parameters</b>										
pH	--	---	---	---	---	---	---	---	---	---
ORP	mV	---	---	---	---	---	---	---	---	---
Dissolved Oxygen	mg/L	8.48	---	4.39	---	---	---	---	---	---
Specific Conductivity	ms/cm	---	---	---	---	---	---	---	---	---







Notes: < = Less than detection limit  
 --- = Not Sampled  
 mg/L = Milligrams per liter  
 ug/L = Micrograms per liter  
 mV = Millivolt  
 ms/cm = Millisiemen per centimeter  
 TOC = total organic carbon  
 cells/ml = cells per milliliter  
 D = Result reported is from a diluted sample  
 Field parameter results reported are from the closest date to the analytical sampling  
 (1) = results from RNA analysis  
 (2) = results from biotrap analysis by Microbial Insights (cells/grams of beads)  
 (3) = results from biotrap analysis by Shaw (cells/grams of beads)  
 \* = Sample BW-03 collected on 1/28/2010 but was broken in transit, not analyzed.  
 J - Estimated concentration

**Table 6  
Permanganate Concentrations in Groundwater  
Former Varian Facility Site  
150 Sohier Road  
Beverly, Massachusetts**

Well ID	April 2011		October-November 2011		April 2012		November 2012		April-May 2013		October 2013		April 2014	
	NaMnO4 Result (mg/L)	Result (percent)	NaMnO4 Result (mg/L)	Result (percent)	NaMnO4 Result (mg/L)	Result (percent)	NaMnO4 Result (mg/L)	Result (percent)	NaMnO4 Result (mg/L)	Result (percent)	NaMnO4 Result (mg/L)	Result (percent)	NaMnO4 Result (mg/L)	Result (percent)
AP-12-BR	110,000	11.0	9,900	0.990	19,000	1.900	8,000	0.800	2,800	0.280	1100	0.110	ND(<0.1)	NA
AP-12-DO	0.3	0.00003	ND(<0.2)	NA	0.2	0.00002	9,100	0.910	17,000	1.700	180	0.018	1.5	0.00015
AP-12-S	---	---	---	---	ND(<0.2)	NA	---	---	0.5	0.00005	---	---	---	---
AP-19	ND(<0.1)	NA	ND(<0.2)	NA	ND(<0.2)	NA	ND(<0.2)	NA	ND(<0.2)	NA	ND(<0.1)	NA	ND(<0.1)	NA
AP-20	0.1	0.00001	ND(<0.2)	NA	ND(<0.2)	NA	ND(<0.2)	NA	0.1	0.00001	ND(<0.1)	NA	ND(<0.1)	NA
AP-21	8,200	0.8	1,000	0.1	2,200	0.220	1,900	0.190	500	0.050	ND(<0.1)	NA	ND(<0.1)	NA
AP-22	1.0	0.0001	3,200	0.32	10,000	1.000	9,700	0.970	400	0.04	1300	0.130	110	0.011
AP-26-DO	---	---	ND(<0.2)	NA	ND(<0.2)	NA	17.0	0.00170	ND(<0.2)	NA	12	0.001	5.6	0.00056
AP-27-DO	---	---	0.4	0.00004	ND(<0.2)	NA	57.0	0.00570	0.3	0.00003	ND(<0.1)	NA	ND(<0.1)	NA
AP-30-DO	20,000	2.0	---	---	---	---	---	---	---	---	---	---	---	---
AP-30R-DO	---	---	84,000	8.40	19,000	1.900	---	---	7,700	0.770	---	---	---	---
AP-31-DO	12,000	1.2	2,400	0.24	0.2	0.00002	---	---	100.0	0.01	120	0.012	5.0	0.0005
AP-32-DO	3.7	0.00037	ND(<0.2)	NA	0.2	0.00002	---	---	ND(<0.2)	NA	590	0.059	240	0.0240
B-2	---	---	---	---	---	---	ND(<0.2)	NA	---	---	---	---	---	---
BR-5_ZONE3	---	---	---	---	---	---	---	---	---	---	---	---	ND(<0.1)	NA
CL03-DO	---	---	---	---	---	---	---	---	---	---	---	---	0.7	0.00007
CL10-BR	0.2	0.00002	---	---	---	---	---	---	---	---	---	---	---	---
CL10-DO	250	0.0	7.1	0.00071	44.0	0.0044	---	---	85.0	0.0085	140	0.014	430	0.0430
CL10-S	ND(<0.1)	NA	---	---	---	---	---	---	---	---	---	---	---	---
MW-013	6,900	0.7	1,200	0.12	1,300	0.130	440	0.044	610	0.061	140	0.014	57.0	0.00570
OB-05-DO	---	---	---	---	---	---	---	---	---	---	---	---	2.5	0.00025
OB-06-DO	---	---	---	---	---	---	---	---	---	---	---	---	0.3	0.00003
OB-10-S	87	0.0087	---	---	---	---	---	---	---	---	---	---	---	---
OB-12-DO	---	---	190	0.01903	ND(<0.2)	NA	2,000	0.200	47.0	0.0047	ND(<0.1)	NA	1.3	0.00013
OB-19-DO	---	---	ND(<0.2)	NA	---	---	---	---	ND(<0.2)	NA	ND(<0.1)	NA	1.9	0.00019
OB-25-BR	9,200	0.9	---	---	ND(<0.2)	NA	17,000	1.700	1,200	0.120	ND(<0.1)	NA	0.2	0.00002
OB-26-BR	---	---	---	---	0.2	0.00002	12,000	1.200	ND(<0.2)	NA	ND(<0.1)	NA	---	---
OB-26-DO	---	---	---	---	---	---	---	---	---	---	---	---	---	---
OB-27-BR	14,000	1.4	1,500	0.1500	5,700	0.570	---	---	2,000	0.200	1200	0.120	1030	0.1030
OB-28-BR	15	0.0015	---	---	ND(<0.2)	NA	---	---	0.5	0.00005	---	---	---	---
OB-32-DO	1,200	0.1	670	0.0670	630.0	0.063	470	0.047	300	0.030	180	0.018	150	0.0150
OB-34-DO	18	0.0018	ND(<0.2)	NA	31	0.0031	31.0	0.0031	18.0	0.0018	20	0.002	---	---
OB 35-DO	ND(<0.1)	NA	ND(<0.2)	NA	ND(<0.2)	NA	ND(<0.2)	NA	ND(<0.2)	NA	20	0.002	14.0	0.00140
OB-36-DO	ND(<0.1)	NA	---	---	0.3	0.00003	ND(<0.2)	NA	---	---	---	---	5300	0.5300
OB-37-DO	180,000	18.0	34.0	0.003	9,700	0.9700	60.0	0.006	84.0	0.0084	ND(<0.1)	NA	ND(<0.1)	NA

Notes:

Color Key:

	Sample Dark Purple	No color indicates groundwater sample was clear
	Sample Medium Purple	--- = sample not collected
	Sample Light Purple	ND (<0.2) = Not detected at estimated detection limit.
	Sample Pink	NA = Not applicable or value does not appear when reporting to 2 significant figures.
	Sample Pale Pink	mg NaMnO4/L = milligrams of sodium permanganate per liter
	Light Brown	



**Table 7**  
**Permanganate Injection Volume**  
**2014 Treatment Program**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, MA**

Location	Sodium Permanganate Injection Volume (in gallons of 20% solution)	
	Total Injection Volume During This Reporting Period <sup>1</sup>	Planned Injection Volume 2014 Treatment Program
OB12-DO	395	380
OB25-BR	400	370
OB35-DO	77.25	75
AP-19	100	100
AP-20	100	100
AP-21	100	100
AP-22	100	100
<b>Total</b>	<b>1272.25</b>	<b>1225</b>

Notes:

1 - Injections conducted from July 23, 2014 through September 10, 2014

**TABLE 8**  
**Sub-Sab Soil Vapor Analytical Results**  
**Building 3 Area**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG2-SV1	BLDG2-SV2	BLDG3-VP1											BLDG3-VP2				
	4/10/2014 (2)	4/10/2014 (2)	8/5/2010	11/22/2010	2/22/2011	6/27/2011	1/24/2012	3/5/2012 (1)	11/7/2012	3/29/2013	8/5/2013	11/1/2013	4/29/2014 (2)	11/7/2012	3/29/2013	8/5/2013	11/1/2013	4/29/2014 (2)
1,1,1-Trichloroethane	<11000	<20	<19	<4.2	<26	<14	<13	<30	<17	<5.7	<45	<11	<260	<13	<9.5	<1.8	<2.0	<130
1,1,2,2-Tetrachloroethane	<2900	<4.9	<4.7	<1.1	<6.5	<3.4	<3.3	<7.4	<4.2	<1.4	<11	<2.6	<66	<3.2	<2.4	<0.44	<0.50	<32
1,1,2-Trichloroethane	<11000	<20	<19	<4.2	<26	<14	<13	<30	<17	<5.7	<45	<11	<260	<13	<9.5	<1.8	<2.0	<130
1,1-Dichloroethane	<8600	<15	<14	<3.2	<20	<10	<10	<22	<13	<4.3	<34	<7.9	<200	<9.7	<7.2	<1.3	<1.5	<95
1,1-Dichloroethene	<8400	<14	<14	<3.1	<19	<10	<9.7	<22	<12	<4.2	<33	<7.7	<190	<9.5	<7.0	<1.3	<1.5	<93
1,2-Dibromoethane (EDB)	---	---	---	---	<7.4	<3.8	<3.8	<8.4	---	---	---	---	<74	---	---	---	---	<36
1,2-Dichlorobenzene	---	---	---	---	<57	<30	<29	<66	---	---	---	---	<580	---	---	---	---	<280
1,2-Dichloroethane	<8600	<15	<14	<3.2	<20	<10	<10	<22	<13	<4.3	<34	<7.9	<200	<9.7	<7.2	<1.3	<1.5	<95
1,2-Dichloropropane	<9700	<17	<16	<3.6	<22	<12	<11	<25	<14	<4.8	<38	<9.0	<220	<11	<8.1	<1.5	<1.7	<110
1,3-Dichlorobenzene	---	---	---	---	<57	<30	<29	<66	---	---	---	---	<580	---	---	---	---	<280
1,4-Dichlorobenzene	---	---	---	---	<57	<30	<29	<66	---	---	---	---	<580	---	---	---	---	<280
1,4-Dioxane	---	---	---	---	---	<110	<110	<250	---	---	---	---	<2200	---	---	---	---	<1100
2-Butanone	---	---	---	---	<28	<15	15	<32	---	---	---	---	<280	---	---	---	---	<140
2-Hexanone	---	---	---	---	<20	<10	<10	<22	---	---	---	---	<200	---	---	---	---	<95
4-Methyl-2-pentanone	---	---	---	---	<39	<20	<20	<45	---	---	---	---	<390	---	---	---	---	<190
Acetone	<95000	<160	---	---	800	110	140	<250	150	120	<380	120	<2200	360	320	220D	140D	<1100
Benzene	---	---	---	---	<15	<7.9	<7.8	<17	---	---	---	---	<150	---	---	---	---	<74
Bromodichloromethane	<2900	<4.9	<4.7	<1.1	<6.5	<3.4	<3.3	<7.4	<4.2	<1.4	<11	<2.6	<66	<3.2	<2.4	<0.44	<0.50	<32
Bromoform	<22000	<37	<36	<8.0	<50	<26	<25	<57	<32	<11	<86	<20	<500	<25	<18	<3.4	<3.8	<240
Bromomethane	<8200	<14	<14	<3.0	<19	<9.7	<9.5	<21	<12	<4.1	<32	<7.6	<190	<9.2	<6.8	<1.3	<1.4	<91
Carbondisulfide	---	---	---	---	<15	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbontetrachloride	<1300	<2.3	<2.2	0.64	<3.0	<1.6	<1.6	<3.5	<2.0	<0.66	<5.3	<1.2	<31	<1.5	<1.1	0.52	0.54	<15
Chlorobenzene	<9700	<17	<16	<3.6	<22	<12	<11	<25	<14	<4.8	<38	<9.0	<220	<11	<8.1	<1.5	<1.7	<110
Chloroethane	<11000	<19	<18	<4.1	<25	---	---	---	<16	<5.5	<44	<10	---	<12	<9.2	2.5	<1.9	---
Chloroform	<10000	<18	<17	4.4	29	22	17	29	<15	9.5	<41	16	<240	19	13	25	14	<110
Chloromethane	<8600	<15	<14	<3.2	<20	---	---	---	<13	<4.3	<34	<7.9	---	<9.7	<7.2	<1.3	<1.5	---
cis-1,2-Dichloroethene	<8400	<14	<14	<3.1	<19	<10	<9.7	<22	<12	<4.2	<33	<7.7	<190	<9.5	<7.0	<1.3	<1.5	<93
cis-1,3-Dichloropropene	<19000	<33	<31	<7.0	<44	<23	<22	<50	<28	<9.5	<75	<18	<440	<22	<16	<3.0	<3.3	<210
Dibromochloromethane	<3600	<6.2	<6.0	<1.3	<8.3	<4.3	<4.2	<9.4	<5.3	<1.8	<14	<3.3	<83	<4.1	<3.0	<0.56	<0.63	<40
Dichloromethane	<7200	<12	<12	<2.7	<17	<8.6	<8.4	<19	<11	<3.6	<29	<6.7	<170	<8.2	<6.0	<1.1	<1.3	<81
Ethylbenzene	---	---	---	---	160	240	150	120	79	26	---	---	<420	24	<15	---	---	<200
Freon 113	---	---	---	---	<7.4	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	---	---	---	---	---	<68	<66	<150	---	---	---	---	<1300	---	---	---	---	<640
Methyltert-butylether	---	---	---	---	<34	<18	<18	<39	---	---	---	---	<350	---	---	---	---	<170
Naphthalene	---	---	---	---	---	<45	<44	<99	---	---	---	---	<880	---	---	---	---	<420
Styrene	---	---	---	---	<41	<21	<21	<47	---	---	---	---	<410	---	---	---	---	<200
Tetrachloroethene	1200000	11	1600	480	2100	2100D	1100	2100	1300	500	3200	1000	19000	61	26	130	31	9600
Toluene	---	---	---	---	<18	<9.3	<9.1	<20	---	---	---	---	<180	---	---	---	---	<87
trans-1,2-Dichloroethene	<8400	<14	<14	<3.1	<19	<10	<9.7	<22	<12	<4.2	<33	<7.7	<190	<9.5	<7.0	<1.3	<1.5	<93
Trans-1,3-Dichloropropene	<9500	<16	<16	<3.5	<22	<11	<11	<25	<14	<4.7	<38	<8.8	<220	<11	<8.0	<1.5	<1.7	<110
Trichloroethene	48000	31	510	130	1500	630	350	810	320	150	670	290	960	12	11	25	11	820
Trichlorofluoromethane	<12000	<20	<19	<4.4	<27	---	---	---	<17	<5.9	<47	<11	---	<13	<9.9	<1.8	<2.1	---
Vinyl acetate	---	---	---	---	<220	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl chloride	<1100	<2.0	<1.9	<0.42	<2.6	<1.4	<1.3	<3.0	<1.7	<0.57	<4.5	<1.1	<26	<1.3	<0.95	<0.18	<0.20	<13
m/p-xylene	---	---	---	---	610	990	600	480	340	100	---	---	<840	86	<30	---	---	<410
o-Xylene	---	---	---	---	57	87	57	<47	37	14	---	---	<420	32	<15	---	---	<200
Xylene (total)	---	---	---	---	670	1100	660	480	380	110	---	---	<840	120	<30	---	---	<410

**TABLE 8**  
**Sub-Sub Soil Vapor Analytical Results**  
**Building 3 Area**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG3-VP3												BLDG3-VP5			
	8/5/2010	11/22/2010	2/22/2011	6/27/2011	10/6/2011	1/10/2012	3/5/2012 (1)	11/7/2012	3/29/2013	8/5/2013	11/1/2013	4/29/2014 (2)	10/6/2011	1/10/2012	3/5/2012 (1)	11/7/2012
1,1,1-Trichloroethane	<400	<39	<290	<260	<19	<67	<71	<19	<10	<7.7	<12	<26	<3200	<1700	<1400	<180
1,1,2,2-Tetrachloroethane	<100	<9.8	<72	<65	<4.7	<17	<18	<4.8	<2.6	<1.9	<2.9	<6.5	<810	<430	<340	<46
1,1,2-Trichloroethane	<400	<39	<290	<260	<19	<67	<71	<19	<10	<7.7	<12	<26	<3200	<1700	<1400	<180
1,1-Dichloroethane	<300	<29	<220	<200	<14	<50	<53	<14	<7.9	<5.8	<8.7	<19	<2400	<1300	<1000	<140
1,1-Dichloroethene	<290	<29	<210	<190	<14	<49	<52	<14	<7.7	<5.6	<8.5	<19	<2400	<1200	<1000	<140
1,2-Dibromoethane (EDB)	---	---	<81	<74	---	<19	<20	---	---	---	---	<7.3	---	<480	<390	---
1,2-Dichlorobenzene	---	---	<630	<570	---	<150	<160	---	---	---	---	<57	---	<3700	<3000	---
1,2-Dichloroethane	<300	<29	<220	<200	<14	<50	<53	<14	<7.9	<5.8	<8.7	<19	<2400	<1300	<1000	<140
1,2-Dichloropropane	<340	<33	<240	<220	<16	<57	<60	<16	<8.9	<6.5	<9.9	<22	<2800	<1400	<1200	<160
1,3-Dichlorobenzene	---	---	<630	<570	---	<150	<160	---	---	---	---	<57	---	<3700	<3000	---
1,4-Dichlorobenzene	---	---	<630	<570	---	<150	<160	---	---	---	---	<57	---	<3700	<3000	---
1,4-Dioxane	---	---	---	<2200	---	<560	<590	---	---	---	---	<220	---	<14000	<11000	---
2-Butanone	---	---	<310	<280	---	<73	<77	---	---	---	---	<28	---	<1800	<1500	---
2-Hexanone	---	---	<220	<200	---	<50	<53	---	---	---	---	<19	---	<1300	<1000	---
4-Methyl-2-pentanone	---	---	<430	<390	---	<100	<110	---	---	---	---	<39	---	<2600	<2000	---
Acetone	---	---	<2400	<2200	1300	<560	<590	260	140	160	160	<220	<27000	<14000	<11000	<1500
Benzene	---	---	<170	<150	---	<39	<41	---	---	---	---	<15	---	<990	<790	---
Bromodichloromethane	<100	<9.8	<72	<65	<4.7	<17	<18	<4.8	<2.6	<1.9	<2.9	<6.5	<810	<430	<340	<46
Bromoform	<760	<74	<550	<490	<36	<130	<130	<36	<20	<15	<22	<49	<6200	<3200	<2600	<350
Bromomethane	<290	<28	<210	<190	<14	<48	<51	<14	<7.5	<5.5	<8.3	<19	<2300	<1200	<970	<130
Carbondisulfide	---	---	<160	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbontetrachloride	<47	<4.6	<34	<30	<2.2	<7.8	<8.3	<2.2	<1.2	1	<1.4	<3.0	<380	<200	<160	<22
Chlorobenzene	<340	<33	<240	<220	<16	<57	<60	<16	<8.9	<6.5	<9.9	<22	<2800	<1400	<1200	<160
Chloroethane	<390	<38	<280	---	<18	---	---	<19	<10	<7.4	<11	---	<3100	---	---	<180
Chloroform	<360	<35	<260	<230	<17	<60	<64	20	17	14	15	24	<2900	<1500	<1200	<170
Chloromethane	<300	<29	<220	---	<14	---	---	<14	<7.9	<5.8	<8.7	---	<2400	---	---	<140
cis-1,2-Dichloroethene	<290	<29	<210	<190	<14	<49	<52	32	22	19	19	20	<2400	<1200	<1000	<140
cis-1,3-Dichloropropene	<670	<65	<480	<430	<31	<110	<120	<32	<17	<13	<19	<43	<5400	<2800	<2300	<310
Dibromochloromethane	<130	<12	<91	<82	<6.0	<21	<22	<6.1	<3.3	<2.4	<3.7	<8.2	<1000	<540	<430	<59
Dichloromethane	<250	<25	<180	<160	<12	<42	<45	<12	<6.6	<4.9	<7.3	<16	<2100	<1100	<860	<120
Ethylbenzene	---	---	<460	<410	<30	<110	<110	<30	<17	---	---	<41	120000	60000	36000	8100
Freon 113	---	---	130	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	---	---	---	<1300	---	<340	<360	---	---	---	---	<130	---	<8500	<6800	---
Methyltert-butylether	---	---	<380	<340	---	<88	<93	---	---	---	---	<34	---	<2200	<1800	---
Naphthalene	---	---	---	<870	---	<220	<240	---	---	---	---	<86	---	<5700	<4500	---
Styrene	---	---	<450	<410	---	<100	<110	---	---	---	---	<40	---	<2700	<2100	---
Tetrachloroethene	36000	3000	51000	27000	410	4800	5000	2200	960	1200D	620	2000	<430	<230	350	62
Toluene	---	---	<200	<180	---	<46	<49	---	---	---	---	<18	---	<1200	<930	---
trans-1,2-Dichloroethene	<290	<29	<210	<190	<14	<49	<52	<14	<7.7	<5.6	<8.5	<19	<2400	<1200	<1000	<140
Trans-1,3-Dichloropropene	<330	<33	<240	<220	<16	<56	<59	<16	<8.7	<6.4	<9.7	<22	<2700	<1400	<1100	<150
Trichloroethene	3600	1000	4900	2100	42	640	620	600	390	380	270	460	<320	<170	<140	<18
Trichlorofluoromethane	<410	<40	<300	---	<19	---	---	<20	<11	<7.9	<12	---	<3300	---	---	<190
Vinyl acetate	---	---	<2400	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl chloride	<40	<3.9	<29	<26	<1.9	<6.7	<7.1	<1.9	<1.0	<0.77	<1.2	<2.6	<320	<170	<140	<18
m/p-xylene	---	---	<920	<830	<60	<210	<230	110	<33	---	---	<82	470000	240000	140000	40000D
o-Xylene	---	---	<460	<410	<30	<110	<110	38	<17	---	---	<41	47000	29000	18000	5700
Xylene (total)	---	---	<920	<830	<60	<210	<110	150	<33	---	---	<82	520000	270000	158000	46000D

**TABLE 8**  
**Sub-Sab Soil Vapor Analytical Results**  
**Building 3 Area**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m <sup>3</sup> )	BLDG3-VP6							BLDG3-VP7		BLDG6-SV1					
	8/5/2010	8/30/2010	11/22/2010	2/22/2011	6/27/2011	10/6/2011	1/10/2012	3/27/2012	4/10/2014 (2)	2/22/2011	6/3/2011	8/22/2011	10/6/2011	1/10/2012	4/10/2014 (2)
1,1,1-Trichloroethane	<57	<17	<11	<1700	<990	<8600	<8200	<95	<8.4	<1200	<2300	<1100	<280	<1600	<640
1,1,2,2-Tetrachloroethane	<14	<4.2	<2.8	<420	<250	<2200	<2000	<24	<2.1	<300	<570	<270	<69	<400	<160
1,1,2-Trichloroethane	<57	<17	<11	<1700	<990	<8600	<8200	<95	<8.4	<1200	<2300	<1100	<280	<1600	<640
1,1-Dichloroethane	<43	<13	<8.5	<1300	<740	<6500	<6100	<71	<6.3	<890	<1700	<820	<210	<1200	<480
1,1-Dichloroethene	<42	<12	<8.3	<1200	<730	<6300	<6000	<69	<6.2	<870	<1700	<800	<200	<1200	<470
1,2-Dibromoethane (EDB)	---	<4.8	---	<480	<280	---	<2300	<27	---	<340	---	---	---	<450	---
1,2-Dichlorobenzene	---	<37	---	<3700	<2200	---	<18000	<210	---	<2600	---	---	---	<3500	---
1,2-Dichloroethane	<43	<13	<8.5	<1300	<740	<6500	<6100	<71	<6.3	<890	<1700	<820	<210	<1200	<480
1,2-Dichloropropane	<48	<14	<9.7	<1400	<840	<7300	<6900	<80	<7.1	<1000	<1900	<930	<230	<1300	<540
1,3-Dichlorobenzene	---	<37	---	<3700	<2200	---	<18000	<210	---	<2600	---	---	---	<3500	---
1,4-Dichlorobenzene	---	<37	---	<3700	<2200	---	<18000	<210	---	<2600	---	---	---	<3500	---
1,4-Dioxane	---	<140	---	---	<8300	---	<68000	<790	---	---	---	---	---	<13000	---
2-Butanone	---	<18	---	<1800	<1100	---	<8800	<100	---	<1300	---	---	---	<1700	---
2-Hexanone	---	<13	---	<1300	<740	---	<6100	<71	---	<890	---	---	---	<1200	---
4-Methyl-2-pentanone	---	<25	---	<2500	<1500	---	<12000	<140	---	<1800	---	---	---	<2400	---
Acetone	---	410	---	24000	<130000D	150000	<68000	<790	130	<9900	<19000	---	<2300	<13000	<5300
Benzene	---	<9.8	---	<980	<580	---	<4800	<55	---	<700	---	---	---	<920	---
Bromodichloromethane	<14	<4.2	<2.8	<420	<250	<2200	<2000	<24	1.6	<300	<570	<270	<69	<400	<160
Bromoform	<110	<32	<22	<3200	<1900	<16000	<16000	<180	<16	<2300	<4300	<2100	<520	<3000	<1200
Bromomethane	<41	<12	<8.1	<1200	<710	<6200	<5800	<68	<6.0	<850	<1600	<790	<200	<1100	<460
Carbondsulfide	---	---	---	<950	---	---	---	---	---	<680	---	---	---	---	---
Carbontetrachloride	<6.6	<2.0	<1.3	<200	<120	<1000	<950	<11	<0.98	<140	<270	<130	<32	<180	<75
Chlorobenzene	<48	<14	<9.7	<1400	<840	<7300	<6900	<80	<7.1	<1000	<1900	<930	<230	<1300	<540
Chloroethane	<55	---	<11	<1600	---	<8400	---	---	<8.1	<1200	<2200	<1100	<270	---	<620
Chloroform	<51	<15	<10	<1500	<890	<7800	<7300	<85	39	<1100	<2000	<990	<250	<1400	<570
Chloromethane	<43	---	69	<1300	---	<6500	---	---	<6.3	<890	<1700	<820	<210	---	<480
cis-1,2-Dichloroethene	<42	<12	<8.3	<1200	<730	<6300	<6000	<69	13	<870	<1700	<800	<200	<1200	<470
cis-1,3-Dichloropropene	<94	<28	<19	<2800	<1700	<14000	<14000	<160	<14	<2000	<3800	<1800	<460	<2600	<1100
Dibromochloromethane	<18	<5.3	<3.6	<530	<310	<2700	<2600	<30	<2.7	<380	<720	<350	<87	<500	<200
Dichloromethane	<36	<11	<7.2	<1100	<630	<5500	<5200	<60	<5.3	<750	<1400	<690	<170	<1000	<400
Ethylbenzene	---	40	---	190000D	300000D	200000	180000	4700	---	<1900	---	<1700	<440	<2500	---
Freon 113	---	---	---	<480	---	---	---	---	---	<340	---	---	---	---	---
Hexachlorobutadiene	---	<84	---	---	<5000	---	<41000	<470	---	---	---	---	---	<7900	---
Methyltert-butylether	---	<22	---	<2200	<1300	---	<11000	<120	---	<1600	---	---	---	<2100	---
Naphthalene	---	<56	---	---	<3300	---	<27000	<320	---	---	---	---	---	<5300	---
Styrene	---	<26	---	<2600	<1600	---	<13000	<150	---	<1900	---	---	---	<2500	---
Tetrachloroethene	8.9J	<2.2	<1.5	<220	<130	<1200	<1100	210	520	85000	130000	70000	32000	100000	48000
Toluene	---	<11	---	<1100	1000	---	<5600	<65	---	<810	---	---	---	<1100	---
trans-1,2-Dichloroethene	<42	<12	<8.3	<1200	<730	<6300	<6000	<69	<6.2	<870	<1700	<800	<200	<1200	<470
Trans-1,3-Dichloropropene	<47	<14	<9.5	<1400	<830	<7200	<6800	<79	<7.0	<990	<1900	<910	<230	<1300	<530
Trichloroethene	<5.7	<1.7	1.2	<170	<99	<860	<820	170	95	34000	45000	40000	14000	41000	22000
Trichlorofluoromethane	<59	---	<12	<1700	---	<8900	---	---	<8.7	<1200	<2400	<1100	<280	---	<660
Vinyl acetate	---	---	---	<14000	---	---	---	---	---	<9900	---	---	---	---	---
Vinyl chloride	<5.7	<1.7	<1.1	<170	<99	<860	<820	<9.5	<0.84	<120	<230	<110	<28	<160	<64
m/p-xylene	---	240	---	680000D	1100000D	700000	640000	15000D	---	<3800	---	<3500	<880	<5000	---
o-Xylene	---	<27	---	68000	100000D	62000	61000	1200	---	<1900	---	<1700	<440	<2500	---
Xylene (total)	---	240	---	748000D	1200000D	760000	700000	16000D	---	<3800	---	<3500	<880	<5000	---

**Notes:**

< indicates chemical not detected, and concentration is less than reporting limit (value shown).

ug/m<sup>3</sup> = micrograms per cubic meter.

J = Estimated concentration.

D = Result is from a diluted sample.

--- Not analyzed for.

(1) = sample collected following scheduled temporary SVE system shutdown from 2/27/12 to 3/5/12.

(2) = sample collected following scheduled temporary SVE system shutdown from 4/3/14 to 4/29/14

**TABLE 9**  
**Indoor Air Analytical Results**  
**Building 3 Area**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG2-6															
	Environmental Testing Room Building 2 Basement															
	6/1/2009	10/8/2009	2/9/2010	5/19/2010	8/5/2010	11/22/2010	2/22/2011	6/27/2011	10/6/2011	1/10/2012	3/5/2012 (1)	11/7/2012	8/5/2013	11/1/2013	4/10/2014 (2)	4/29/2014 (2)
1,1,1-Trichloroethane	<39	<0.88	<1.5	<1.2	<0.94	<1.1	0.87	<0.92	<1.4	<7.7	<1.1	<5.2	<1.1	<18	<1.1	<1.0
1,1,2,2-Tetrachloroethane	<9.8	<0.22	<0.38	<0.31	<0.23	<0.28	<0.22	<0.23	<0.36	<1.9	<0.27	<1.3	<0.28	<4.4	<0.27	<0.26
1,1,2-Trichloroethane	<39	<0.88	<1.5	<1.2	<0.94	<1.1	<0.86	<0.92	<1.4	<7.7	<1.1	<5.2	<1.1	<18	<1.1	<1.0
1,1-Dichloroethane	<30	<0.66	<1.1	<0.93	<0.70	<0.84	<0.65	<0.69	<1.1	<5.8	<0.82	<3.9	<0.84	<13	<0.80	<0.78
1,1-Dichloroethene	<29	<0.65	<1.1	<0.91	<0.69	<0.83	<0.63	<0.68	<1.0	<5.6	<0.80	<3.8	<0.82	<13	<0.79	<0.76
1,2-Dibromoethane (EDB)	---	---	---	---	---	---	---	---	---	---	<0.31	---	---	---	---	<0.29
1,2-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	<2.4	---	---	---	---	<2.3
1,2-Dichloroethane	<30	<0.66	<1.1	<0.93	<0.70	<0.84	<0.65	<0.69	<1.1	<5.8	<0.82	<3.9	<0.84	<13	<0.80	<0.78
1,2-Dichloropropane	<33	<0.75	<1.3	<1.1	<0.80	<0.96	<0.73	<0.79	<1.2	<6.5	<0.93	<4.4	<0.95	<15	<0.91	<0.88
1,3-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	<2.4	---	---	---	---	<2.3
1,4-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	<2.4	---	---	---	---	<2.3
1,4-Dioxane	---	---	---	---	---	---	---	---	---	---	<9.1	---	---	---	---	<8.6
2-Butanone	---	---	---	---	---	---	---	---	---	---	3.2	---	---	---	---	14
2-Hexanone	---	---	---	---	---	---	---	---	---	---	<0.82	---	---	---	---	<0.78
4-Methyl-2-pentanone	---	---	---	---	---	---	---	---	---	---	<1.6	---	---	---	---	4.1
Acetone	---	---	---	---	---	---	---	330	290	240	210D	160	340D	440	95D	75D
Benzene	---	---	---	---	---	---	---	---	---	---	<0.64	---	---	---	---	<0.60
Bromodichloromethane	<9.8	<0.22	<0.38	<0.31	<0.23	<0.28	<0.22	<0.23	<0.36	<1.9	<0.27	<1.3	<0.28	<4.4	<0.27	<0.26
Bromoform	<75	<1.7	<2.9	<2.4	<1.8	<2.1	<1.6	<1.8	<2.7	<15	<2.1	<9.9	<2.1	<34	<2.0	<2.0
Bromomethane	<28	<0.63	<1.1	<0.89	<0.67	<0.81	<0.62	<0.66	<1.0	<5.5	<0.78	<3.7	<0.80	<13	<0.77	<0.74
Carbontetrachloride	<4.6	0.33	0.52	0.64	0.61	0.62	0.55	0.57	0.59	<0.90	0.57	<0.61	0.51	<2.1	0.48	0.49
Chlorobenzene	<33	<0.75	<1.3	<1.1	<0.80	<0.96	<0.73	<0.79	<1.2	<6.5	<0.93	<4.4	<0.95	<15	<0.91	<0.88
Chloroethane	<38	<0.85	<1.5	<1.2	<0.90	<1.1	<0.84	<0.89	<1.4	<7.4	---	<5.0	<1.1	<17	<1.0	---
Chloroform	<35	<0.79	<1.4	<1.1	<0.84	<1.0	<0.78	<0.83	<1.3	<6.9	<0.98	<4.7	<1.0	<16	<0.97	<0.93
Chloromethane	<30	0.89	1.1	1.2	1.1	1.1	1.2	1.1	1.1	<5.8	---	<3.9	<0.84	<13	0.9	---
cis-1,2-Dichloroethene	<29	<0.65	<1.1	<0.91	<0.69	<0.83	<0.63	<0.68	<1.0	<5.6	<0.80	<3.8	<0.82	<13	<0.79	<0.76
cis-1,3-Dichloropropene	<66	<1.5	<2.6	<2.1	<1.6	<1.9	<1.4	<1.5	<2.4	<13	<1.8	<8.7	<1.9	<29	<1.8	<1.7
Dibromochloromethane	<12	<0.28	<0.48	<0.39	<0.30	<0.36	<0.27	<0.29	<0.45	<2.4	<0.35	<1.7	<0.35	<5.6	<0.34	<0.33
Dichloromethane	<25	<0.56	<0.97	0.9	1.2	1.5	<0.55	0.64	<0.90	<4.9	<0.62	<3.3	<0.71	<11	<0.68	<0.66
Ethylbenzene	---	---	---	---	---	---	---	<1.5	<2.3	<12	<1.7	<8.3	---	---	---	<1.6
Hexachlorobutadiene	---	---	---	---	---	---	---	---	---	---	<5.5	---	---	---	---	<5.2
Methyltert-butylether	---	---	---	---	---	---	---	---	---	---	<1.4	---	---	---	---	<1.4
Naphthalene	---	---	---	---	---	---	---	---	---	---	<3.6	---	---	---	---	<3.5
Styrene	---	---	---	---	---	---	---	---	---	---	<1.7	---	---	---	---	<1.6
Tetrachloroethene	12	3.3	40	12	9	8.9	9.3	13	3.1	1.7	2.9	5.4	7.5	22	4.0	3.2
Toluene	---	---	---	---	---	---	---	---	---	---	1.8	---	---	---	---	1.3
trans-1,2-Dichloroethene	<29	<0.65	2.9	<0.91	<0.69	<0.83	<0.63	<0.68	<1.0	<5.6	2.5	<3.8	1.4	<13	<0.79	<0.76
Trans-1,3-Dichloropropene	<33	<0.74	<1.3	<1.0	<0.78	<0.94	<0.72	<0.77	<1.2	<6.4	<0.91	<4.4	<0.93	<15	<0.89	<0.86
Trichloroethene	<3.9	1.1	3.1	2.6	2.2	3.1	2	2.7	1.5	1.2	1.9	1.9	2.3	5.7	0.96	0.55
Trichlorofluoromethane	<41	1.1	1.7	2.1	2	1.6	1.4	1.9	1.7	<7.9	---	<5.4	1.8	<18	1.3	---
Vinyl chloride	<3.9	<0.088	<0.15	<0.12	<0.094	<0.090	<0.086	<0.092	<0.14	<0.77	<0.11	<0.52	<0.11	<1.8	<0.11	<0.10
m/p-xylene	---	---	---	---	---	---	---	<2.9	<4.5	<24	<3.5	<17	---	---	---	<3.3
o-Xylene	---	---	---	---	---	---	---	<1.5	<2.3	<12	<1.7	<8.3	---	---	---	<1.6
Xylene (total)	---	---	---	---	---	---	---	<2.9	<4.5	<24	<1.7	<17	---	---	---	<3.3

**TABLE 9**  
**Indoor Air Analytical Results**  
**Building 3 Area**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG2-7	BLDG3-1							
	Storage Room Building 2 Basement	Main Chemical Laboratory							
	4/10/2014 (2)	6/1/2009	10/8/2009	2/9/2010	5/19/2010	8/5/2010	11/22/2010	2/22/2011	3/5/2012 (1)
1,1,1-Trichloroethane	<1.7	<75	<3.0	<4.6	<2.8	<1.5	<0.88	<0.91	<1.1
1,1,2,2-Tetrachloroethane	<0.43	<19	<0.74	<1.2	<0.70	<0.38	<0.22	<0.23	<0.27
1,1,2-Trichloroethane	<1.7	<75	<3.0	<4.6	<2.8	<1.5	<0.88	<0.91	<1.1
1,1-Dichloroethane	<1.3	<56	<2.2	<3.5	<2.1	<1.1	<0.66	<0.68	<0.82
1,1-Dichloroethene	<1.2	<55	<2.2	<3.4	<2.0	<1.1	<0.65	<0.67	<0.80
1,2-Dibromoethane (EDB)	---	---	---	---	---	---	---	---	<0.31
1,2-Dichlorobenzene	---	---	---	---	---	---	---	---	<2.4
1,2-Dichloroethane	<1.3	<56	<2.2	<3.5	<2.1	<1.1	<0.66	<0.68	<0.82
1,2-Dichloropropane	<1.4	<63	<2.5	<3.9	<2.4	<1.3	<0.75	<0.78	<0.93
1,3-Dichlorobenzene	---	---	---	---	---	---	---	---	<2.4
1,4-Dichlorobenzene	---	---	---	---	---	---	---	---	<2.4
1,4-Dioxane	---	---	---	---	---	---	---	---	<9.1
2-Butanone	---	---	---	---	---	---	---	---	2.2
2-Hexanone	---	---	---	---	---	---	---	---	<0.82
4-Methyl-2-pentanone	---	---	---	---	---	---	---	---	<1.6
Acetone	87D	---	---	---	---	---	---	---	300D
Benzene	---	---	---	---	---	---	---	---	<0.64
Bromodichloromethane	<0.43	<19	<0.74	<1.2	<0.70	<0.38	<0.22	<0.23	<0.27
Bromoform	<3.2	<140	<5.6	<8.8	<5.3	<2.9	<1.7	<1.7	<2.1
Bromomethane	<1.2	<53	<2.1	<3.3	<2.0	<1.1	<0.63	<0.65	<0.78
Carbontetrachloride	0.46	<8.7	0.36	<0.54	0.58	0.3	0.55	0.58	0.56
Chlorobenzene	<1.4	<63	<2.5	<3.9	<2.4	<1.3	<0.75	<0.78	<0.93
Chloroethane	<1.6	<72	<2.9	<4.5	<2.7	<1.5	<0.85	<0.88	---
Chloroform	<1.5	<67	<2.7	<4.2	<2.5	<1.4	<0.79	<0.82	<0.98
Chloromethane	<1.3	<56	<2.2	<3.5	<2.1	<1.1	1.1	1.2	---
cis-1,2-Dichloroethene	<1.2	<55	<2.2	<3.4	<2.0	<1.1	<0.65	<0.67	<0.80
cis-1,3-Dichloropropene	<2.8	<120	<4.9	<7.7	<4.7	<2.5	<1.5	<1.5	<1.8
Dibromochloromethane	<0.54	<24	<0.94	<1.5	<0.88	<0.48	<0.28	<0.29	<0.35
Dichloromethane	<1.1	<47	<1.9	<2.9	<1.8	0.96	2.5	<0.58	<0.59
Ethylbenzene	---	---	---	---	---	---	---	---	<1.7
Hexachlorobutadiene	---	---	---	---	---	---	---	---	<5.5
Methyltert-butylether	---	---	---	---	---	---	---	---	<1.4
Naphthalene	---	---	---	---	---	---	---	---	<3.6
Styrene	---	---	---	---	---	---	---	---	<1.7
Tetrachloroethene	0.36	18	23	3.8	0.72	2	1.1	1.3	3
Toluene	---	---	---	---	---	---	---	---	1.1
trans-1,2-Dichloroethene	<1.2	<55	<2.2	<3.4	<2.0	<1.1	0.67	<0.67	1.4
Trans-1,3-Dichloropropene	<1.4	<62	<2.5	<3.9	<2.3	<1.3	<0.74	<0.76	<0.91
Trichloroethene	0.37	<7.5	8.2	4.4	<0.28	0.61	0.37	0.13	0.31
Trichlorofluoromethane	<1.8	<77	<3.1	<4.8	<2.9	<1.6	1.6	1.4	---
Vinyl chloride	<0.17	<7.5	<0.30	<0.46	<0.28	<0.15	<0.088	0.16	<0.11
m/p-xylene	---	---	---	---	---	---	---	---	<3.5
o-Xylene	---	---	---	---	---	---	---	---	<1.7
Xylene (total)	---	---	---	---	---	---	---	---	<3.5

**TABLE 9**  
**Indoor Air Analytical Results**  
**Building 3 Area**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG3-2													
	Chemical Laboratory Bench Testing Room													
	6/1/2009	10/8/2009	2/9/2010	5/19/2010	8/5/2010	11/22/2010	2/22/2011	6/27/2011	10/6/2011	1/10/2012	3/5/2012 (1)	8/5/2013	11/1/2013	4/29/2014 (2)
1,1,1-Trichloroethane	<100	<4.5	<9.2	<6.1	<1.8	<1.0	<1.5	<3.4	<1.5	<18	<1.1	<3.6	<4.0	<2.3
1,1,2,2-Tetrachloroethane	<25	<1.1	<2.3	<1.5	<0.46	<0.26	<0.38	<0.85	<0.37	<4.6	<0.28	<0.90	<1.0	<0.57
1,1,2-Trichloroethane	<100	<4.5	<9.2	<6.1	<1.8	<1.0	<1.5	<3.4	<1.5	<18	<1.1	<3.6	<4.0	<2.3
1,1-Dichloroethane	<75	<3.4	<6.9	<4.6	<1.4	<0.78	<1.1	<2.6	<1.1	<14	<0.83	<2.7	<3.0	<1.7
1,1-Dichloroethene	<73	<3.3	<6.7	<4.5	<1.4	<0.77	<1.1	<2.5	<1.1	<13	<0.81	<2.6	<3.0	<1.7
1,2-Dibromoethane (EDB)	---	---	---	---	---	---	---	---	---	---	<0.31	---	---	<0.65
1,2-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	<2.4	---	---	<5.1
1,2-Dichloroethane	<75	<3.4	<6.9	<4.6	<1.4	<0.78	<1.1	<2.6	<1.1	<14	<0.83	<2.7	<3.0	<1.7
1,2-Dichloropropane	<85	<3.8	<7.8	<5.2	<1.6	<0.89	<1.3	<2.9	<1.2	<16	<0.94	<3.0	<3.4	<2.0
1,3-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	<2.4	---	---	<5.1
1,4-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	<2.4	---	---	<5.1
1,4-Dioxane	---	---	---	---	---	---	---	---	---	---	<9.2	---	---	<19
2-Butanone	---	---	---	---	---	---	---	---	---	---	3.6	---	---	19
2-Hexanone	---	---	---	---	---	---	---	---	---	---	<0.83	---	---	<1.7
4-Methyl-2-pentanone	---	---	---	---	---	---	---	---	---	---	<1.7	---	---	<3.4
Acetone	---	---	---	---	---	---	---	1900	400	550	410D	2900D	1100D	2000D
Benzene	---	---	---	---	---	---	---	---	---	---	<0.64	---	---	<1.3
Bromodichloromethane	<25	<1.1	<2.3	<1.5	<0.46	<0.26	<0.38	<0.85	<0.37	<4.6	<0.28	<0.90	<1.0	<0.57
Bromoform	<190	<8.6	<17	<12	<3.5	<2.0	<2.9	<6.5	<2.8	<35	<2.1	<6.8	<7.6	<4.4
Bromomethane	<72	<3.2	<6.6	<4.4	<1.3	<0.75	<1.1	<2.4	<1.0	<13	<0.79	<2.6	<2.9	<1.6
Carbontetrachloride	<12	<0.53	<1.1	<0.71	0.4	0.63	0.54	0.53	0.62	<2.1	0.56	0.58	0.52	0.46
Chlorobenzene	<85	<3.8	<7.8	<5.2	<1.6	<0.89	<1.3	<2.9	<1.2	<16	<0.94	<3.0	<3.4	<2.0
Chloroethane	<97	<4.4	<8.9	<5.9	<1.8	<1.0	<1.5	<3.3	<1.4	<18	---	<3.5	<3.9	---
Chloroform	<90	<4.1	<8.3	<5.5	<1.7	<0.94	<1.4	<3.1	<1.3	<17	<0.99	<3.2	<3.6	<2.1
Chloromethane	<75	<3.4	<6.9	<4.6	<1.4	1.2	1.2	<2.6	<1.1	<14	---	<2.7	<3.0	---
cis-1,2-Dichloroethene	<73	<3.3	<6.7	<4.5	<1.4	<0.77	<1.1	<2.5	<1.1	<13	<0.81	<2.6	<3.0	<1.7
cis-1,3-Dichloropropene	<170	<7.5	<15	<10	<3.1	<1.7	<2.5	<5.7	<2.4	<31	<1.8	<6.0	<6.7	<3.8
Dibromochloromethane	<32	<1.4	<2.9	<1.9	<0.59	<0.33	<0.48	<1.1	<0.46	<5.8	<0.35	<1.1	<1.3	<0.73
Dichloromethane	<63	<2.9	<5.8	<3.9	<1.2	0.82	<0.96	<2.2	<0.92	<12	<0.59	<2.3	<2.5	<1.5
Ethylbenzene	---	---	---	---	---	---	---	<5.4	<2.3	<29	<1.7	---	---	<3.6
Hexachlorobutadiene	---	---	---	---	---	---	---	---	---	---	<5.5	---	---	<11
Methyltert-butylether	---	---	---	---	---	---	---	---	---	---	<1.4	---	---	<3.0
Naphthalene	---	---	---	---	---	---	---	---	---	---	<3.7	---	---	<7.7
Styrene	---	---	---	---	---	---	---	---	---	---	<1.7	---	---	<3.6
Tetrachloroethene	46	6.4	3.7	2	2.3	3.1	1.3	1.2	1	<2.4	1.7	1.6	2.4	1.9
Toluene	---	---	---	---	---	---	---	---	---	---	1.4	---	---	13
trans-1,2-Dichloroethene	<73	<3.3	<6.7	<4.5	<1.4	<0.77	<1.1	<2.5	<1.1	<13	3	<2.6	<3.0	<1.7
Trans-1,3-Dichloropropene	<83	<3.8	<7.7	<5.1	<1.5	<0.87	<1.3	<2.8	<1.2	<15	<0.92	<3.0	<3.4	<1.9
Trichloroethene	19	3.2	5.3	0.79	0.6	1.6	0.42	0.93	1.3	<1.8	1.2	0.58	1	0.37
Trichlorofluoromethane	<100	<4.7	<9.5	<6.3	<1.9	1.6	<1.6	<3.5	1.7	<19	---	<3.7	<4.2	---
Vinyl chloride	<10	<0.45	<0.92	<0.61	<0.18	<0.10	<0.15	<0.34	<0.15	<1.8	<0.11	<0.36	<0.40	<0.23
m/p-xylene	---	---	---	---	---	---	---	<11	<4.6	<58	<3.5	---	---	<7.3
o-Xylene	---	---	---	---	---	---	---	<5.4	<2.3	<29	<1.7	---	---	<3.6
Xylene (total)	---	---	---	---	---	---	---	<11	<4.6	<58	<3.5	---	---	<7.3

**TABLE 9**  
**Indoor Air Analytical Results**  
**Building 3 Area**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG3-3																	
	MID Stockroom																	
	6/1/2009	10/8/2009	11/2/2009	11/12/2009	12/21/2009	2/9/2010	5/19/2010	8/5/2010	11/22/2010	2/22/2011	6/27/2011	10/6/2011	1/10/2012	3/5/2012 (1)	11/7/2012	8/5/2013	11/1/2013	4/29/2014 (2)
1,1,1-Trichloroethane	<9.5	<10	<8.8	<8.5	<4.6	<6.2	<0.91	<1.9	<0.85	<2.2	<1.7	<1.6	<11	<1.1	<2.2	<1.9	<1.8	<2.6
1,1,2,2-Tetrachloroethane	<2.4	<2.5	<2.2	<2.1	<1.2	<1.6	<0.23	<0.47	<0.21	<0.55	<0.43	<0.39	<2.7	<0.28	<0.54	<0.48	<0.45	<0.66
1,1,2-Trichloroethane	<9.5	<10	<8.8	<8.5	<4.6	<6.2	<0.91	<1.9	<0.85	<2.2	<1.7	<1.6	<11	<1.1	<2.2	<1.9	<1.8	<2.6
1,1-Dichloroethane	<7.1	<7.5	<6.6	<6.4	<3.5	<4.7	<0.68	<1.4	<0.64	<1.6	<1.3	<1.2	<8.1	<0.84	<1.6	<1.4	<1.4	<2.0
1,1-Dichloroethene	<7.0	<7.3	<6.5	<6.2	<3.4	<4.6	<0.67	<1.4	<0.62	<1.6	<1.3	<1.2	<7.9	<0.82	<1.6	<1.4	<1.3	<1.9
1,2-Dibromoethane (EDB)	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.32	---	---	---	<0.74
1,2-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---	---	<2.5	---	---	---	<5.8
1,2-Dichloroethane	<7.1	<7.5	<6.6	<6.4	<3.5	<4.7	<0.68	<1.4	<0.64	<1.6	<1.3	<1.2	<8.1	<0.84	<1.6	<1.4	<1.4	<2.0
1,2-Dichloropropane	<8.1	<8.5	<7.5	<7.2	<3.9	<5.3	<0.78	<1.6	<0.72	<1.9	<1.5	<1.3	<9.2	<0.95	<1.8	<1.6	<1.5	<2.2
1,3-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---	---	<2.5	---	---	---	<5.8
1,4-Dichlorobenzene	---	---	---	---	---	---	---	---	---	---	---	---	---	<2.5	---	---	---	<5.8
1,4-Dioxane	---	---	---	---	---	---	---	---	---	---	---	---	---	<9.4	---	---	---	<22
2-Butanone	---	---	---	---	---	---	---	---	---	---	---	---	---	4	---	---	---	5.1
2-Hexanone	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.84	---	---	---	<2.0
4-Methyl-2-pentanone	---	---	---	---	---	---	---	---	---	---	---	---	---	<1.4	---	---	---	<3.9
Acetone	---	---	---	---	---	---	---	---	---	---	810	340	240	370D	1400D	860D	400D	880D
Benzene	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.65	---	---	---	<1.5
Bromodichloromethane	<2.4	<2.5	<2.2	<2.1	<1.2	<1.6	<0.23	<0.47	<0.21	<0.55	<0.43	<0.39	<2.7	<0.28	<0.54	<0.48	<0.45	<0.66
Bromoform	<18	<19	<17	<16	<8.8	<12	<1.7	<3.6	<1.6	<4.2	<3.3	<3.0	<20	<2.1	<4.1	<3.6	<3.4	<5.0
Bromomethane	<6.8	<7.2	<6.3	<6.1	<3.3	<4.5	<0.65	<1.3	<0.61	<1.6	<1.2	<1.1	<7.7	<0.80	<1.5	<1.4	<1.3	<1.9
Carbontetrachloride	<1.1	<1.2	<1.0	<0.99	<0.54	<0.73	0.5	0.52	0.57	0.54	0.54	0.55	<1.3	0.56	<0.25	0.52	0.58	0.45
Chlorobenzene	<8.1	<8.5	<7.5	<7.2	<3.9	<5.3	<0.78	<1.6	<0.72	<1.9	<1.5	<1.3	<9.2	<0.95	<1.8	<1.6	<1.5	<2.2
Chloroethane	<9.2	<9.6	<8.5	<8.2	<4.5	<6.0	<0.88	<1.8	<0.82	<2.1	<1.7	<1.5	<10	---	<2.1	<1.9	<1.7	---
Chloroform	<8.5	<9.0	<7.9	<7.7	<4.2	<5.6	<0.82	<1.7	<0.77	<2.0	<1.6	<1.4	<9.7	<1.0	<1.9	<1.7	<1.6	<2.4
Chloromethane	<7.1	<7.5	<6.6	<6.4	<3.5	<4.7	0.96	<1.4	1.1	<1.6	<1.3	<1.2	<8.1	---	<1.6	<1.4	<1.4	---
cis-1,2-Dichloroethene	<7.0	<7.3	<6.5	<6.2	<3.4	<4.6	<0.67	<1.4	<0.62	<1.6	<1.3	<1.2	<7.9	<0.82	<1.6	<1.4	<1.3	<1.9
cis-1,3-Dichloropropene	<16	<17	<15	<14	<7.7	<10	<1.5	<3.1	<1.4	<3.7	<2.9	<2.6	<18	<1.9	<3.6	<3.2	<3.0	<4.4
Dibromochloromethane	<3.0	<3.2	<2.8	<2.7	<1.5	<2.0	<0.29	<0.59	<0.27	<0.69	<0.55	<0.50	<3.4	<0.36	<0.68	<0.61	<0.57	<0.83
Dichloromethane	<6.0	<6.3	<5.6	<5.4	<2.9	<4.0	<0.58	<1.2	0.58	<1.4	<1.1	<1.0	<6.8	<0.60	<1.4	<1.2	<1.1	<1.7
Ethylbenzene	---	---	---	---	---	---	---	---	---	<2.7	<2.5	<17	<1.8	<3.4	---	---	---	<4.2
Hexachlorobutadiene	---	---	---	---	---	---	---	---	---	---	---	---	---	<5.6	---	---	---	<13
Methyltert-butylether	---	---	---	---	---	---	---	---	---	---	---	---	---	<1.5	---	---	---	<3.5
Naphthalene	---	---	---	---	---	---	---	---	---	---	---	---	---	<3.7	---	---	---	<8.7
Styrene	---	---	---	---	---	---	---	---	---	---	---	---	---	<1.8	---	---	---	<4.1
Tetrachloroethene	23	750	520	470	2.1	3.7	0.63	1.2	1	0.86	0.83	0.83	<1.4	65	1.1	0.89	0.84	99
Toluene	---	---	---	---	---	---	---	---	---	---	---	---	---	2.8	---	---	---	5.4
trans-1,2-Dichloroethene	<7.0	<7.3	<6.5	<6.2	<3.4	<4.6	<0.67	<1.4	<0.62	<1.6	<1.3	<1.2	<7.9	2.4	<1.6	<1.4	<1.3	<1.9
Trans-1,3-Dichloropropene	<7.9	<8.3	<7.4	<7.1	<3.9	<5.2	<0.76	<1.6	<0.71	<1.8	<1.4	<1.3	<9.0	<0.94	<1.8	<1.6	<1.5	<2.2
Trichloroethene	8.6	360	220	180	0.69	4.4	0.42	0.32	0.41	0.34	0.35	0.7	<1.1	4	0.32	0.39	0.39	1.7
Trichlorofluoromethane	<9.8	<10	<9.1	<8.8	<4.8	<6.4	1.7	<1.9	1.5	<2.3	<1.8	<1.6	<11	---	<2.2	<2.0	<1.9	---
Vinyl chloride	<0.95	<1.0	<0.88	<0.85	<0.46	<0.62	<0.091	<0.19	<0.085	<0.22	<0.17	<0.16	<1.1	<0.11	<0.22	<0.19	<0.18	<0.26
m/p-xylene	---	---	---	---	---	---	---	---	---	---	<5.5	<5.0	<34	<3.6	<6.9	---	---	<8.3
o-Xylene	---	---	---	---	---	---	---	---	---	---	<2.7	<2.5	<17	<1.8	<3.4	---	---	<4.2
Xylene (total)	---	---	---	---	---	---	---	---	---	---	<5.5	<5.0	<34	<13.6	<6.9	---	---	<8.3



**TABLE 9**  
**Indoor Air Analytical Results**  
**Building 3 Area**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG3-4												
	Building 3 Machine Shop												
	6/1/2009	7/16/2009	10/8/2009	2/9/2010	5/19/2010	8/5/2010	11/22/2010	2/22/2011	3/5/2012 (1)	11/7/2012	8/5/2013	11/1/2013	4/29/2014 (2)
1,1,1-Trichloroethane	<110	21	12	<18	<3.5	<1.9	<5.4	<8.9	<1.1	<2.8	<2.6	<3.2	<3.1
1,1,2,2-Tetrachloroethane	<27	<1.2	<1.1	<4.6	<0.88	<0.48	<1.4	<2.2	<0.28	<0.70	<0.65	<0.81	<0.77
1,1,2-Trichloroethane	<110	<4.6	<4.5	<18	<3.5	<1.9	<5.4	<8.9	<1.1	<2.8	<2.6	<3.2	<3.1
1,1-Dichloroethane	<80	<3.5	<3.4	<14	<2.6	<1.4	<4.1	<6.7	<0.84	<2.1	<1.9	<2.4	<2.3
1,1-Dichloroethene	<78	<3.4	<3.3	<14	<2.6	<1.4	<4.0	<6.6	<0.82	<2.1	<1.9	<2.4	<2.3
1,2-Dibromoethane (EDB)	---	---	---	---	---	---	---	---	<0.32	---	---	---	<0.87
1,2-Dichlorobenzene	---	---	---	---	---	---	---	---	<2.5	---	---	---	<6.8
1,2-Dichloroethane	<80	<3.5	<3.4	<14	<2.6	<1.4	<4.1	<6.7	<0.84	<2.1	<1.9	<2.4	<2.3
1,2-Dichloropropane	<90	<3.9	<3.8	<16	<3.0	<1.6	<4.6	<7.6	<0.95	<2.4	<2.2	<2.7	<2.6
1,3-Dichlorobenzene	---	---	---	---	---	---	---	---	<2.5	---	---	---	<6.8
1,4-Dichlorobenzene	---	---	---	---	---	---	---	---	<2.5	---	---	---	<6.8
1,4-Dioxane	---	---	---	---	---	---	---	---	<9.3	---	---	---	<26
2-Butanone	---	---	---	---	---	---	---	---	2.5	---	---	---	11
2-Hexanone	---	---	---	---	---	---	---	---	<0.84	---	---	---	<2.3
4-Methyl-2-pentanone	---	---	---	---	---	---	---	---	<1.7	---	---	---	<4.6
Acetone	---	---	---	---	---	---	---	---	870D	2100D	1000D	780D	2300D
Benzene	---	---	---	---	---	---	---	---	<0.65	---	---	---	<1.8
Bromodichloromethane	<27	<1.2	<1.1	<4.6	<0.88	<0.48	<1.4	<2.2	<0.28	<0.70	<0.65	<0.81	<0.77
Bromoform	<200	<8.8	<8.6	<35	<6.7	<3.7	<10	<17	<2.1	<5.3	<4.9	<6.1	<5.8
Bromomethane	<76	<3.3	<3.2	<13	<2.5	<1.4	<3.9	<6.4	<0.80	<2.0	<1.8	<2.3	<2.2
Carbontetrachloride	<12	<0.54	<0.53	<2.2	0.52	0.56	<0.63	<1.0	0.55	0.41	0.56	0.52	0.43
Chlorobenzene	<90	<3.9	<3.8	<16	<3.0	<1.6	<4.6	<7.6	<0.95	<2.4	<2.2	<2.7	<2.6
Chloroethane	<100	<4.5	<4.4	<18	<3.4	<1.9	<5.3	<8.6	---	<2.7	<2.5	<3.1	---
Chloroform	<95	<4.2	<4.1	<17	<3.2	<1.7	<4.9	<8.0	<1.0	<2.5	<2.3	<2.9	<2.8
Chloromethane	<80	<3.5	<3.4	<14	<2.6	<1.4	<4.1	<6.7	---	<2.1	<1.9	<2.4	---
cis-1,2-Dichloroethene	<78	<3.4	<3.3	<14	<2.6	<1.4	<4.0	<6.6	<0.82	<2.1	<1.9	<2.4	<2.3
cis-1,3-Dichloropropene	<180	<7.7	<7.5	<31	<5.9	<3.2	<9.1	<15	<1.9	<4.7	<4.3	<5.4	<5.1
Dibromochloromethane	<34	<1.5	<1.4	<5.9	<1.1	<0.61	<1.7	<2.8	<0.35	<0.89	<0.82	<1.0	<0.97
Dichloromethane	<67	<2.9	<2.9	<12	<2.2	<1.2	<3.4	<5.7	<0.60	<1.8	<1.6	<2.0	<1.9
Ethylbenzene	---	---	---	---	---	---	---	<14	<1.8	<4.5	---	---	<4.9
Hexachlorobutadiene	---	---	---	---	---	---	---	---	<5.6	---	---	---	<15
Methyltert-butylether	---	---	---	---	---	---	---	---	<1.5	---	---	---	<4.1
Naphthalene	---	---	---	---	---	---	---	---	<3.7	---	---	---	<10
Styrene	---	---	---	---	---	---	---	---	<1.7	---	---	---	<4.8
Tetrachloroethene	72	25	8.2	3	0.9	2.1	1.8	1.2	5.9	1.8	0.9	1.6	5.7
Toluene	---	---	---	---	---	---	---	---	1.4	---	---	---	14
trans-1,2-Dichloroethene	<78	<3.4	<3.3	<14	<2.6	<1.4	<4.0	<6.6	2.4	<2.1	<1.9	<2.4	<2.3
Trans-1,3-Dichloropropene	<88	<3.9	<3.8	<15	<2.9	<1.6	<4.5	<7.5	<0.93	<2.3	<2.2	<2.7	<2.6
Trichloroethene	30	10	5.4	2.1	0.4	0.25	0.7	<0.89	0.7	0.4	<0.26	0.55	<0.31
Trichlorofluoromethane	<110	<4.8	<4.7	<19	<3.6	<2.0	<5.6	<9.2	---	<2.9	<2.7	<3.3	---
Vinyl chloride	<11	<0.46	<0.45	<1.8	<0.35	<0.19	<0.54	<0.89	<0.11	<0.28	<0.26	<0.32	<0.31
m/p-xylene	---	---	---	---	---	---	---	<28	<3.6	<8.9	---	---	<9.8
o-Xylene	---	---	---	---	---	---	---	<14	<1.8	<4.5	---	---	<4.9
Xylene (total)	---	---	---	---	---	---	---	<28	<3.6	<8.9	---	---	<9.8

**TABLE 9**  
**Indoor Air Analytical Results**  
**Building 3 Area**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG3-5								BLDG3-6
	Boiler room, Building 3 Basement								Building 3 Storage Room
	6/1/2009	10/8/2009	2/9/2010	5/19/2010	8/5/2010	11/22/2010	2/22/2011	3/5/2012 (1)	6/27/2011
1,1,1-Trichloroethane	<0.91	<0.91	<0.88	<0.89	<1.8	<1.1	<0.88	<1.1	<1.8
1,1,2,2-Tetrachloroethane	<0.23	<0.23	<0.22	<0.22	<0.46	<0.26	<0.22	<0.26	<0.45
1,1,2-Trichloroethane	<0.91	<0.91	<0.88	<0.89	<1.8	<1.1	<0.88	<1.1	<1.8
1,1-Dichloroethane	<0.68	<0.68	<0.66	<0.67	<1.4	<0.79	<0.66	<0.79	<1.4
1,1-Dichloroethene	<0.66	<0.66	<0.65	<0.66	<1.3	<0.78	<0.65	<0.77	<1.3
1,2-Dibromoethane (EDB)	---	---	---	---	---	---	---	<0.30	---
1,2-Dichlorobenzene	---	---	---	---	---	---	---	<2.3	---
1,2-Dichloroethane	<0.68	<0.68	<0.66	<0.67	<1.4	<0.79	<0.66	<0.79	<1.4
1,2-Dichloropropane	<0.77	<0.77	<0.75	<0.76	<1.6	<0.90	<0.75	<0.90	<1.5
1,3-Dichlorobenzene	---	---	---	---	---	---	---	<2.3	---
1,4-Dichlorobenzene	---	---	---	---	---	---	---	<2.3	---
1,4-Dioxane	---	---	---	---	---	---	---	<8.8	---
2-Butanone	---	---	---	---	---	---	---	<1.1	---
2-Hexanone	---	---	---	---	---	---	---	<0.79	---
4-Methyl-2-pentanone	---	---	---	---	---	---	---	<1.6	---
Acetone	---	---	---	---	---	---	---	200D	800
Benzene	---	---	---	---	---	---	---	<0.61	---
Bromodichloromethane	<0.23	<0.23	<0.22	<0.22	<0.46	<0.26	<0.22	<0.26	<0.45
Bromoform	<1.7	<1.7	<1.7	<1.7	<3.5	<2.0	<1.7	<2.0	<3.4
Bromomethane	<0.65	<0.65	<0.63	<0.64	<1.3	<0.76	<0.63	<0.75	<1.3
Carbontetrachloride	0.77	0.46	0.65	0.45	0.46	0.64	0.59	0.55	0.55
Chlorobenzene	<0.77	<0.77	<0.75	<0.76	<1.6	<0.90	<0.75	<0.90	<1.5
Chloroethane	<0.88	<0.88	<0.85	<0.86	<1.8	<1.0	<0.85	---	<1.8
Chloroform	<0.82	<0.82	<0.79	<0.80	<1.7	<0.95	<0.79	<0.95	<1.6
Chloromethane	0.95	1	1.1	0.86	<1.4	1.3	1.2	---	<1.4
cis-1,2-Dichloroethene	<0.66	<0.66	<0.65	<0.66	<1.3	<0.78	<0.65	<0.77	<1.3
cis-1,3-Dichloropropene	<1.5	<1.5	<1.5	<1.5	<3.1	<1.8	<1.5	<1.8	<3.0
Dibromochloromethane	<0.29	<0.29	<0.28	<0.28	<0.58	<0.33	<0.28	<0.33	<0.57
Dichloromethane	<0.57	<0.57	<0.56	<0.57	1.9	<0.67	<0.56	<0.60	<1.1
Ethylbenzene	---	---	---	---	---	---	---	<1.7	<2.9
Hexachlorobutadiene	---	---	---	---	---	---	---	<5.3	---
Methyltert-butylether	---	---	---	---	---	---	---	<1.4	---
Naphthalene	---	---	---	---	---	---	---	<3.5	---
Styrene	---	---	---	---	---	---	---	<1.7	---
Tetrachloroethene	7	1.1	5.2	0.9	4.2	1.1	1.1	1.9	0.67
Toluene	---	---	---	---	---	---	---	0.88	---
trans-1,2-Dichloroethene	<0.66	<0.66	<0.65	<0.66	<1.3	<0.78	<0.65	0.98	<1.3
Trans-1,3-Dichloropropene	<0.76	<0.76	<0.74	<0.75	<1.5	<0.88	<0.74	<0.88	<1.5
Trichloroethene	2.5	0.38	5	<0.089	0.19	0.12	<0.088	0.22	0.4
Trichlorofluoromethane	1.7	1.2	1.7	1.6	<1.9	1.7	1.4	---	<1.9
Vinyl chloride	<0.091	<0.091	<0.088	<0.089	<0.18	<0.11	<0.088	<0.11	<0.18
m/p-xylene	---	---	---	---	---	---	---	<3.4	<5.8
o-Xylene	---	---	---	---	---	---	---	<1.7	<2.9
Xylene (total)	---	---	---	---	---	---	---	<3.4	<5.8

Notes

< indicates chemical not detected, and concentration is less than reporting limit (value shown).

ug/m<sup>3</sup> = micrograms per cubic meter.

--- = Not Sampled

D = Result is from a diluted sample.

System Startup occurred in January 2010

(1) = sample collected following scheduled temporary SVE system shutdown from 2/27/12 to 3/5/12

(2) = sample collected following scheduled temporary SVE system shutdown from 4/3/14 to 4/29/14

**Table 10**  
**Operation and Maintenance Data**  
**Building 3 SVE System**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

	Extraction Well BLD3-SVE1		Extraction Well BLD3-SVE2		Extraction Well BLD3-SVE3		Extraction Well BLD3-SVE4		BLDG3-VP1		BLDG3-VP2		BLDG3-VP3		BLDG3-VP5		BLDG3-VP6		BLDG3-VP7		Carbon Influent	Carbon Midpoint	Carbon Effluent	Total Flow Rate	Effluent Percent Reduction <sup>(1)</sup>
	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	VOC (ppm)	VOC (ppm)	VOC (ppm)	cfm	
4/3/2014	7.45	2.5	5.97	2.7	NA	NA	NA	NA	0.063	1.7	0.023	2.3	0.012	3.6	0	7	0.009	65	0.011	0.8	3.1	ND	ND	160	>99%
5/1/2014	8.29	3.70	6.97	1.20	NA	NA	NA	NA	0.18	7.40	0.03	4.50	0.02	3.50	0.01	6.90	0.20	52.80	0.01	0.80	8.70	1.20	ND	175	>99%
5/28/2014	7.62	4.5	7.34	12.1	NA	NA	NA	NA	0.200	3	0.035	2.1	0.023	4.5	0.009	8	0.021	57	0.015	0.2	7.4	ND	ND	175	>99%
6/13/2014	7.66	10.1	7.43	34.3	NA	NA	NA	NA	0.205	9.2	0.035	10.6	0.020	12.6	0.008	20	0.015	129	0.029	4.2	21.2	1.9	ND	175	>99%
6/24/2014	8.046	4.6	7.804	14.6	NA	NA	NA	NA	0.202	0.2	0.04	1.4	0.022	5.2	0.005	6	0.016	50	0.019	2.5	9.3	ND	ND	175	>99%
7/8/2014	7.5	10	7.3	33.5	NA	NA	NA	NA	0.200	9	0.037	10.2	0.023	12.2	0.01	19	0.012	105	0.025	4.0	18.6	2.0	ND	175	>99%
7/24/2014	8.1	ND	7.9	ND	NA	NA	NA	NA	0.250	0.9	0.046	0.4	0.027	2.0	0.01	3	0.029	5	0.025	1.0	ND	ND	ND	170	>99%
8/7/2014	5.24	1.5	14.54	4.4	NA	NA	NA	NA	0.340	0.4	0.042	0.4	0.023	1.8	0.026	1	0.039	18	0.015	1.800	5.6	ND	ND	165	>99%
8/19/2014	2.78	2	6.79	22.8	NA	NA	NA	NA	0.910	2.2	0.054	1.8	0.027	1.6	0.056	4.5	0.115	21	0.008	5.3	13.9	ND	ND	175	>99%
9/3/2014	2.76	ND	6.67	5.3	NA	NA	NA	NA	0.906	ND	0.056	ND	0.029	0.0	0.066	ND	0.112	15	+0.016	ND	10.4	ND	ND	170	>99%
9/25/2014	2.809	ND	6.95	1	NA	NA	NA	NA	0.875	ND	0.061	ND	0.029	ND	0.075	ND	0.118	37	+0.003	ND	3.5	ND	ND	175	>99%
9/25/2014 <sup>(2)</sup>	2.54	ND	5.89	7.5	1.39	56.4	1.42	20.1	0.831	ND	0.062	ND	0.027	0.0	0.054	ND	0.1	39	+0.011	ND	16.6	ND	ND	175	>99%
9/29/2014	2.45	ND	5.58	6.1	1.28	13.5	1.2	3	0.828	0.3	0.062	0.5	0.030	1.0	0.085	2	0.11	18	+0.12	1.3	6.9	ND	ND	175	>99%

Notes:

\*wc = inches of water column

VOC = volatile organic compounds measured with a photoionization detector

ppm = parts per million

cfm = cubic feet per minute

ND = non-detect

NA = not applicable

(1) = target off-gas VOC reduction is 95% per MassDEP policy (MADEP, 1994)

(2) = Second set of measurements on September 25, 2014 after vapor extraction started at BLDG3-SVE3 and BLDG3-SVE4

**Table 11**  
**Soil Vapor Analytical Results**  
**Building 3 SVE System**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG3-SVE-INF 7/8/2014	BLDG3-SVE1				BLDG3-SVE2				BLDG3-SVE3 9/25/2014	BLDG3-SVE4 9/25/2014
		2/4/2011	1/24/2012	7/8/2014	9/25/2014	8/6/2009	2/4/2011	1/24/2012	7/8/2014		
1,1,1-Trichloroethane	<0.80	<20	<21	<3.7 UJ	<1	<960	<1700	<940	<1600	<11	<11
1,1,2,2-Tetrachloroethane	<0.20	<4.9	<5.2	<0.92 UJ	<1	<240	<430	<240	<390	<14	<14
1,1,2-Trichloroethane	<0.80	<20	<21	<3.7 UJ	<1	<960	<1700	<940	<1600	<11	<11
1,1-Dichloroethane	<0.60	---	<16	<2.8 UJ	<0.8	<720	<1300	<710	<1200	<8	<8
1,1-Dichloroethene	<0.59	---	<15	<2.7 UJ	<0.8	<700	<1300	<690	<1200	<8	<8
1,2-Dibromoethane (EDB)	<0.23	<5.5	---	<1.0 UJ	<2	---	<490	---	<450	<15	<15
1,2-Dichlorobenzene	<1.8	<43	---	<8.1 UJ	<1	---	<3800	---	<3500	<12	<12
1,2-Dichloroethane	<0.60	<15	<16	<2.8 UJ	<0.8	<720	<1300	<710	<1200	<8	<8
1,2-Dichloropropane	<0.68	<17	<18	<3.1 UJ	<0.9	<820	<1500	<800	<1300	<9	<9
1,3-Dichlorobenzene	0.068J	<43	---	<8.1 UJ	<1	---	<3800	---	<3500	<12	<12
1,4-Dichlorobenzene	<1.8	<43	---	<8.1 UJ	<1	---	<3800	---	<3500	<12	<12
1,4-Dioxane	<6.7	<160	---	<31 UJ	<0.7	---	<14000	---	<13000	<7	<7
2-Butanone	0.96	---	---	3.2J	63	---	<1900	---	<1700	3200	13000
2-Hexanone	0.13J	<15	---	0.31J	<0.8	---	<1300	---	<1200	<8	<8
4-Methyl-2-pentanone	<1.2	<29	---	<5.5 UJ	<0.8	---	<2600	---	<2400	<8	<8
Acetone	21	230	680	39	290 J	---	<14000	<7800	550J	1700	3700
Benzene	0.076J	<11	---	0.25J	<0.6	---	<1000	---	<920	<6	<6
Bromodichloromethane	<0.20	<4.9	<5.2	<0.92 UJ	<1	<240	<430	<240	<390	<13	<13
Bromoform	<1.5	<37	<39	<7.0 UJ	<2	<1800	<3300	<1800	<3000	<21	<21
Bromomethane	<0.58	---	<15	<2.6 UJ	<0.8	<690	<1200	<670	<1100	<8	<8
Carbontetrachloride	0.079J	6.2	<2.4	0.47 J	<1	<110	<200	<110	<180	<13	<13
Chlorobenzene	<0.68	<17	<18	<3.1 UJ	<0.9	<820	<1500	<800	<1300	<9	<9
Chloroethane	---	---	<20	---	---	<930	---	<910	---	---	---
Chloroform	<0.72	<18	<19	0.25J	<1	<860	<1600	<850	<1400	<10	<10
Chloromethane	---	---	<16	---	---	<720	---	<710	---	---	---
cis-1,2-Dichloroethene	<0.59	---	<15	<2.7 UJ	<0.8	<700	<1300	<690	<1200	120	<8
cis-1,3-Dichloropropene	<1.3	<33	<35	<6.2 UJ	<0.9	<1600	<2900	<1600	<2600	<9	<9
Dibromochloromethane	<0.25	<6.2	<6.6	<1.2 UJ	<2	<300	<550	<300	<500	<17	<17
Dichloromethane	0.38J	---	<13	0.36J	7	<610	<1100	<600	<1000	<7	<7
Ethylbenzene	0.065J	<31	<33	0.092J	<0.9	---	<2700	<1500	<2500	<9	<9
Hexachlorobutadiene	<4.0	<98	---	<18 UJ	<2	---	<8700	---	<7900	<21	<21
Methyltert-butylether	<1.1	---	---	<4.9 UJ	<0.7	---	<2300	---	<2100	<7	<7
Naphthalene	<2.7	<65	---	<12 UJ	<1	---	<5800	---	<5200	<10	<10
Styrene	<1.3	<31	---	<5.8 UJ	<0.8	---	<2700	---	<2500	<8	<8
Tetrachloroethene	3.6	1500	160	0.33J	240	360000D	130000	73000	99000	410000	69000
Toluene	0.28J	<13	---	0.69J	1	---	<1200	---	<1100	<8	<8
trans-1,2-Dichloroethene	0.051J	---	<15	0.13J	<0.8	<700	<1300	<690	<1200	8	<8
Trans-1,3-Dichloropropene	<0.67	<16	<17	<3.1 UJ	<0.9	<800	<1400	<780	<1300	<9	<9
Trichloroethene	0.061J	1200	43	<0.37 UJ	3	320000D	21000	6700	2900	5000	500
Trichlorofluoromethane	---	---	<21	---	---	<990	---	<970	---	---	---
Vinyl chloride	0.057J	---	<2.1	<0.37 UJ	<0.5	<96	<170	<94	<160	<5	<5
m/p-xylene	0.18J	<62	<66	0.23J	<2	---	<5500	<3000	<5000	<17	<17
o-Xylene	0.055J	<31	<33	0.073J	<0.9	---	<2700	<1500	<2500	<9	<9
Xylene (total)	0.235J	<62	<66	0.303J	<2	---	<5500	<3000	<5000	<17	<17

**Notes:**

ug/m3 = micrograms per cubic meter.

<3.1 = not detected above listed detection limit

--- = constituent not sampled for.

D - results reported from a diluted sample

J - estimated value

**TABLE 12**  
**VOC Mass Removal Estimate Summary**  
**Building 3 SVE System**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

Sample Date	Vapor Influent Concentration (ppm(v))	Flow (scfm)	Days Operational	VOC Mass Removal Rate (lb./day)	Total VOC Mass Removed (lb.)
12/10/2009	17.0	97	0	0.00	0.0
12/11/2009	15.1	97	1	0.93	0.9
12/14/2009	19.0	102	4	1.05	4.1
12/16/2009	27.5	120	6	1.67	7.4
12/18/2009	23.0	125	8	1.89	11.2
12/21/2009	6.6	125	11	1.11	14.5
12/23/2009	6.5	127	13	0.50	15.5
12/29/2009	6.6	125	19	0.49	18.5
1/6/2010	10.0	140	27	0.70	24.0
1/19/2010	58.0	133	28	2.72	26.7
2/4/2010	21.8	141	55	3.36	80.6
2/18/2010	21.8	140	69	1.83	106
3/5/2010	20.4	140	84	1.77	133
3/19/2010	9.7	138	98	1.25	150
3/29/2010	10.4	146	108	0.88	159
4/12/2010	9.5	146	120	0.87	169
4/27/2010	11.8	138	135	0.88	183
5/11/2010	2.4	133	149	0.57	191
5/27/2010	18.9	150	165	0.96	206
6/8/2010	29.6	150	177	2.18	232
6/25/2010	21.7	149	194	2.28	271
7/7/2010	21.7	149	206	1.93	294
7/9/2010	53.0	130	208	2.91	300
7/19/2010	32.6	129	218	3.32	333
8/2/2010	35.0	125	230	2.54	364
8/16/2010	0.0	131	244	1.38	383
8/30/2010	41.0	144	258	1.77	408
9/14/2010	27.1	145	273	2.97	452
9/28/2010	11.7	145	287	1.69	476
10/13/2010	21.0	147	302	1.44	498
10/26/2010	15.0	137	315	1.48	517
11/9/2010	34.0	138	329	2.03	545
11/24/2010	12.5	144	344	2.00	575
12/7/2010	19.0	139	355	1.31	590
12/22/2010	20.7	139	368	1.65	611
12/28/2010	12.7	160	374	1.60	621
1/3/2011	14.3	154	380	1.24	628
1/18/2011	15.4	160	395	1.42	650
2/4/2011	8.9	160	412	1.16	669
2/15/2011	3.0	160	423	0.57	676
2/22/2011	10.0	172	430	0.67	680
3/4/2011	7.2	172	440	0.89	689
3/15/2011	7.7	172	451	0.77	698
3/29/2011	35.0	167	465	2.13	728
4/12/2011	9.0	165	479	2.18	758
4/25/2011	5.8	165	492	0.73	768
5/10/2011	10.8	165	507	0.82	780
5/27/2011	18.5	163	524	1.43	804
6/7/2011	10.7	163	535	1.43	820
6/20/2011	7.5	164	548	0.89	832
7/7/2011	6.5	162	565	0.68	843
7/22/2011	2.9	161	580	0.45	850
8/1/2011	0.2	162	590	0.15	852
8/15/2011	2.0	163	604	0.11	853
9/6/2011	11.0	164	626	0.64	867
9/20/2011	10.0	164	640	1.03	882
10/3/2011	3.5	164	653	0.66	890
10/20/2011	2.3	164	670	0.29	895

**TABLE 12**  
**VOC Mass Removal Estimate Summary**  
**Building 3 SVE System**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

Sample Date	Vapor Influent Concentration (ppm(v))	Flow (scfm)	Days Operational	VOC Mass Removal Rate (lb./day)	Total VOC Mass Removed (lb.)
11/2/2011	6.5	161	683	0.43	901
11/15/2011	1.6	135	695	0.33	905
12/5/2011	6.6	122	714	0.30	910
12/15/2011	10.7	127	724	0.66	917
1/4/2012	0.1	149	742	0.48	926
1/24/2012	12.5	147	760	0.56	935
2/6/2012	0.0	143	772	0.54	942
2/21/2012	0.0	139	785	0.00	942
3/15/2012	5.5	144	795	0.45	946
3/28/2012	4.6	148	808	0.45	952
4/5/2012	4.4	149	816	0.40	955
4/17/2012	15.5	147	828	0.87	966
5/8/2012	11.5	157	849	1.27	992
5/22/2012	0.4	137	863	0.49	999
6/4/2012	0.0	156	876	0.02	1,000
6/19/2012	11.4	149	891	0.69	1,010
7/12/2012	18.5	149	914	1.33	1,041
7/24/2012	11.5	149	925	1.34	1,055
8/10/2012	6.3	149	942	0.79	1,069
8/22/2012	6.7	149	954	0.58	1,076
9/7/2012	7.7	135	970	0.58	1,085
9/18/2012	5.2	141	981	0.55	1,091
10/12/2012	5.7	152	1005	0.50	1,103
10/26/2012	5.6	152	1019	0.51	1,110
11/7/2012	5.8	152	1031	0.52	1,116
11/21/2012	2.2	152	1045	0.37	1,122
12/7/2012	3.4	153	1061	0.26	1,126
12/21/2012	9.4	152	1075	0.58	1,134
1/4/2013	3.8	139	1088	0.55	1,141
1/17/2013	7.0	144	1101	0.47	1,147
2/7/2013	11.0	135	1122	0.73	1,162
2/27/2013	12.0	134	1142	0.92	1,181
3/15/2013	7.5	135	1158	0.79	1,193
3/29/2013	4.5	134	1172	0.48	1,200
4/8/2013	10.3	134	1182	0.59	1,206
4/29/2013	5.9	138	1203	0.67	1,220
5/10/2013	6.0	137	1214	0.49	1,226
5/24/2013	3.7	132	1228	0.38	1,231
6/5/2013	7.9	132	1240	0.46	1,237
6/20/2013	3.0	132	1255	0.43	1,243
7/12/2013	6.1	132	1277	0.36	1,251
7/17/2013	6.8	132	1282	0.51	1,253
7/25/2013	4.3	133	1290	0.44	1,257
8/9/2013	8.0	146	1305	0.54	1,265
8/23/2013	5.9	141	1319	0.59	1,273
9/17/2013	7.8	137	1344	0.56	1,287
9/27/2013	10.2	126	1354	0.68	1,294
10/14/2013	5.1	147	1371	0.67	1,306
10/25/2013	9.5	147	1382	0.64	1,313
11/5/2013	7.7	148	1393	0.76	1,321
11/18/2013	8.1	146	1406	0.69	1,330
12/5/2013	7.2	148	1423	0.68	1,342
12/18/2013	9.4	139	1435	0.69	1,350
1/8/2014	4.0	135	1455	0.54	1,361
1/27/2014	6.0	134	1474	0.40	1,368
2/4/2014	0.0	150	1482	0.27	1,371
2/20/2014	0.0	149	1498	0.00	1,371
3/4/2014	3.1	151	1510	0.14	1,372

**TABLE 12**  
**VOC Mass Removal Estimate Summary**  
**Building 3 SVE System**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

Sample Date	Vapor Influent Concentration (ppm(v))	Flow (scfm)	Days Operational	VOC Mass Removal Rate (lb./day)	Total VOC Mass Removed (lb.)
3/20/2014	4.5	149	1526	0.34	1,378
4/3/2014	3.1	150	1540	0.34	1,382
5/1/2014	8.7	162	1542	0.54	1,384
5/28/2014	7.4	161	1569	0.78	1,405
6/13/2014	21.2	160	1585	1.37	1,426
6/24/2014	9.3	159	1596	1.45	1,442
7/8/2014	18.6	159	1610	1.33	1,461
7/25/2014	0.0	154	1627	0.86	1,476
8/7/2014	5.6	150	1640	0.25	1,479
8/19/2014	13.9	160	1652	0.93	1,490
9/3/2014	10.4	154	1667	1.12	1,507
9/25/2014	3.5	158	1689	0.66	1,521
9/25/2014	16.6	158	1689	0.00	1,521
9/29/2014	6.9	158	1693	1.11	1,526

Notes:

ppm = parts per million

scfm = standard cubic feet per minute (see note 6)

lbs./day = pounds per day

lbs. = pounds

VOC = volatile organic compounds

- Vapor influent concentrations as measured with a photoionization detector (PID).
- Total VOC mass removed (lbs.) is calculated by multiplying the VOC Mass Removal Rate (lbs./day) on the sampling date by the # of operating days between visits.
- VOS mass removal rate (lbs./day) = average VOC level between current and previous monitoring (ppm)/  
 $10E6 \times 1 \text{ lbmole}/379.4 \text{ cu ft.} \times (158 \text{ lbs}/\text{lbmole}) \times \text{flow (ft}^3/\text{min)} \times (1440 \text{ min}/\text{day})$
- 158 lbs./lbmole is the weighted average molecular weight of the primary contaminants in the soil vapor (80% Tetrachloroethene, 19% Trichloroethene, and 1% acetone based on analytical results from recovered soil vapor).
- VOC concentration not monitored on 2/4/10, assumed concentration noted on 2/18/10.
- Flow rate (scfm) is calculated with the following equation:  $128.8 \times \text{Flow coefficient (K)} \times \text{pipe diameter}^2 \text{ (in)} \times \sqrt{\text{psia} \times \text{differential pressure (IWC)} / (\text{Temp (F)} + 460)} \times \text{Sp Gr @ } 60^\circ\text{F}$  to adjust for system operating temperature  
the second 9/25/14 monitoring was conducted after extraction from BLDG3-SVE3 and BLDG3-SVE4 was started

**Table 13**  
**Indoor Air Analytical Results**  
**Building 5 Area**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG5-1									BLDG5-2								
	QA Area									Shipping Area								
	8/22/2011	10/7/2011	1/9/2012	4/18/2013	8/5/2013	11/1/2013	1/27/2014	6/17/2014	9/24/2014	8/22/2011	10/7/2011	1/9/2012	4/18/2013	8/5/2013	11/1/2013	1/27/2014	6/17/2014	9/24/2014
1,1,1-Trichloroethane	<3.1	<6.6	<9.3	<91	<41	<9.4	<4.7	<20	<1	<1.4	<1.6	<94	<45	<16	<28	<6.2	<18	<1
1,1,2,2-Tetrachloroethane	<0.78	<1.7	<2.3	<23	<10	<2.4	<1.2	<4.9	<1	<0.34	<0.40	<24	<11	<4.1	<6.9	<1.6	<4.5	<1
1,1,2-Trichloroethane	<3.1	<6.6	<9.3	<91	<41	<9.4	<4.7	<20	<1	<1.4	<1.6	<94	<45	<16	<28	<6.2	<18	<1
1,1-Dichloroethane	<2.3	<5.0	<7.0	<68	<31	<7.1	<3.5	<15	<0.8	<1.0	<1.2	<71	<34	<12	<21	<4.7	<14	<0.8
1,1-Dichloroethene	<2.3	<4.8	<6.8	<66	<30	<6.9	<3.5	<14	<0.8	<1.0	<1.2	<69	<33	<12	<20	<4.5	<13	<0.8
1,2-Dibromoethane (EDB)	---	---	---	---	---	---	<1.3	<5.5	<2	---	---	---	---	---	---	<1.8	<5.1	<2
1,2-Dichlorobenzene	---	---	---	---	---	---	<10	<43	<1	---	---	---	---	---	---	<14	<40	<1
1,2-Dichloroethane	<2.3	<5.0	<7.0	<68	<31	<7.1	<3.5	<15	<0.8	<1.0	<1.2	<71	<34	<12	<21	<4.7	<14	<0.8
1,2-Dichloropropane	<2.7	<5.6	<7.9	<77	<35	<8.0	<4.0	<17	<0.9	<1.2	<1.4	<80	<38	<14	<23	<5.3	<15	<0.9
1,3-Dichlorobenzene	---	---	---	---	---	---	<10	<43	<1	---	---	---	---	---	---	<14	<40	<1
1,4-Dichlorobenzene	---	---	---	---	---	---	<10	<43	<1	---	---	---	---	---	---	<14	<40	<1
1,4-Dioxane	---	---	---	---	---	---	<39	<160	<0.7	---	---	---	---	---	---	<52	<150	<0.7
2-Butanone	---	---	---	---	---	---	76	220	340	---	---	---	---	---	---	92	270	220
2-Hexanone	---	---	---	---	---	---	<3.5	<15	<0.8	---	---	---	---	---	---	<4.7	<14	<0.8
4-Methyl-2-pentanone	---	---	---	---	---	---	14	49	100	---	---	---	---	---	---	16	62	68
Acetone	---	9700	1000D	3300	1000	3400D	270D	4100D	310	---	2000	3300	1400	640	870	180	660	110
Benzene	---	---	---	---	---	---	<2.7	<11	<0.6	---	---	---	---	---	---	<3.6	<11	<0.6
Bromodichloromethane	<0.78	<1.7	<2.3	<23	<10	<2.4	<1.2	<4.9	<1	<0.34	<0.40	<24	<11	<4.1	<6.9	<1.6	<4.5	<1
Bromoform	<5.9	<13	<18	<170	<78	<18	<8.9	<37	<2	<2.6	<3.1	<180	<85	<31	<52	<12	<34	<2
Bromomethane	<2.2	<4.7	<6.7	<65	<29	<6.8	<3.4	<14	<0.8	<0.97	<1.2	<68	<32	<12	<20	<4.4	<13	<0.8
Carbontetrachloride	0.61	<0.77	<1.1	<11	<4.8	<1.1	<0.55	<2.3	<1	0.59	0.63	<11	<5.2	<1.9	<3.2	<0.72	<2.1	<1
Chlorobenzene	<2.7	<5.6	<7.9	<77	<35	<8.0	<4.0	<17	<0.9	<1.2	<1.4	<80	<38	<14	<23	<5.3	<15	<0.9
Chloroethane	<3.0	<6.4	<9.0	<88	<39	<9.1	---	---	---	<1.3	<1.6	<91	<43	<16	<27	---	---	---
Chloroform	<2.8	<5.9	<8.4	<81	<37	<8.5	<4.2	<18	<1	<1.2	<1.5	<85	<40	<15	<25	<5.6	<16	<1
Chloromethane	<2.3	<5.0	<7.0	<68	<31	<7.1	---	---	---	<1.0	<1.2	<71	<34	<12	<21	---	---	---
cis-1,2-Dichloroethene	<2.3	<4.8	<6.8	<66	<30	<6.9	<3.5	<14	1	2.4	1.3	<69	<33	<12	<20	<4.5	<13	0.9
cis-1,3-Dichloropropene	<5.2	<11	<16	<150	<68	<16	<7.9	<33	<0.9	<2.3	<2.7	<160	<75	<27	<46	<10	<30	<0.9
Dibromochloromethane	<0.99	<2.1	<2.9	<29	<13	<3.0	<1.5	<6.2	<2	<0.43	<0.51	<30	<14	<5.2	<8.7	<2.0	<5.7	<2
Dichloromethane	<2.0	<4.2	<5.9	6.5J	<26	<6.0	<3.0	<12	28	<0.86	<1.0	<60	3.6J	<10	<17	<3.9	<11	6
Ethylbenzene	<4.9	<10	<15	<140	---	---	<7.5	<31	2	<2.1	<2.6	<150	1.9J	---	---	<9.8	<29	1
Hexachlorobutadiene	---	---	---	---	---	---	<24	<98	<2	---	---	---	---	---	---	<31	<90	<2
Methyltert-butylether	---	---	---	---	---	---	<6.2	<26	<0.7	---	---	---	---	---	---	<8.2	<24	<0.7
Naphthalene	---	---	---	---	---	---	<16	<65	<1	---	---	---	---	---	---	<21	<60	<1
Styrene	---	---	---	---	---	---	<7.4	<31	<0.8	---	---	---	---	---	---	<9.7	<28	<0.8
Tetrachloroethene	3.1	3.7	7.4	<12	6.3	7.3	1.2	6.9	8	12	7.5	14	2.9J	8.2	9.2	2.7	11	5
Toluene	---	---	---	---	---	---	<3.2	<13	2	---	---	---	---	---	---	<4.2	<12	2
trans-1,2-Dichloroethene	<2.3	<4.8	<6.8	<66	<30	<6.9	<3.5	<14	<0.8	<1.0	<1.2	<69	<33	<12	<20	<4.5	<13	<0.8
Trans-1,3-Dichloropropene	<2.6	<5.5	<7.8	<75	<34	<7.9	<3.9	<16	<0.9	<1.1	<1.3	<79	<37	<14	<23	<5.2	<15	<0.9
Trichloroethene	5.6	5.1	8.9	4.1J	11	12	2.2	7.2	9	14	8.4	17	4.4J	12	12	4	11	6
Trichlorofluoromethane	<3.2	<6.8	<9.6	<94	<42	<9.7	---	---	---	8.2	4	<97	4.1J	<17	<28	---	---	---
Vinyl chloride	<0.31	<0.66	<0.93	<9.1	<4.1	<0.94	<0.47	<2.0	<0.5	<0.14	<0.16	<9.4	<4.5	<1.6	<2.8	<0.62	<1.8	<0.5
m/p-xylene	<9.9	<21	<30	4.9J	---	---	<15	<62	8	5.6	8	<300	7.7J	---	---	<20	<57	5
o-Xylene	<4.9	<10	<15	<140	---	---	<7.5	<31	2	<2.1	<2.6	<150	2.3J	---	---	<9.8	<29	1
Xylene (total)	<9.9	<21	<15	4.9J	---	---	<15	<62	10	5.6	8	<300	10J	---	---	<20	<57	6

Notes: ug/m3 = Micrograms per cubic meter.  
D = Result from a diluted sample.  
J = Estimated value.  
--- = not analyzed  
<3.1 = not detected above listed detection limit.  
SVE system startup in March 2013



**Table 13**  
**Indoor Air Analytical Results**  
**Building 5 Area**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG5-3									BLDG5-4			BLDG5-5	BLDG5-6		BLDG8-1
	Sanding Room									Production Area						
	8/22/2011	10/7/2011	1/9/2012	4/18/2013	8/5/2013	11/1/2013	1/27/2014	6/17/2014	9/24/2014	8/22/2011	10/7/2011	1/9/2012	4/1/2014	4/1/2014	9/24/2014	4/1/2014
1,1,1-Trichloroethane	<1.7	<1.6	<3.6	<29	<1.2	<8.2	<3.2	<10	<1	<1.1	<1.8	<26	<2.6	<0.95	<1	<0.86
1,1,2,2-Tetrachloroethane	<0.44	<0.41	<0.91	<7.2	<0.30	<2.0	<0.80	<2.5	<1	<0.28	<0.44	<6.6	<0.65	<0.24	<1	<0.22
1,1,2-Trichloroethane	<1.7	<1.6	<3.6	<29	<1.2	<8.2	<3.2	<10	<1	<1.1	<1.8	<26	<2.6	<0.95	<1	<0.86
1,1-Dichloroethane	<1.3	<1.2	<2.7	<22	<0.91	<6.1	<2.4	<7.5	<0.8	<0.83	<1.3	<20	<2.0	<0.71	<0.8	<0.65
1,1-Dichloroethene	<1.3	<1.2	<2.7	<21	<0.89	<6.0	<2.3	<7.3	<0.8	<0.81	<1.3	<19	<1.9	<0.69	<0.8	<0.63
1,2-Dibromoethane (EDB)	---	---	---	---	---	---	<0.91	<2.8	<2	---	---	---	<0.74	<0.27	<2	<0.24
1,2-Dichlorobenzene	---	---	---	---	---	---	<7.0	<22	<1	---	---	---	<5.7	<2.1	<1	<1.9
1,2-Dichloroethane	<1.3	<1.2	<2.7	<22	<0.91	<6.1	<2.4	<7.5	<0.8	<0.83	<1.3	<20	<2.0	<0.71	<0.8	<0.65
1,2-Dichloropropane	<1.5	<1.4	<3.1	<25	<1.0	<6.9	<2.7	<8.5	<0.9	<0.94	<1.5	<22	<2.2	<0.80	<0.9	<0.73
1,3-Dichlorobenzene	---	---	---	---	---	---	<7.0	<22	<1	---	---	---	<5.7	<2.1	<1	<1.9
1,4-Dichlorobenzene	---	---	---	---	---	---	<7.0	<22	<1	---	---	---	<5.7	<2.1	<1	<1.9
1,4-Dioxane	---	---	---	---	---	---	<27	<83	<0.7	---	---	---	<22	<7.9	<0.7	<7.2
2-Butanone	---	---	---	---	---	---	97	380	18	---	---	---	95	34	14	2.6
2-Hexanone	---	---	---	---	---	---	<2.4	<7.5	<0.8	---	---	---	<2.0	<0.71	<0.8	<0.65
4-Methyl-2-pentanone	---	---	---	---	---	---	25	91	5	---	---	---	12	5.1	2	<1.3
Acetone	---	1200	3400D	1000	400D	2100D	330D	1000D	570	---	1000	670	3900D	440D	620	86D
Benzene	---	---	---	---	---	---	<1.9	<5.8	<0.6	---	---	---	<1.5	<0.55	<0.6	<0.50
Bromodichloromethane	<0.44	<0.41	<0.91	<7.2	<0.30	<2.0	<0.80	<2.5	<1	<0.28	<0.44	<6.6	<0.65	<0.24	<1	<0.22
Bromoform	<3.3	<3.1	<6.9	<55	<2.3	<15	<6.1	<19	<2	<2.1	<3.3	<50	<4.9	<1.8	<2	<1.6
Bromomethane	<1.3	<1.2	<2.6	<21	<0.87	<5.8	<2.3	<7.1	<0.8	<0.79	<1.3	<19	<1.9	<0.68	<0.8	<0.62
Carbontetrachloride	0.55	0.58	0.58	<3.4	0.53	<0.95	0.54	<1.2	<1	0.59	0.63	<3.1	0.41	0.36	<1	0.28
Chlorobenzene	<1.5	<1.4	<3.1	<25	<1.0	<6.9	<2.7	<8.5	<0.9	<0.94	<1.5	<22	<2.2	<0.80	<0.9	<0.73
Chloroethane	<1.7	<1.6	<3.5	<28	<1.2	<7.9	---	---	---	<1.1	<1.7	<25	---	---	---	---
Chloroform	<1.6	<1.5	<3.3	<26	<1.1	<7.3	<2.9	<9.0	<1	<1.0	<1.6	<24	<2.3	<0.85	<1	<0.78
Chloromethane	<1.3	<1.2	<2.7	1.7J	<0.91	<6.1	---	---	---	1	<1.3	<20	---	---	---	---
cis-1,2-Dichloroethene	1.5	<1.2	<2.7	<21	<0.89	<6.0	<2.3	<7.3	<0.8	<0.81	<1.3	<19	<1.9	1.7	<0.8	<0.63
cis-1,3-Dichloropropene	<2.9	<2.7	<6.0	<48	<2.0	<14	<5.3	<17	<0.9	<1.8	<2.9	<44	<4.3	<1.6	<0.9	<1.4
Dibromochloromethane	<0.55	<0.52	<1.1	<9.2	<0.39	<2.6	<1.0	<3.2	<2	<0.35	<0.56	<8.3	<0.82	<0.30	<2	<0.27
Dichloromethane	<1.1	<1.0	<2.3	5.6J	<0.77	6.4	<2.0	<6.3	57	<0.70	<1.1	<17	<1.6	<0.60	5	<0.55
Ethylbenzene	<2.8	<2.6	<5.7	1.5J	---	---	<5.1	<16	<0.9	<1.8	<2.8	<42	<4.1	<1.5	1	<1.4
Hexachlorobutadiene	---	---	---	---	---	---	<16	<50	<2	---	---	---	<13	<4.7	<2	<4.3
Methyltert-butylether	---	---	---	---	---	---	<4.2	<13	<0.7	---	---	---	<3.4	<1.2	<0.7	<1.1
Naphthalene	---	---	---	---	---	---	<11	<33	<1	---	---	---	<8.7	<3.2	<1	<2.9
Styrene	---	---	---	---	---	---	<5.0	<16	<0.8	---	---	---	<4.1	<1.5	<0.8	<1.4
Tetrachloroethene	3.8	3.1	4.2	<3.9	1.8	3.8	0.9	3.3	<1	0.78	1	<3.5	<0.35	0.81	<1	0.14
Toluene	---	---	---	---	---	---	<2.2	<6.8	2	---	---	---	<1.8	1.8	4	0.86
trans-1,2-Dichloroethene	<1.3	<1.2	<2.7	<21	<0.89	<6.0	<2.3	<7.3	<0.8	<0.81	<1.3	<19	<1.9	1.9	<0.8	<0.63
Trans-1,3-Dichloropropene	<1.5	<1.4	<3.0	<24	<1.0	<6.8	<2.7	<8.3	<0.9	<0.92	<1.5	<22	<2.2	<0.79	<0.9	<0.72
Trichloroethene	12	17	18	1.7J	8.5	10	2.1	3.5	<1	2.9	2.1	<2.6	0.79	5.2	<1	0.85
Trichlorofluoromethane	2.9	2.1	<3.7	2.2J	2.5	<8.4	---	---	---	1.7	<1.8	<27	---	---	---	---
Vinyl chloride	<0.17	<0.16	<0.36	<2.9	<0.12	<0.82	<0.32	<1.0	<0.5	<0.11	<0.18	<2.6	<0.26	<0.095	<0.5	<0.086
m/p-xylene	7.1	<5.2	<12	5.9J	---	---	<10	<32	2	<3.5	<5.6	<83	<8.3	3.2	4	<2.8
o-Xylene	<2.8	<2.6	<5.7	2.1J	---	---	<5.1	<16	<0.9	<1.8	<2.8	<42	<4.1	<1.5	0.9	<1.4
Xylene (total)	7.1	<5.2	<5.7	8.0J	---	---	<10	<32	2	<3.5	<5.6	<83	<8.3	3.2	4.9	<2.8

Notes: ug/m3 = Micrograms per cubic meter.  
D = Result from a diluted sample.  
J = Estimated value.  
--- = not analyzed  
<3.1 = not detected above listed detection limit.  
SVE system startup in March 2013

**TABLE 14**  
**Sub-Slab Soil Vapor Analytical Results**  
**Building 5 Area**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG5-SV1											BLDG5-SV2										
	QA Area											Paint Mixing Storage Room										
	2/21/2011	6/4/2011	8/22/2011	10/7/2011	1/9/2012	4/18/2013	8/5/2013	11/1/2013	1/27/2014	6/17/2014	2/21/2011	6/4/2011	8/22/2011	10/7/2011	1/9/2012	4/18/2013	8/5/2013	11/1/2013	1/27/2014	6/17/2014	9/24/2014	
1,1,1-Trichloroethane	<31	<350	<290	<66	<80	<43	<3.0	<19	<1.2	<41	<44	<25	<5.0	<3.5	<16	<1.2	<1.1	<1.9	<1.1	<4.0	<1	
1,1,2,2-Tetrachloroethane	<7.8	<88	<72	<16	<20	<11	<0.76	<4.8	<0.30	<10	<11	<6.2	<1.2	<0.87	<4.0	<0.30	<0.27	<0.49	<0.27	<1.0	<1	
1,1,2-Trichloroethane	<31	<350	<290	<66	<80	<43	<3.0	<19	<1.2	<41	<44	<25	<5.0	<3.5	<16	<1.2	<1.1	<1.9	<1.1	<4.0	<1	
1,1-Dichloroethane	<24	<260	<220	<49	<60	<33	<2.3	<14	<0.90	<31	<33	<19	<3.7	<2.6	<12	<0.90	<0.81	<1.5	<0.82	<3.0	<0.8	
1,1-Dichloroethene	<23	<260	<210	<48	<59	<32	<2.2	<14	<0.88	<30	<32	<18	<3.6	<2.5	<12	<0.88	<0.79	<1.4	<0.80	<2.9	<0.8	
1,2-Dibromoethane (EDB)	<8.9	---	---	---	<23	---	---	---	<0.34	<12	<12	---	---	---	<4.5	---	---	---	<0.31	<1.1	<2	
1,2-Dichlorobenzene	<69	---	---	---	<180	---	---	---	<2.6	<90	<97	---	---	---	<35	---	---	---	<2.4	<8.8	<1	
1,2-Dichloroethane	<24	<260	<220	<49	<60	<33	<2.3	<14	<0.90	<31	<33	<19	<3.7	<2.6	<12	<0.90	<0.81	<1.5	<0.82	<3.0	<0.8	
1,2-Dichloropropane	<27	<300	<250	<56	<68	<37	<2.6	<16	<1.0	<35	<37	<21	<4.2	<2.9	<14	<1.0	<0.92	<1.7	<0.93	<3.4	<0.9	
1,3-Dichlorobenzene	<69	---	---	---	<180	---	---	---	<2.6	<90	<97	---	---	---	<35	---	---	---	<2.4	<8.8	6	
1,4-Dichlorobenzene	<69	---	---	---	<180	---	---	---	<2.6	<90	<97	---	---	---	<35	---	---	---	<2.4	<8.8	<1	
1,4-Dioxane	---	---	---	---	<670	---	---	---	<10	<340	---	---	---	---	<130	---	---	---	<9.1	<33	<0.7	
2-Butanone	60	---	---	---	<86	---	---	---	22	45	<48	---	---	---	300	---	---	---	65D	200	230	
2-Hexanone	<24	---	---	---	<60	---	---	---	2.3	<31	<33	---	---	---	110	---	---	---	6.8	15	3	
4-Methyl-2-pentanone	<47	---	---	---	<120	---	---	---	4.8	<62	<66	---	---	---	24	---	---	---	63	98	62	
Acetone	<260	<2900	---	670	<670	1300	1500D	1500D	40	960	<370	<210	---	840	320	68D	45D	68	39	91	190	
Benzene	<18	---	---	---	<47	---	---	---	<0.70	<24	<26	---	---	---	<9.3	---	---	---	<0.64	<2.3	1	
Bromodichloromethane	<7.8	<88	<72	<16	<20	<11	<0.76	<4.8	<0.30	<10	<11	<6.2	<1.2	<0.87	<4.0	<0.30	<0.27	<0.49	<0.27	<1.0	<1	
Bromoform	<60	<670	<550	<120	<150	<82	<5.8	<37	<2.3	<78	<84	<47	<9.4	<6.6	<30	<2.3	<2.1	<3.7	<2.1	<7.6	<2	
Bromomethane	<22	<250	<210	<47	<57	<31	<2.2	<14	<0.86	<29	<32	<18	<3.6	<2.5	<11	<0.86	<0.77	<1.4	<0.78	<2.9	<0.8	
Carbondsulfide	<18	---	---	---	---	---	---	---	---	---	<25	---	---	---	---	---	---	---	---	---	---	
Carbontetrachloride	<3.7	<41	<34	<7.7	<9.3	<5.1	0.57	<2.3	0.52	<4.8	<5.1	<2.9	<0.58	0.64	<1.9	0.62	0.52	0.53	0.59	0.49	<1	
Chlorobenzene	<27	<300	<250	<56	<68	<37	<2.6	<16	<1.0	<35	<37	<21	<4.2	<2.9	<14	<1.0	<0.92	<1.7	<0.93	<3.4	<0.9	
Chloroethane	<30	<340	<280	<64	---	<42	<2.9	<19	---	---	<43	<24	<4.8	<3.4	---	<1.2	<1.0	<1.9	---	---	---	
Chloroform	<28	<320	<260	<59	<72	<39	<2.7	<17	<1.1	<37	<40	<22	<4.5	<3.1	<14	<1.1	<0.97	<1.7	<0.99	<3.6	<1	
Chloromethane	<24	<260	<220	<49	---	<33	<2.3	<14	---	---	<33	<19	<3.7	<2.6	---	<0.90	<0.81	<1.5	---	---	---	
cis-1,2-Dichloroethene	47	420	400	130	96	<32	<2.2	<14	<0.88	<30	<32	<18	6.6	5.1	<12	<0.88	<0.79	<1.4	0.84	<2.9	<0.8	
cis-1,3-Dichloropropene	<52	<580	<480	<110	<130	<72	<5.1	<32	<2.0	<68	<74	<41	<8.3	<5.8	<27	<2.0	<1.8	<3.2	<1.8	<6.7	<0.9	
Dibromochloromethane	<9.9	<110	<92	<21	<25	<14	<0.96	<6.1	<0.38	<13	<14	<7.8	<1.6	<1.1	<5.1	<0.38	<0.34	<0.62	<0.35	<1.3	<2	
Dichloromethane	<20	<220	<180	<42	<51	<27	<1.9	<12	<0.76	<26	<28	<16	<3.1	<2.2	<10	<0.76	<0.68	8.5	<0.69	<2.5	5	
Ethylbenzene	<50	---	<460	<100	<130	<69	---	---	<1.9	<65	<70	---	<7.9	8.1	<25	2.5	---	---	3.1	<6.3	10	
Freon 113	<8.9	---	---	---	---	---	---	---	---	---	<12	---	---	---	---	---	---	---	---	---	---	
Hexachlorobutadiene	---	---	---	---	<400	---	---	---	<6.0	<210	---	---	---	---	<80	---	---	---	<5.5	<20	<2	
Methyltert-butylether	<41	---	---	---	<110	---	---	---	<1.6	<54	<58	---	---	---	<21	---	---	---	<1.4	<5.3	<0.7	
Naphthalene	---	---	---	---	<270	---	---	---	<4.0	<140	---	---	---	---	<53	---	---	---	<3.7	<13	<1	
Styrene	<49	---	---	---	<130	---	---	---	<1.9	<64	<69	---	---	---	<25	---	---	---	<1.7	<6.3	<0.8	
Tetrachloroethene	390	9900	5200	790	2700	<5.8	2.9	7.6	2	8.2	150	230	47	25	140	22	6	5.1	25	8.1	4	
Toluene	44	---	---	---	<55	---	---	---	3.1	<28	<30	---	---	---	24	---	---	---	9.4	15	27	
trans-1,2-Dichloroethene	<23	<260	<210	<48	<59	<32	<2.2	<14	<0.88	<30	<32	<18	<3.6	<2.5	<12	<0.88	<0.79	<1.4	<0.80	<2.9	<0.8	
Trans-1,3-Dichloropropene	<26	<290	<240	<55	<67	<36	<2.5	<16	<1.0	<34	<37	<21	<4.1	<2.9	<13	<1.0	<0.90	<1.6	<0.91	<3.3	<0.9	
Trichloroethene	2100	31000	26000	5100	5800	5.1	5.9	14	2.4	8.7	2300	2000	1200D	410D	1300D	80	17	17	73	10	13	
Trichlorofluoromethane	<32	<360	<300	<68	---	<45	4	<20	---	---	<46	<26	<5.1	<3.6	---	2.6	3.3	3.1	---	---	---	
Vinyl acetate	<260	---	---	---	---	---	---	---	---	---	<370	---	---	---	---	---	---	---	---	---	---	
Vinyl chloride	<3.1	<35	<29	<6.6	<8.0	<4.3	<0.30	<1.9	<0.12	<4.1	<4.4	<2.5	0.51	1.2	<1.6	<0.12	<0.11	<0.19	<0.11	<0.40	<0.5	
m/p-xylene	<100	---	<920	<210	<250	<140	---	---	4.5	<130	<140	---	---	17	28	<51	9.5	---	---	11	19	39
o-Xylene	<50	---	<460	<100	<130	<69	---	---	<1.9	<65	<70	---	<7.9	11	<25	2.3	---	---	4.1	6.4	15	
Xylene (total)	<100	---	<920	<210	<250	<140	---	---	4.5	<130	<140	---	---	17	39	<51	12	---	---	15	25	54

Notes: ug/m3 = Micrograms per cubic meter.  
D = Result reported from a diluted sample.  
--- = Not sampled for.  
<31 = not detected above listed detection limit.  
SVE system startup in March 2013

**TABLE 14**  
**Sub-Slab Soil Vapor Analytical Results**  
**Building 5 Area**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG5-SV3												BLDG5-SV4			BLDG5-SV5				
	Sanding Room												Hall			Shipping Area				
	2/21/2011	6/4/2011	8/22/2011	10/7/2011	1/9/2012	4/18/2013	8/5/2013	11/1/2013	1/27/2014	6/17/2014	9/24/2014	1/27/2014	6/17/2014	9/24/2014	4/18/2013	8/5/2013	11/1/2013	1/27/2014	6/17/2014	9/24/2014
1,1,1-Trichloroethane	<2600	<8400	<5700	<220	<330	<24	<2.9	<9.5	<5.8	<17	<1	<0.89	<8.7	<1	<1.2	<3.6	<1.9	<1.4	<2.2	<1
1,1,2,2-Tetrachloroethane	<640	<2100	<1400	<55	<84	<6.0	<0.74	<2.4	<1.5	<4.2	<1	<0.22	<2.2	<1	<0.31	<0.90	<0.47	<0.34	<0.55	<1
1,1,2-Trichloroethane	<2600	<8400	<5700	<220	<330	<24	<2.9	<9.5	<5.8	<17	<1	<0.89	<8.7	<1	<1.2	<3.6	<1.9	<1.4	<2.2	<1
1,1-Dichloroethane	<1900	<6300	<4300	<170	<250	<18	<2.2	<7.2	<4.4	<13	<0.8	1.3	<6.5	<0.8	<0.93	<2.7	<1.4	<1.0	<1.7	<0.8
1,1-Dichloroethene	<1900	<6200	<4200	<160	<240	<18	<2.2	<7.0	<4.3	<12	<0.8	<0.66	<6.4	<0.8	<0.91	<2.6	<1.4	<1.0	<1.6	<0.8
1,2-Dibromoethane (EDB)	<730	---	---	---	<95	---	---	---	<1.6	<4.8	<2	<0.25	<2.5	<2	---	---	---	<0.39	<0.62	<2
1,2-Dichlorobenzene	<5600	---	---	---	<730	---	---	---	<13	<37	<1	<2.0	<19	<1	---	---	---	<3.0	<4.9	<1
1,2-Dichloroethane	<1900	<6300	<4300	<170	<250	<18	<2.2	<7.2	<4.4	<13	<0.8	<0.67	<6.5	<0.8	<0.93	<2.7	<1.4	<1.0	<1.7	<0.8
1,2-Dichloropropane	<2200	<7100	<4900	<190	<280	<20	<2.5	<8.1	<4.9	<14	<0.9	<0.76	<7.4	<0.9	<1.1	<3.1	<1.6	<1.2	<1.9	<0.9
1,3-Dichlorobenzene	<5600	---	---	---	<730	---	---	---	<13	<37	13	<2.0	<19	2	---	---	---	<3.0	<4.9	5
1,4-Dichlorobenzene	<5600	---	---	---	<730	---	---	---	<13	<37	<1	<2.0	<19	<1	---	---	---	<3.0	<4.9	<1
1,4-Dioxane	---	---	---	---	<2800	---	---	---	<48	<140	<0.7	<7.5	<73	<0.7	---	---	---	<11	<18	<0.7
2-Butanone	<2800	---	---	---	<360	---	---	---	12	36	46	8	<9.4	17	---	---	---	20	27	150
2-Hexanone	<1900	---	---	---	<250	---	---	---	<4.4	<13	5	0.91	<6.5	<0.8	---	---	---	3.2	<1.7	3
4-Methyl-2-pentanone	<3800	---	---	---	<500	---	---	---	<8.7	<25	6	<1.3	<13	2	---	---	---	6.8	7.2	46
Acetone	<21000	<70000	---	<1800	<2800	840	190D	280D	95	360	300	<7.5	<73	52 J	44	56	73D	35	41	140
Benzene	<1500	---	---	---	<190	---	---	---	<3.4	<9.9	2	<0.52	<5.1	<0.6	---	---	---	2	<1.3	2
Bromodichloromethane	<640	<2100	<1400	<55	<84	<6.0	<0.74	<2.4	<1.5	<4.2	<1	0.23	<2.2	<1	<0.31	<0.90	<0.47	<0.34	<0.55	<1
Bromoform	<4900	<16000	<11000	<420	<630	<46	<5.6	<18	<11	<32	<2	<1.7	<17	<2	<2.4	<6.8	<3.5	<2.6	<4.2	<2
Bromomethane	<1800	<6000	<4100	<160	<240	<17	<2.1	<6.8	<4.2	<12	<0.8	<0.64	<6.2	<0.8	<0.89	<2.6	<1.3	<0.99	<1.6	<0.8
Carbonylsulfide	<1500	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Carbontetrachloride	<300	<980	<670	<26	<39	<2.8	0.56	<1.1	<0.68	<2.0	<1	0.5	<1.0	<1	0.57	0.62	0.54	0.59	0.49	<1
Chlorobenzene	<2200	<7100	<4900	<190	<280	<20	<2.5	<8.1	<4.9	<14	<0.9	<0.76	<7.4	<0.9	<1.1	<3.1	<1.6	<1.2	<1.9	<0.9
Chloroethane	<2500	<8100	<5500	<210	---	<23	<2.9	<9.2	---	---	---	---	---	---	<1.2	<3.5	<1.8	---	---	---
Chloroform	<2300	<7600	<5100	<200	<300	<22	<2.7	<8.6	<5.2	<15	<1	5.6	<7.8	<1	<1.1	<3.2	<1.7	<1.2	<2.0	<1
Chloromethane	<1900	<6300	<4300	<170	---	<18	<2.2	<7.2	---	---	---	---	---	---	<0.93	<2.7	<1.4	---	---	---
cis-1,2-Dichloroethene	<1900	<6200	<4200	<160	<240	<18	<2.2	<7.0	<4.3	<12	<0.8	16	<6.4	<0.8	2.1	<2.6	<1.4	<1.0	<1.6	<0.8
cis-1,3-Dichloropropene	<4300	<14000	<9500	<370	<560	<40	<4.9	<16	<9.7	<28	<0.9	<1.5	<15	<0.9	<2.1	<6.0	<3.1	<2.3	<3.7	<0.9
Dibromochloromethane	<810	<2700	<1800	<70	<110	<7.6	<0.93	<3.0	<1.8	<5.4	<2	<0.28	<2.8	<2	<0.39	<1.1	<0.59	<0.44	<0.70	<2
Dichloromethane	<1600	<5300	<3600	<140	<210	<15	<1.9	9.2	<3.7	<11	5	<0.57	<5.5	350	<0.78	<2.3	5.9	<0.87	<1.4	3
Ethylbenzene	<4100	---	<9100	<350	<530	<38	---	---	<9.2	<27	10	<1.4	<14	3	11	---	---	11	10	7
Freon 113	<730	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hexachlorobutadiene	---	---	---	---	<1700	---	---	---	<29	<85	<2	<4.5	<44	<2	---	---	---	<6.9	<11	<2
Methyltert-butylether	<3400	---	---	---	<440	---	---	---	<7.7	<22	<0.7	<1.2	<11	6	---	---	---	<1.8	<2.9	<0.7
Naphthalene	---	---	---	---	<1100	---	---	---	<19	<56	<1	<3.0	<29	<1	---	---	---	<4.6	<7.4	<1
Styrene	<4000	---	---	---	<520	---	---	---	<9.1	<26	<0.8	<1.4	<14	<0.8	---	---	---	11	18	<0.8
Tetrachloroethene	5300	33000	14000	1400	2100	160	200	31	170	210	36	18	24	<1	3.1	270	120	89	64	11
Toluene	<1700	---	---	---	<230	---	---	---	16	24	29	3.1	<5.9	9	---	---	---	26	21	23
trans-1,2-Dichloroethene	<1900	<6200	<4200	<160	<240	<18	<2.2	<7.0	<4.3	<12	<0.8	<0.66	<6.4	<0.8	<0.91	<2.6	<1.4	<1.0	<1.6	<0.8
Trans-1,3-Dichloropropene	<2100	<7000	<4800	<180	<280	<20	<2.5	<7.9	<4.8	<14	<0.9	<0.75	<7.3	<0.9	<1.0	<3.0	<1.6	<1.1	<1.8	<0.9
Trichloroethene	130000	470000	340000	20000	22000	1100	720D	190	850D	580	220	29	14	7	3.5	5.9	14	5.1	6	4
Trichlorofluoromethane	<2600	<8700	<5900	<230	---	<25	<3.0	<9.9	---	---	---	---	---	---	2.7	<3.7	3.1	---	---	---
Vinyl acetate	<21000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Vinyl chloride	<260	<840	<570	<22	<33	<2.4	<0.29	<0.95	<0.58	<1.7	<0.5	<0.089	<0.87	<0.5	0.18	<0.36	<0.19	0.16	<0.22	<0.5
m/p-xylene	<8100	---	<18000	<700	<1100	<76	---	---	<19	<54	38	4.3	<28	11	35	---	---	34	35	25
o-Xylene	<4100	---	<9100	<350	<530	<38	---	---	<9.2	<27	15	1.9	<14	4	15	---	---	14	15	10
Xylene (total)	<8100	---	<18000	<700	<1100	<76	---	---	<19	<54	53	6.2	<28	15	50	---	---	48	50	35

Notes: ug/m3 = Micrograms per cubic meter.  
D = Result reported from a diluted sample.  
--- = Not sampled for.  
<31 = not detected above listed detection limit.  
SVE system startup in March 2013

**TABLE 14**  
**Sub-Slab Soil Vapor Analytical Results**  
**Building 5 Area**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m3)	BLDG5-SV6					
	Shipping Area					
	4/18/2013	8/5/2013	11/1/2013	1/27/2014	6/17/2014	9/24/2014
1,1,1-Trichloroethane	2000	1200	790	1900	680	490
1,1,2,2-Tetrachloroethane	<25	<9.4	<6.7	<15	<8.8	<14
1,1,2-Trichloroethane	<100	<38	<27	<59	<35	<11
1,1-Dichloroethane	2700	1500	1300	3100	1600	1800
1,1-Dichloroethene	480	340	270	690	280	350
1,2-Dibromoethane (EDB)	---	---	---	<17	<10	<15
1,2-Dichlorobenzene	---	---	---	<130	<78	<12
1,2-Dichloroethane	<76	<28	<20	<44	<27	<8
1,2-Dichloropropane	<86	<32	<23	<50	<30	<9
1,3-Dichlorobenzene	---	---	---	<130	<78	<12
1,4-Dichlorobenzene	---	---	---	<130	<78	<12
1,4-Dioxane	---	---	---	<490	<290	96
2-Butanone	---	---	---	<64	<38	30
2-Hexanone	---	---	---	<44	<27	<8
4-Methyl-2-pentanone	---	---	---	<88	<53	<8
Acetone	<850	<310	<220	<490	<290	68 J
Benzene	---	---	---	<34	<21	<6
Bromodichloromethane	<25	<9.4	<6.7	<15	<8.8	<13
Bromoform	<190	<71	<51	<110	<67	<21
Bromomethane	<73	<27	<19	<42	<25	<8
Carbondisulfide	---	---	---	---	---	---
Carbontetrachloride	<12	<4.4	<3.1	<6.9	<4.1	<13
Chlorobenzene	<86	<32	<23	<50	<30	<9
Chloroethane	<98	<36	<26	---	---	---
Chloroform	<92	<34	<24	<53	<32	<10
Chloromethane	<76	<28	<20	---	---	---
cis-1,2-Dichloroethene	3200	1800	1200	1900	950	590
cis-1,3-Dichloropropene	<170	<63	<45	<98	<59	<9
Dibromochloromethane	<32	<12	<8.5	<19	<11	<17
Dichloromethane	<64	<24	<17	<37	<22	8
Ethylbenzene	<160	---	---	<93	<56	<9
Freon 113	---	---	---	---	---	---
Hexachlorobutadiene	---	---	---	<290	<180	<21
Methyltert-butylether	---	---	---	<77	<47	<7
Naphthalene	---	---	---	<200	<120	<10
Styrene	---	---	---	<92	<55	<8
Tetrachloroethene	570	1200	440	640	420	97
Toluene	---	---	---	<40	<24	19
trans-1,2-Dichloroethene	<75	<28	<20	<43	<26	<8
Trans-1,3-Dichloropropene	<85	<31	<22	<49	<29	<9
Trichloroethene	9000	3300	1300	1900	970	390
Trichlorofluoromethane	<110	<39	<28	---	---	---
Vinyl acetate	---	---	---	---	---	---
Vinyl chloride	85	81	110	130	19	<5
m/p-xylene	<320	---	---	<190	<110	23
o-Xylene	<160	---	---	<93	<56	9
Xylene (total)	<320	---	---	<190	<110	32

Notes: ug/m3 = Micrograms per cubic meter.  
D = Result reported from a diluted sample.  
--- = Not sampled for.  
<31 = not detected above listed detection limit.  
SVE system startup in March 2013

**Table 15**  
**Operation and Maintenance Data**  
**Building 5 SVE System**  
**Former Varian Facility Site**  
**150 Sohler Road**  
**Beverly, Massachusetts**

Location	Extraction Well BLDG5-SVE1		Extraction Well BLDG5-SVE2		Extraction Well BLDG5-SVE3		Extraction Well BLDG5-SVE4		Bldg5-SV1		Bldg5-SV2		Bldg5-SV3		Bldg5-SV4		Bldg5-SV5		Bldg5-SV6		Carbon Influent	Carbon Midpoint	Carbon Effluent		VOC Off-gas Reduction <sup>(2)</sup>	
	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	Vacuum ("wc)	VOC (ppm)	VOC (ppm)	VOC (ppm)	VOC (ppm)	VOC (ppm)	Total Vapor Flow (cfm) <sup>(1)</sup>			
4/3/2014	3.8	12.41	0.7	12.432	1.1	12.042	NA	NA	0.596	1	0.428	1.5	ND	2.3	ND	0.6	0.077	1.4	+0.101	4.8	8	ND	ND	106	>99%	
4/15/2014	2.9	16.5	0.4	16.45	0.5	16	NA	NA	0.82	0.7	0.581	0.6	ND	3.2	0.01	1.1	0.129	1.7	0.147	3.9	0.5	ND	ND	157	>99%	
5/1/2014	0.9	17.27	ND	17.21	ND	16.68	NA	NA	0.817	ND	0.608	ND	0.007	0.7	0.01	ND	0.133	ND	0.151	0.5	ND	ND	ND	160	>99%	
5/15/2014	ND	30.51	ND	30.25	OFF	OFF	NA	NA	0.002	ND	0.037	ND	0.007	ND	0.008	ND	0.223	ND	0.258	ND	0.312	ND	ND	106	>99%	
5/28/2014	8.7	30.57	2.4	30.31	OFF	OFF	NA	NA	0.001	10.7	0.033	10	0.008	12.4	+0.009	5.1	0.231	13.5	0.286	5.5	6	ND	ND	101	>99%	
6/13/2014	9	32.06	0.8	31.84	OFF	OFF	NA	NA	0.002	1.7	0.033	2.1	0.007	8.4	+0.01	2.4	0.238	2.7	0.275	6.4	1.5	ND	ND	101	>99%	
6/24/2014	3.3	23.2	OFF	OFF	ND	22.4	NA	NA	0.97	ND	0.749	ND	0.009	2.3	+0.007	ND	0.039	0.6	0.018	1.5	ND	ND	ND	120	>99%	
7/8/2014	9.3	32.15	0.7	31.96	OFF	OFF	NA	NA	0.005	1.5	0.031	2	0.008	9.3	0.04	2.4	0.232	2.5	0.278	6.6	1.4	ND	ND	101	>99%	
7/24/2014	ND	39.1	ND	37.7	OFF	OFF	NA	NA	0	ND	0.042	1.6	0.011	ND	+0.009	ND	0.298	ND	0.32	0.4	ND	ND	ND	111	>99%	
8/7/2014	ND	40.31	ND	39.76	OFF	OFF	NA	NA	0.002	ND	0.03	0	0.01	ND	+0.004	ND	0.358	ND	0.396	0.7	ND	ND	ND	115	>99%	
8/11/2014	0.4	NA	ND	NA	OFF	OFF	OFF	OFF	ND	ND	0.034	ND	0.01	ND	+0.008	ND	0.363	ND	0.359	ND	ND	ND	ND	115	>99%	
8/11/2014 <sup>(3)</sup>	0.4	NA	ND	NA	OFF	OFF	0.4	8.174	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	160	>99%
8/19/2014	1.9	13.29	ND	12.7	OFF	OFF	ND	8.34	0	ND	0.015	ND	0.002	0.5	+0.006	ND	0.29	ND	0.055	ND	2.9	ND	ND	160	>99%	
9/3/2014	3.3	13.25	ND	12.55	0.32	0	ND	7.89	+0.003	ND	0.032	ND	0.005	ND	+0.006	ND	0.279	ND	0.68	0.1	0.1	ND	ND	160	>99%	
9/29/2014	12	9.194	OFF	OFF	0.3	8.917	0.1	6.437	0.44	0.6	0.313	0.7	0.004	1.6	+0.003	0.7	0.09	0.6	+0.018	1.7	0.5	ND	ND	162	>99%	

Notes:  
\*wc = inches of water column  
VOC = volatile organic compounds measured with a photoionization detector  
ppm = parts per million  
cfm = cubic feet per minute  
ND = non-detect  
NA = not available or applicable  
(1) = Not adjusted for temperature  
(2) = target off-gas VOC reduction is 95% per MassDEP policy (MADEP, 1994)  
(3) = second set of measurements on August 11, 2014 after vapor extraction started at BLDG53-SVE4  
--- = Not collected  
= concentration based on analytical result

**TABLE 16**  
**VOC Mass Removal Estimate Summary**  
**Building 5 SVE System**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

Sample Date	Vapor Influent Concentration (ppm(v))	Flow (scfm)	Days Operational	VOC Mass Removal Rate (lb./day)	Total VOC Mass Removed (lb.)
3/11/2013	5.0	185	0	0.00	0.0
3/13/2013	45.0	178	2	2.26	4.5
3/18/2013	3.9	182	7	2.26	15.8
3/25/2013	2.8	182	14	0.31	18.0
4/8/2013	0.9	192	28	0.18	20.5
4/29/2013	0.7	192	49	0.08	22.1
5/10/2013	0.7	189	60	0.07	22.9
5/20/2013	0.7	177	70	0.06	23.5
5/24/2013	0.7	177	74	0.06	23.8
6/5/2013	0.7	174	86	0.06	24.6
6/20/2013	0.7	174	101	0.06	25.5
7/12/2013	0.9	173	123	0.07	27.1
7/25/2013	4.9	163	136	0.24	30.2
8/9/2013	0.8	148	151	0.21	33.4
8/23/2013	3.7	147	165	0.17	35.8
9/17/2013	3.8	151	190	0.29	43.0
10/14/2013	1.3	168	217	0.22	48.9
10/25/2013	3.6	172	228	0.21	51.2
11/5/2013	2.7	178	239	0.28	54.4
11/18/2013	1.5	173	252	0.19	56.8
12/5/2013	1.5	173	269	0.13	59.0
12/18/2013	1.5	138	280	0.11	60.2
1/8/2014	1.5	103	301	0.08	61.8
1/27/2014	0.4	104	320	0.05	62.8
2/4/2014	0.3	103	328	0.02	62.9
2/20/2014	0.2	106	344	0.01	63.2
3/4/2014	1.6	97	356	0.04	63.7
3/20/2014	1.7	107	372	0.09	65.1
4/3/2014	8.0	100	386	0.25	68.6
4/15/2014	0.5	145	398	0.31	72.3
5/1/2014	0.0	149	414	0.02	72.6
5/15/2014	0.3	97	428	0.01	72.7
5/28/2014	6.0	92	441	0.15	74.7
6/13/2014	1.5	92	457	0.18	77.5
6/24/2014	0.0	109	468	0.04	78.0
7/8/2014	1.4	107	482	0.04	78.5
7/24/2014	0.0	98	498	0.03	79.0
8/7/2014	0.0	101	512	0.00	79.0
8/12/2014	0.0	101	517	0.00	79.0
8/19/2014	2.9	148	524	0.11	79.8
9/3/2014	0.1	147	539	0.11	81.5
9/29/2014	0.5	147	565	0.02	82.1

Notes:

ppm = parts per million

scfm = standard cubic feet per minute (see note 5)

lbs./day = pounds per day

lbs. = pounds

VOC = volatile organic compounds

- Vapor influent concentrations as measured with a photoionization detector (PID).
- Total VOC mass removed (lbs.) is calculated by multiplying the VOC Mass Removal Rate (lbs./day) on the sampling date by the # of operating days between visits.
- VOC mass removal rate (lbs./day) = average VOC level between current and previous monitoring (ppm)/  
 $10E6 \times 1 \text{ lbmole}/379.4 \text{ cu ft.} \times (134 \text{ lbs}/\text{lbmole}) \times \text{flow (ft}^3/\text{min)} \times (1440 \text{ min}/\text{day})$
- 134 lbs./lbmole is the weighted average molecular weight of the primary contaminants in the soil vapor (93% Trichloroethene and 7% Tetrachloroethene based on analytical results from recovered soil vapor).
- Flow rate (scfm) is calculated with the following equation:  $128.8 \times \text{Flow coefficient (K)} \times \text{pipe diameter}^2 \text{ (in)} \times \sqrt{\text{psia} \times \text{differential pressure (IWC)} / (\text{Temp (F)} + 460)} \times \text{Sp Gr @ } 60^\circ\text{F}$  to adjust for system operating temperature

Table 17  
Soil Vapor Analytical Results  
Building 5 SVE System  
Former Varian Facility Site  
150 Sohier Road  
Beverly, Massachusetts

CONSTITUENT (ug/m <sup>3</sup> )	BLDG5-SVE-INF					BLDG5-SVE1							BLDG5-SVE2						
	6/20/2013	11/5/2013	1/27/2014	5/15/2014	9/3/2014	9/8/2012	3/20/2013	6/20/2013	11/5/2013	1/27/2014	5/15/2014	9/3/2014	9/8/2012	3/20/2013	6/20/2013	11/5/2013	1/27/2014	5/13/2014	9/3/2014
	(3)	(4)	(5)	(6)	(7)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1,1,1-Trichloroethane	<24	<55	<24	<9.1	<1	<3400	<1400	<920	<1800	<450	<91	<11	<71	<32	<10	<10	7.8	5.1	<1
1,1,2,2-Tetrachloroethane	<6.0	<14	<5.9	<2.3	<1	<860	<360	<230	<450	<110	<23	<14	<18	<7.9	<2.5	<2.6	<1.2	<1.2	<1
1,1,2-Trichloroethane	<24	<55	<24	<9.1	<1	<3400	<1400	<920	<1800	<450	<91	<11	<71	<32	<10	<10	<5.0	<4.7	<1
1,1-Dichloroethane	<18	<41	<18	<6.8	<0.8	<2600	<1100	<690	<1400	<340	<68	<8	<53	<24	<7.6	<7.7	<3.7	<3.5	<0.8
1,1-Dichloroethene	<18	<41	<17	<6.7	<0.8	<2500	<1000	<670	<1300	<330	<67	<8	<52	<23	<7.5	<7.5	<3.7	<3.4	<0.8
1,2-Dibromoethane (EDB)	---	---	<6.7	<2.6	<2	---	---	---	---	<130	<26	<15	---	---	---	---	<1.4	<1.3	<2
1,2-Dichlorobenzene	---	---	<52	<20	<1	---	---	---	---	<1000	<200	<12	---	---	---	---	<11	<10	<1
1,2-Dichloroethane	<18	<41	<18	<6.8	<0.8	<2600	<1100	<690	<1400	<340	<68	<8	<53	<24	<7.6	<7.7	<3.7	<3.5	<0.8
1,2-Dichloropropane	<21	<47	<20	<7.7	<0.9	<2900	<1200	<780	<1500	<390	<77	<9	<60	<27	<8.7	<8.7	<4.2	<4.0	<0.9
1,3-Dichlorobenzene	---	---	<52	<20	<1	---	---	---	---	<1000	<200	<12	---	---	---	---	<11	<10	<1
1,4-Dichlorobenzene	---	---	<52	<20	<1	---	---	---	---	<1000	<200	<12	---	---	---	---	<11	<10	<1
1,4-Dioxane	---	---	<200	<76	---	---	---	---	---	<3800	<760	---	---	---	---	---	<42	<39	---
2-Butanone	---	---	78	50	5	---	---	---	---	<490	<99	21	---	---	---	---	53	51	10
2-Hexanone	---	---	<18	<6.8	<0.8	---	---	---	---	<340	<68	<8	---	---	---	---	<3.7	<3.5	<0.8
4-Methyl-2-pentanone	---	---	<36	<14	<0.8	---	---	---	---	<680	<140	<8	---	---	---	---	<7.5	13	2
Acetone	440	530	240	130	13	<29000	<12000	<7700	<15000	<3800	<760	73	790	790	380	310	82	90	15
Benzene	---	---	<14	<5.3	<0.6	---	---	---	---	<260	<53	<6	---	---	---	---	<2.9	<2.7	<0.6
Bromodichloromethane	<6.0	<14	<5.9	<2.3	<1	<860	<360	<230	<450	<110	<23	<13	<18	<7.9	<2.5	<2.6	<1.2	<1.2	<1
Bromoform	<46	<110	<45	<17	<2	<6500	<2700	<1700	<3400	<860	<170	<21	<130	<60	<19	<19	<9.5	<8.9	<2
Bromomethane	<17	<40	<17	<6.5	<0.8	<2500	<1000	<660	<1300	<320	<65	<8	<51	<23	<7.3	<7.3	<3.6	<3.3	<0.8
Carbonylsulfide	---	---	---	---	<0.6	---	---	---	---	---	---	<6	---	---	---	---	---	---	<0.6
Carbontetrachloride	<2.8	<6.5	<2.8	<1.1	<1	<400	<170	<110	<210	<53	<11	<13	<8.3	<3.7	<1.2	<1.2	<0.58	<0.54	<1
Chlorobenzene	<21	<47	<20	<7.7	<0.9	<2900	<1200	<780	<1500	<390	<77	<9	<60	<27	<8.7	<8.7	<4.2	<4.0	<0.9
Chloroethane	<23	<53	---	---	<0.5	<3300	<1400	<890	<1800	---	---	<5	<68	<31	<9.8	<9.9	---	---	<0.5
Chloroform	<22	<50	<21	<8.2	<1	<3100	<1300	<830	<1600	<410	<82	<10	<64	<28	<9.2	<9.2	<4.5	<4.2	<1
Chloromethane	<18	<41	---	---	<0.4	<2600	<1100	<690	<1400	---	---	<4	<53	<24	<7.6	<7.7	---	---	<0.4
cis-1,2-Dichloroethene	52	90	42	73	14	<2500	<1000	970	<1300	430	230	300	<52	<23	47	120	68	53	9
cis-1,3-Dichloropropene	<40	<92	<39	<15	<0.9	<5700	<2400	<1500	<3000	<760	<150	<9	<120	<53	<17	<17	<8.3	<7.8	<0.9
Dibromochloromethane	<7.7	<18	<7.5	<2.9	<2	<1100	<450	<290	<570	<140	<29	<17	<22	<10	<3.2	<3.2	<1.6	<1.5	<2
Dichloromethane	<15	<35	<15	<5.8	6	14000	<910	<580	<1100	<290	<58	27	<45	<20	<6.4	<6.5	<3.2	<3.0	5
Ethylbenzene	<38	---	<37	<14	<0.9	<5400	<2300	<1500	---	<720	<140	<9	<110	<50	<16	---	<7.9	<7.4	<0.9
Freon 113	---	---	---	---	2	---	---	---	---	---	---	40	---	---	---	---	---	---	<2
Hexachlorobutadiene	---	---	<120	<45	---	---	---	---	---	<2300	<460	---	---	---	---	---	<25	<23	---
Methyltert-butylether	---	---	<31	<12	<0.7	---	---	---	---	<600	<120	<7	---	---	---	---	<6.6	<6.1	<0.7
Naphthalene	---	---	<79	<30	---	---	---	---	---	<1500	<300	---	---	---	---	---	<17	<16	---
Styrene	---	---	<37	<14	<0.8	---	---	---	---	<710	<140	<8	---	---	---	---	<7.8	<7.3	<0.8
Tetrachloroethene	300	1100	320	280	140	26000	8800	5800	18000	3900	920	3000	1700	110	140	250	350	200	86
Toluene	---	---	<16	<6.2	<0.8	---	---	---	---	<310	<62	<8	---	---	---	---	<3.4	<3.2	<0.8
trans-1,2-Dichloroethene	<18	<41	<17	<6.7	<0.8	<2500	<1000	<670	<1300	<330	<67	<8	<52	<23	<7.5	<7.5	<3.7	<3.4	<0.8
Trans-1,3-Dichloropropene	<20	<46	<20	<7.6	<0.9	<2900	<1200	<770	<1500	<380	<76	<9	<59	<26	<8.5	<8.5	<4.2	<3.9	<0.9
Trichloroethene	2500D	6100D	1300	960D	390	240000	98000	70000	150000	35000	9900D	30000	5800	330	190	270	310	260	40
Trichlorofluoromethane	<25	<57	---	---	2 J	<3600	<1500	<950	<1900	---	---	<11	<73	<33	<11	<11	---	---	2
Vinyl Acetate	---	---	---	---	<0.7	---	---	---	---	---	---	<7	---	---	---	---	---	---	0.9
Vinyl chloride	<2.4	<5.5	<2.4	<0.91	<0.5	<340	<140	<92	<180	<45	<9.1	<5	<7.1	<3.2	<1.0	<1.0	1.7	<0.47	<0.5
m/p-xylene	<77	---	<75	<29	<2	<11000	<4600	<2900	---	<1400	<290	<17	<230	<100	<32	---	<16	<15	<2
o-Xylene	<38	---	<37	<14	<0.9	<5400	<2300	<1500	---	<720	<140	<9	<110	<50	<16	---	<7.9	<7.4	<0.9
Xylene (total)	<38	---	<75	<29	---	<11000	<4600	<2900	---	<1400	<290	---	<230	<100	<32	---	<16	<15	---

**Table 17**  
**Soil Vapor Analytical Results**  
**Building 5 SVE System**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**

CONSTITUENT (ug/m <sup>3</sup> )	BLDGS-SVE3			BLDGS-SVE4
	6/20/2013 (3)	11/5/2013 (4)	1/27/2014 (5)	9/3/2014 (7)
1,1,1-Trichloroethane	<30	<20	<12	<1
1,1,2,2-Tetrachloroethane	<7.4	<5.1	<3.1	<1
1,1,2-Trichloroethane	<30	<20	<12	<1
1,1-Dichloroethane	<22	<15	<9.2	<0.8
1,1-Dichloroethene	<22	<15	<9.0	<0.8
1,2-Dibromoethane (EDB)	---	---	<3.5	<2
1,2-Dichlorobenzene	---	---	<27	<1
1,2-Dichloroethane	<22	<15	<9.2	<0.8
1,2-Dichloropropane	<25	<17	<10	<0.9
1,3-Dichlorobenzene	---	---	<27	<1
1,4-Dichlorobenzene	---	---	<27	<1
1,4-Dioxane	---	---	<100	---
2-Butanone	---	---	130	16
2-Hexanone	---	---	<9.2	<0.8
4-Methyl-2-pentanone	---	---	18	2
Acetone	1000	750	330	40
Benzene	---	---	<7.2	<0.6
Bromodichloromethane	<7.4	<5.1	<3.1	<1
Bromoform	<57	<38	<23	<2
Bromomethane	<21	<15	<8.8	<0.8
Carbondisulfide	---	---	---	<0.6
Carbontetrachloride	<3.5	<2.4	<1.4	<1
Chlorobenzene	<25	<17	<10	<0.9
Chloroethane	<29	<20	---	<0.5
Chloroform	<27	<18	<11	<1
Chloromethane	<22	<15	---	<0.4
cis-1,2-Dichloroethene	<22	<15	<9.0	<0.8
cis-1,3-Dichloropropene	<50	<34	<20	<0.9
Dibromochloromethane	<9.4	<6.4	<3.9	<2
Dichloromethane	<19	<13	<7.8	5
Ethylbenzene	<47	---	<19	<0.9
Freon 113	---	---	---	<2
Hexachlorobutadiene	---	---	<61	---
Methyltert-butylether	---	---	<16	<0.7
Naphthalene	---	---	<41	---
Styrene	---	---	<19	<0.8
Tetrachloroethene	74	420	160	59
Toluene	---	---	<8.4	<0.8
trans-1,2-Dichloroethene	<22	<15	<9.0	<0.8
Trans-1,3-Dichloropropene	<25	<17	<10	<0.9
Trichloroethene	220	1100	430	7
Trichlorofluoromethane	<31	<21	---	2
Vinyl Acetate	---	---	---	<0.7
Vinyl chloride	<3.0	<2.0	<1.2	<0.5
m/p-xylene	<95	---	<39	<2
o-Xylene	<47	---	<19	<0.9
Xylene (total)	<47	---	<39	---

Notes: ug/m<sup>3</sup> = micrograms per cubic meter.  
<3.1 = not detected above listed detection limit.  
--- = constituent not sampled for.  
(1) sample collected during pilot testing  
(2) collected on day seven of system operation  
(3) collected on day 101 of system operation  
(4) collected on day 239 of system operation  
(5) collected on day 320 of system operation  
(6) collected on day 428 of system operation  
(7) collected on day 539 of system operation



Table 18  
Sub-Slab Soil Vapor and Indoor Air Analytical Results  
32 Tozer Road  
Former Varian Facility Site  
150 Sohier Road  
Beverly, Massachusetts

CONSTITUENT (ug/m3)	32 TOZER-1				32 TOZER-2				32 TOZER-3				MassDEP Commercial/ Industrial Indoor Air Threshold Value (1)
	5/28/2013 Indoor Air	10/24/2013 Indoor Air	2/6/2014 Indoor Air	4/17/2014 Indoor Air	5/28/2013 Indoor Air	10/24/2013 Indoor Air	2/6/2014 Indoor Air	4/17/2014 Indoor Air	5/28/2013 Indoor Air	10/24/2013 Indoor Air	2/6/2014 Indoor Air	4/17/2014 Indoor Air	
1,1,1-Trichloroethane	<0.94	<1.2	<0.95	<0.93	<1.0	<0.99	<0.99	<0.94	<0.98	<1.0	<0.92	<0.86	4,600
1,1-Dichloroethane	<0.71	<0.92	<0.71	<0.70	<0.76	<0.74	<0.74	<0.70	<0.74	<0.77	<0.69	<0.65	440
1,1-Dichloroethene	<0.69	<0.90	<0.70	<0.68	<0.74	<0.73	<0.73	<0.69	<0.72	<0.76	<0.67	<0.63	180
cis-1,2-Dichloroethene	<b>1.5</b>	<b>3.3</b>	<b>1.3</b>	<b>3.9</b>	<b>1.8</b>	<b>2.2</b>	<b>1.1</b>	<b>1.7</b>	<0.72	<0.76	<0.67	<0.63	31
Tetrachloroethene	<b>6.5</b>	<b>11</b>	<b>6.6</b>	<b>18</b>	<b>12</b>	<b>3.9</b>	<b>1.3</b>	<b>3.8</b>	<0.13	<b>0.33</b>	<b>0.25</b>	<b>0.26</b>	4.1
trans-1,2-Dichloroethene	<0.69	<0.90	<0.70	<0.68	<0.74	<0.73	<0.73	<0.69	<0.72	<0.76	<0.67	<0.63	62
Trichloroethene	<b>0.96</b>	<b>1.5</b>	<b>0.81</b>	<b>1.9</b>	<b>1.3</b>	<b>0.67</b>	<b>0.29</b>	<b>0.55</b>	<0.098	<0.10	<b>0.092</b>	<0.086	1.8
Vinyl chloride	<0.094	<0.12	<0.095	<0.093	<0.10	<0.099	<0.099	<0.094	<0.098	<0.10	<0.092	<0.086	1.3

CONSTITUENT (ug/m3)	32 TOZER-SV3				32 TOZER-SV4				32 TOZER-SV5				MassDEP Commercial/ Industrial Sub-Slab Soil Gas Screening
	5/28/2013 Soil Vapor	10/24/2013 Soil Vapor	2/6/2014 Soil Vapor	4/17/2014 Soil Vapor	5/28/2013 Soil Vapor	10/24/2013 Soil Vapor	2/6/2014 Soil Vapor	4/17/2014 Soil Vapor	5/28/2013 Soil Vapor	10/24/2013 Soil Vapor	2/6/2014 Soil Vapor	4/17/2014 Soil Vapor	
1,1,1-Trichloroethane	<270	<110	<110	<370	<20	<5.0	<7.2	<0.83	<20	<1.3	<1.2	<0.91	320,000
1,1-Dichloroethane	<210	<79	<80	<280	<15	<3.7	<5.4	<b>0.8</b>	<15	<0.95	<0.87	<0.68	31,000
1,1-Dichloroethene	<200	<77	<79	<270	<15	<3.7	<5.3	<0.61	<15	<0.93	<0.85	<0.67	13,000
cis-1,2-Dichloroethene	<b>8,900</b>	<b>3,100</b>	<b>4,300</b>	<b>17,000</b>	<b>130</b>	<b>80</b>	<b>83</b>	<b>45</b>	<b>38</b>	<b>7.9</b>	<0.85	<0.67	2,200
Tetrachloroethene	<b>8,600</b>	<b>8,100</b>	<b>7,600</b>	<b>14,000</b>	<b>300</b>	<b>610</b>	<b>460</b>	<b>160</b>	<b>32</b>	<b>24</b>	<b>1.3</b>	<b>1.4</b>	290
trans-1,2-Dichloroethene	<200	<77	<79	<270	<15	<3.7	<5.3	<0.61	<15	<0.93	<0.85	<0.67	4,300
Trichloroethene	<b>6,100</b>	<b>1,500</b>	<b>1,900</b>	<b>4,500</b>	<b>150</b>	<b>68</b>	<b>70</b>	<b>37</b>	<b>15</b>	<b>4.8</b>	<b>0.45</b>	<b>0.41</b>	130
Vinyl chloride	<27	<11	<11	<37	<2.0	<b>1.7</b>	<b>2.2</b>	<b>1.2</b>	<2.0	<0.13	<0.12	<0.091	91

**Notes:**

(1) Massachusetts DEP December 2011 Interim Final Vapor Intrusion Guidance (WSC-11-435) Table I.2 Commercial/Industrial Indoor Air Threshold Values (updated 3/7/13)

(2) Massachusetts DEP December 2011 Interim Final Vapor Intrusion Guidance (WSC-11-435) Table II.2 Commercial/Industrial Sub-Slab Soil Gas Screening Values (updated 3/7/13).

Detections are shown in bold.

ug/m3 = Micrograms per cubic meter.

<3.1 = not detected above listed detection limit.

**Shaded** = Result exceeds applicable Massachusetts DEP threshold or screening value

**Table 19**  
**Risk Evaluation - Indoor Air Exposures - Site Workers - 32 Tozer Road**  
**2013 and 2014 Indoor Air Sampling**

**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, MA**

EXPOSURE ESTIMATES:							
Inhalation of Volatiles							
ADE	=	$\frac{OHM_{air} * EF * ET * ED * C1}{AP_{nc}}$					
LADE	=	$\frac{OHM_{air} * EF * ET * ED}{AP_c}$					
HI	=	ADE/RfC		Cumulative ELCR = 5E-06		MassDEP Limit = 1E-05	
ELCR	=	LADE * UR		Cumulative HI = 0.5		MassDEP Limit = 1	
Parameter		Description	Units	Value	Reference		
ADE	=	Average daily exposure	m <sup>3</sup> /mg	See below	Calculated		
LADE	=	Lifetime average daily exposure	µg/m <sup>3</sup>	See below	Calculated		
HI	=	Hazard Index	unitless	See below	Calculated		
ELCR	=	Excess lifetime cancer risk	unitless	See below	Calculated		
RfC	=	Inhalation reference concentration	mg/m <sup>3</sup>	See below	EPA (2014); MassDEP (2014)		
UR	=	Inhalation Unit Risk	m <sup>3</sup> /µg	See below	EPA (2013)		
OHM <sub>air</sub>	=	Concentration in air	µg/m <sup>3</sup>	See below	Measured		
EF	=	Exposure frequency	days/year	250	5 days/week, 2 weeks vacation		
ET	=	Exposure time	days/day	0.330	8 hours per day		
ED	=	Exposure duration	years	27.0	MassDEP (2014)		
AP <sub>nc</sub>	=	Averaging period, noncarcinogens	days	9,855	ED*365		
AP <sub>c</sub>	=	Averaging period, carcinogens	days	25,550	Lifetime		
C1	=	Conversion factor	mg/µg	1.00E-03	Constant		
Compound	OHM <sub>air</sub> *	RfC <i>Chronic</i>	UR	ADE	HI	LADE	ELCR
<b>Volatile Organic Compounds</b>							
Tetrachloroethene	1.80E+01	4.00E-02	3.00E-06	4.07E-03	1.02E-01	1.57E+00	4.71E-06
Trichloroethene	1.90E+00	2.00E-03	4.10E-06	4.29E-04	2.15E-01	1.66E-01	6.79E-07
cis-1,2-Dichloroethene	3.90E+00	6.00E-03	--	8.82E-04	1.47E-01	3.40E-01	NC
<b>TOTAL RISK</b>					<b>4.63E-01</b>		<b>5.39E-06</b>

**Notes:**

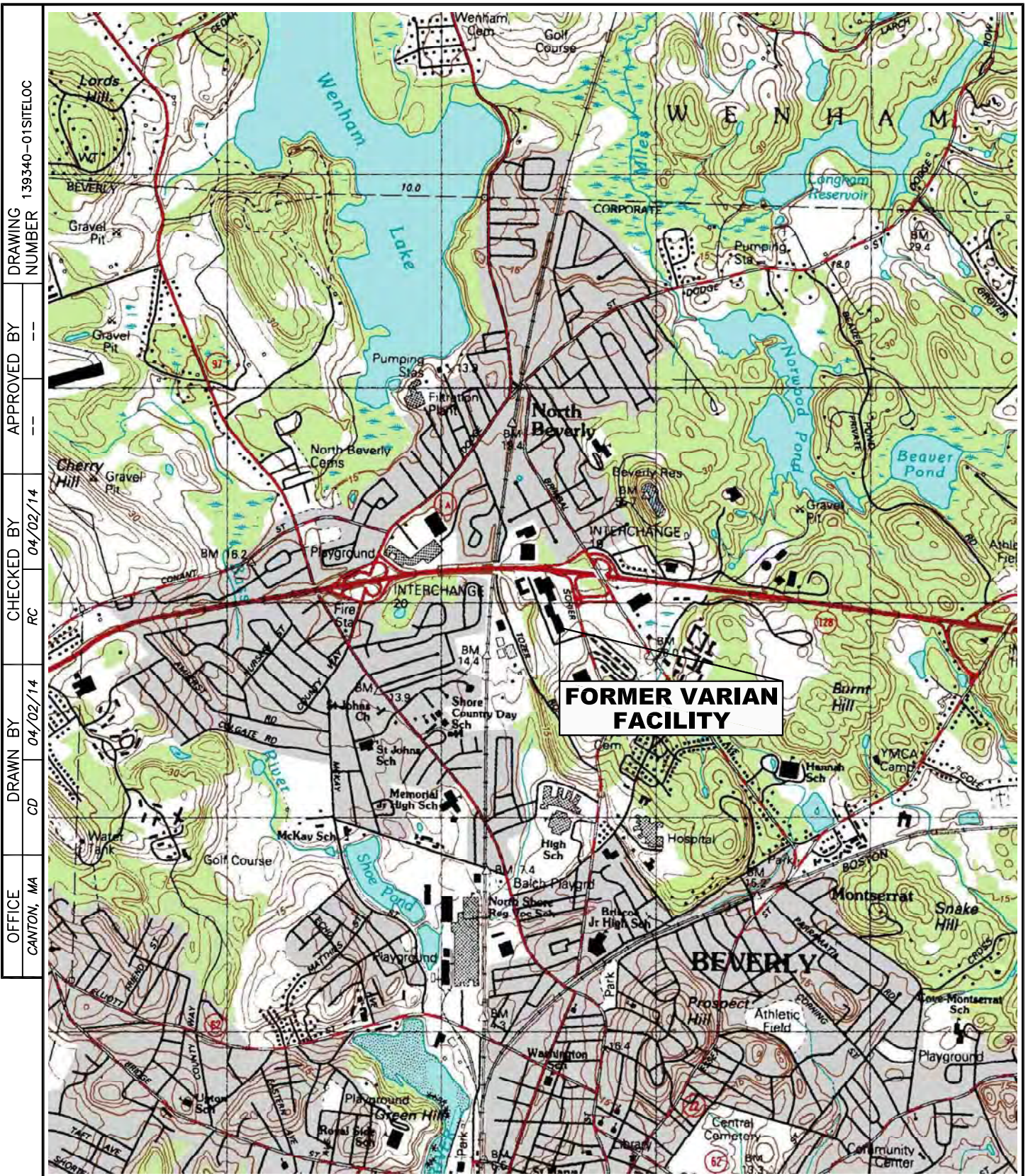
OHM<sub>air</sub> is maximum indoor air result from 5/2013, 10/2013, 2/2014, and 4/2014 sampling

EPA 2014 - Integrated Risk Information System (IRIS)

MassDEP 2014 - Short Forms (April)

## FIGURES





DRAWING NUMBER 139340-01SITELOC

APPROVED BY

CHECKED BY RC 04/02/14

DRAWN BY CD 04/02/14

OFFICE CANTON, MA



MASSACHUSETTS

SOURCE:  
 USGS 7.5 MIN. SERIES TARGET QUAD, 1985  
 SCALE: 1:25,000  
 X = 250750 m  
 Y = 925017 m  
 MA STATE PLANE GRID (meters)



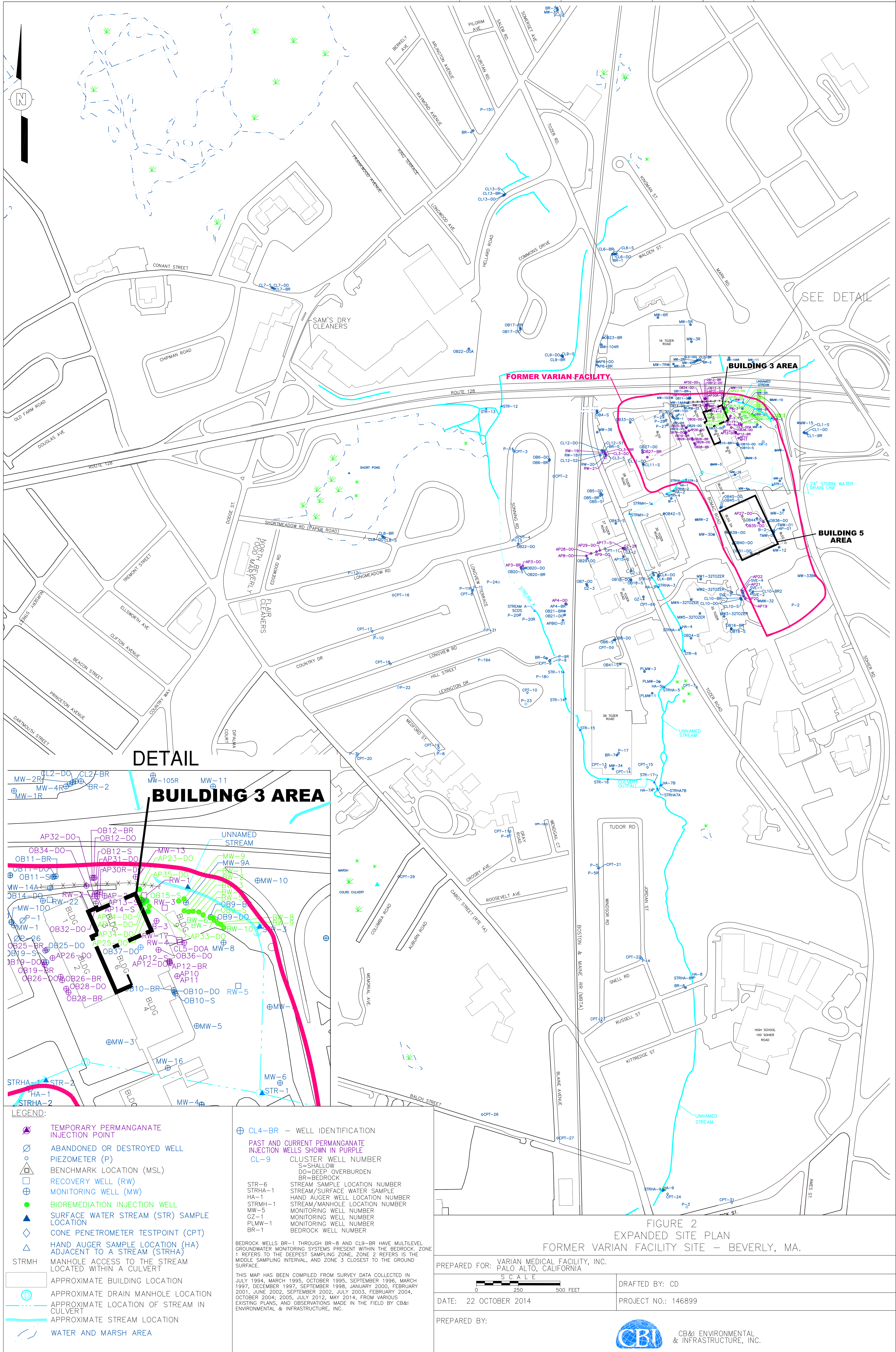
CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.  
 150 ROYALL STREET  
 CANTON, MASSACHUSETTS  
 (617) 589-5111

FIGURE 1  
 SITE LOCATION MAP

FORMER VARIAN FACILITY  
 150 SOHIER ROAD  
 BEVERLY, MASSACHUSETTS



DRAWN BY	CD	CHECKED BY	RC	05/15/14	DRAWING NAME
	05/15/14	APPROVED BY	RC	05/15/14	SITE_PLAN22b



**DETAIL**  
**BUILDING 3 AREA**

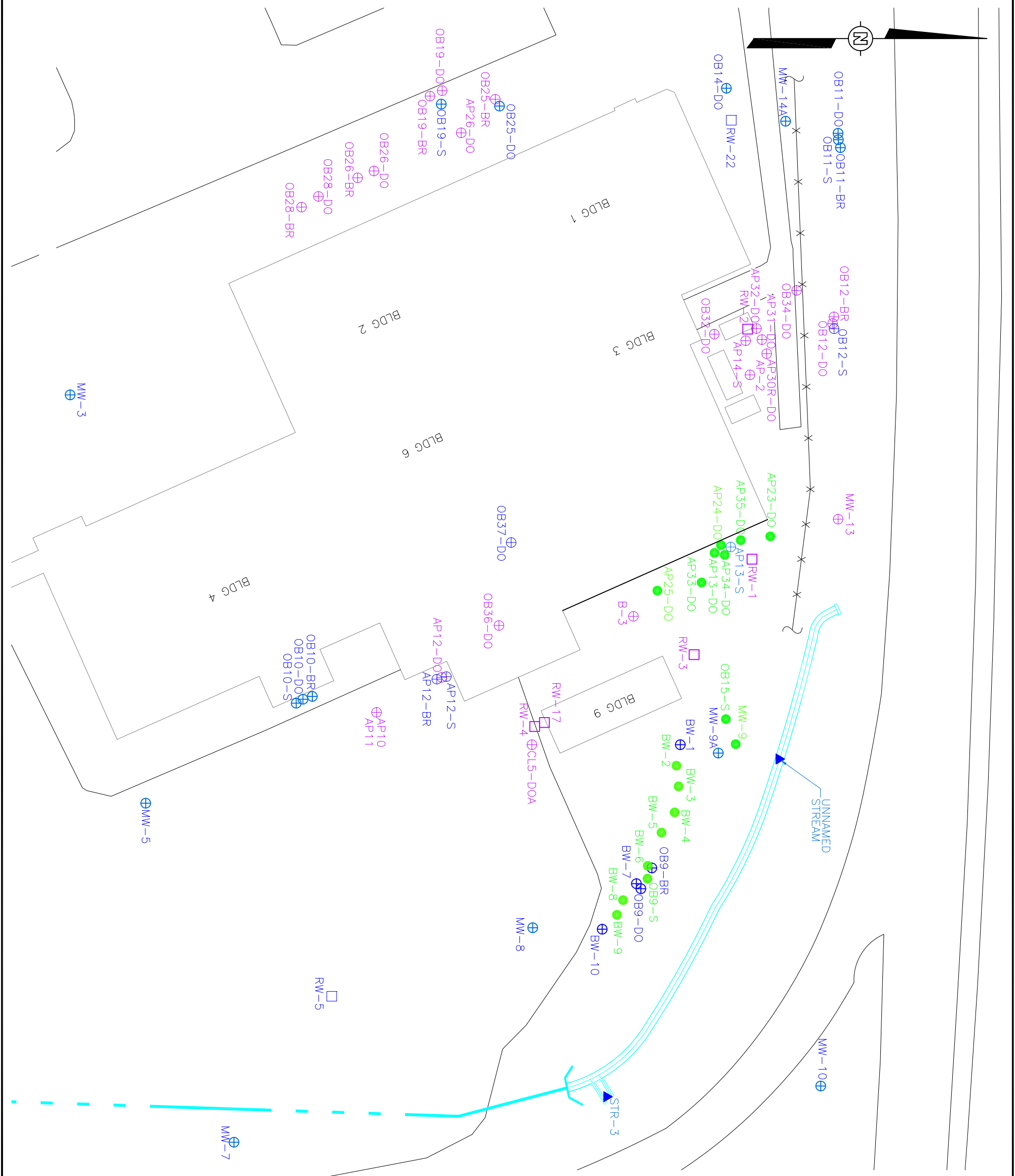
<ul style="list-style-type: none"> <li> TEMPORARY PERMANGANATE INJECTION POINT</li> <li> ABANDONED OR DESTROYED WELL</li> <li> PIEZOMETER (P)</li> <li> BENCHMARK LOCATION (MSL)</li> <li> RECOVERY WELL (RW)</li> <li> MONITORING WELL (MW)</li> <li> BIOREMEDIATION INJECTION WELL</li> <li> SURFACE WATER STREAM (STR) SAMPLE LOCATION</li> <li> CONE PENETROMETER TESTPOINT (CPT)</li> <li> HAND AUGER SAMPLE LOCATION (HA) ADJACENT TO A STREAM (STRHA)</li> <li> MANHOLE ACCESS TO THE STREAM LOCATED WITHIN A CULVERT</li> <li> APPROXIMATE BUILDING LOCATION</li> <li> APPROXIMATE DRAIN MANHOLE LOCATION</li> <li> APPROXIMATE LOCATION OF STREAM IN CULVERT</li> <li> APPROXIMATE STREAM LOCATION</li> <li> WATER AND MARSH AREA</li> </ul>	<ul style="list-style-type: none"> <li> CL4-BR - WELL IDENTIFICATION</li> <li> PAST AND CURRENT PERMANGANATE INJECTION WELLS SHOWN IN PURPLE</li> <li> CL-9 CLUSTER WELL NUMBER</li> <li> S=SHALLOW</li> <li> DO=DEEP OVERBURDEN</li> <li> BR=BEDROCK</li> <li> STR-6 STREAM SAMPLE LOCATION NUMBER</li> <li> STRHA-1 STREAM/SURFACE WATER SAMPLE HAND AUGER WELL LOCATION NUMBER</li> <li> STRMH-1 STREAM/MANHOLE LOCATION NUMBER</li> <li> MW-5 MONITORING WELL NUMBER</li> <li> GZ-1 MONITORING WELL NUMBER</li> <li> PLMW-1 MONITORING WELL NUMBER</li> <li> BR-1 BEDROCK WELL NUMBER</li> </ul> <p>                     BEDROCK WELLS BR-1 THROUGH BR-8 AND CL9-BR HAVE MULTILEVEL GROUNDWATER MONITORING SYSTEMS PRESENT WITHIN THE BEDROCK. ZONE 1 REFERS TO THE DEEPEST SAMPLING ZONE, ZONE 2 REFERS TO THE MIDDLE SAMPLING INTERVAL, AND ZONE 3 CLOSEST TO THE GROUND SURFACE.                      THIS MAP HAS BEEN COMPILED FROM SURVEY DATA COLLECTED IN JULY 1994, MARCH 1995, OCTOBER 1995, SEPTEMBER 1996, MARCH 1997, DECEMBER 1997, SEPTEMBER 1998, JANUARY 2000, FEBRUARY 2001, JUNE 2002, SEPTEMBER 2002, JULY 2003, FEBRUARY 2004, OCTOBER 2004, 2005, JULY 2012, MAY 2014, FROM VARIOUS EXISTING PLANS, AND OBSERVATIONS MADE IN THE FIELD BY CB&amp;I ENVIRONMENTAL &amp; INFRASTRUCTURE, INC.                 </p>
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FIGURE 2  
 EXPANDED SITE PLAN  
 FORMER VARIAN FACILITY SITE - BEVERLY, MA.

PREPARED FOR: VARIAN MEDICAL FACILITY, INC. PALO ALTO, CALIFORNIA SCALE 	DRAFTED BY: CD PROJECT NO.: 146899
DATE: 22 OCTOBER 2014	PREPARED BY:  CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.




OFFICE CANTON, MA	DRAWN BY CD	CHECKED BY RC	APPROVED BY --	DRAWING NUMBER BUILDING9_SITE_PLAN_rev1
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**LEGEND**

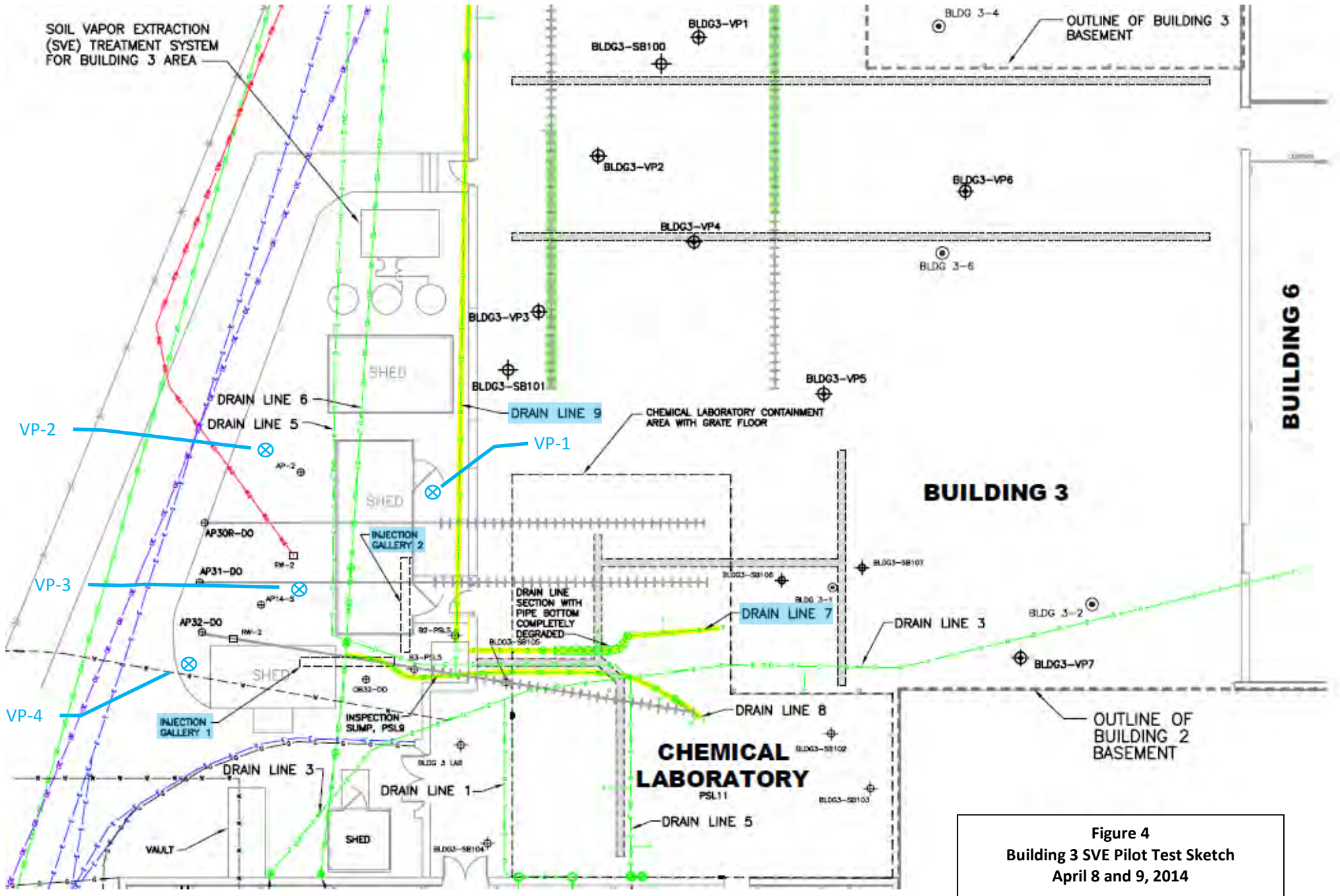
- APPROXIMATE BUILDING LOCATION
- APPROXIMATE LOCATION OF STREAM IN CULVERT
- APPROXIMATE STREAM LOCATION
- RECOVERY WELL (RW)
- ⊕ MONITORING WELL (MW)
- BIOREMEDIATION INJECTION WELL (CURRENT PERMAGANATE INJECTION WELLS SHOWN IN PURPLE)
- ▲ SURFACE WATER STREAM (STR) SAMPLE LOCATION
- ⊕ CL-4-BR - WELL IDENTIFICATION
- CL-9 CLUSTER WELL NUMBER
- S=SHALLOW
- DO=DEEP OVERBURDEN
- BR=BEDROCK
- STR-6 STREAM SAMPLE LOCATION NUMBER
- STRHA-1 STREAM/SURFACE WATER SAMPLE HAND AUGER WELL LOCATION NUMBER
- STRMH-1 STREAM/MANHOLE LOCATION NUMBER
- MW-5 MONITORING WELL NUMBER
- GZ-1 MONITORING WELL NUMBER
- PLMW-1 MONITORING WELL NUMBER
- BR-1 BEDROCK WELL NUMBER

THIS MAP HAS BEEN COMPILED FROM SURVEY DATA COLLECTED IN JULY 1994, MARCH 1995, OCTOBER 1995, SEPTEMBER 1996, MARCH 1997, DECEMBER 1997, SEPTEMBER 1998, JANUARY 2000, FEBRUARY 2001, JUNE 2002, SEPTEMBER 2002, JULY 2003, FEBRUARY 2004, OCTOBER 2004, 2005, JULY 2012, MAY 2014 FROM VARIOUS EXISTING PLANS, AND OBSERVATIONS MADE IN THE FIELD BY CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.

CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.  
 150 ROYALL STREET  
 CANTON, MASSACHUSETTS  
 (617) 589-5111

**FIGURE 3**  
**BIOREMEDIATION**  
**INJECTION WELL LOCATIONS**  
 VARIAN MEDICAL SYSTEMS, INC.  
 150 SOHIER ROAD  
 BEVERLY, MASSACHUSETTS



VP-2  
VP-3  
VP-4

⊗ Temporary Vapor Point (approx.)

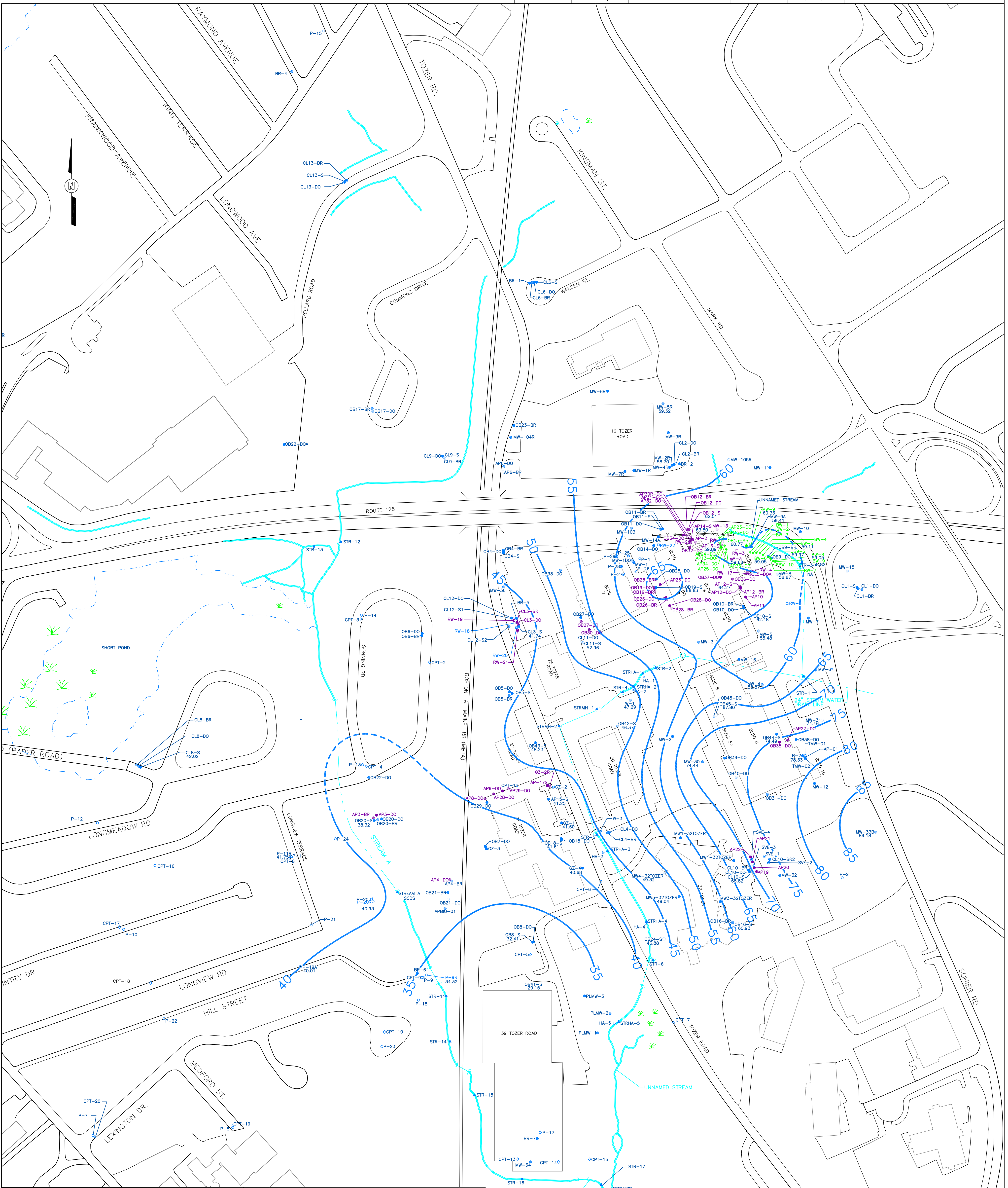
Structure used in SVE Pilot Test

Scale: NA

Figure 4  
 Building 3 SVE Pilot Test Sketch  
 April 8 and 9, 2014  
 Former Varian Facility Site  
 150 Sohier Road  
 Beverly, MA



DRAWN BY	CD	CHECKED BY	RC	06/02/14	DRAWING NAME
	06/02/14	APPROVED BY	RC	06/02/14	SH GWC-APR14



**LEGEND:**

- +++++ RAILROAD TRACK
- ⊗ TEMPORARY INJECTION POINT
- ⊗ ABANDONED OR DESTROYED WELL
- ⊙ PIEZOMETER (P)
- ⊙ BENCHMARK LOCATION (MSL)
- ⊙ RECOVERY WELL (RW)
- ⊕ MONITORING WELL (MW)
- ▲ SURFACE WATER STREAM (STR) SAMPLE LOCATION
- ◆ CONE PENETROMETER TESTPOINT (CPT)
- ◇ HAND AUGER SAMPLE LOCATION (HA) ADJACENT TO A STREAM (STRHA)
- ⊕ BIOREMEDIATION INJECTION WELLS INJECTION LOCATIONS SHOWN IN GREEN
- SHALLOW BIOREMEDIATION BARRIER WELL (BW)
- STRMH MANHOLE ACCESS TO THE STREAM LOCATED WITHIN A CULVERT
- APPROXIMATE BUILDING LOCATION
- ⊙ APPROXIMATE DRAIN MANHOLE LOCATION
- APPROXIMATE LOCATION OF STREAM IN CULVERT
- APPROXIMATE STREAM LOCATION
- WATER AND MARSH AREA

- ⊕ OB18-S - WELL IDENTIFICATION  
41.61  
- GROUNDWATER ELEVATION - ELEVATION IN FEET  
- GAUGING DATES 04/07/2014 THROUGH 04/29/2014  
- DASHED WHERE INFERRED
- ▲ PAST AND CURRENT PERMANGANATE INJECTION WELLS SHOWN IN PURPLE
- CL-9 CLUSTER WELL NUMBER  
S=SHALLOW  
DO=DEEP OVERBURDEN  
BR=BEDROCK
- STR-6 STREAM SAMPLE LOCATION NUMBER  
STRHA-1 STREAM/SURFACE WATER SAMPLE  
HA-1 HAND AUGER WELL LOCATION NUMBER  
STRMH-1 STREAM/MANHOLE LOCATION NUMBER  
MW-5 MONITORING WELL NUMBER  
CZ-1 MONITORING WELL NUMBER  
PLMW-1 MONITORING WELL NUMBER  
BR-1 BEDROCK WELL NUMBER

BEDROCK WELLS BR-1 THROUGH BR-8 AND CL9-BR HAVE MULTILEVEL GROUNDWATER MONITORING SYSTEMS PRESENT WITHIN THE BEDROCK. ZONE 1 REFERS TO THE DEEPEST SAMPLING ZONE, ZONE 2 REFERS TO IS THE MIDDLE SAMPLING INTERVAL, AND ZONE 3 CLOSEST TO THE GROUND SURFACE. THIS MAP HAS BEEN COMPILED FROM SURVEY DATA COLLECTED IN JULY 1994, MARCH 1995, OCTOBER 1995, SEPTEMBER 1996, MARCH 1997, DECEMBER 1997, SEPTEMBER 1998, JANUARY 2000, FEBRUARY 2001, JUNE 2002, SEPTEMBER 2002, JULY 2003, FEBRUARY 2004, OCTOBER 2004, JULY 2012, MAY 2014, FROM VARIOUS EXISTING PLANS, AND OBSERVATIONS MADE IN THE FIELD BY CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.

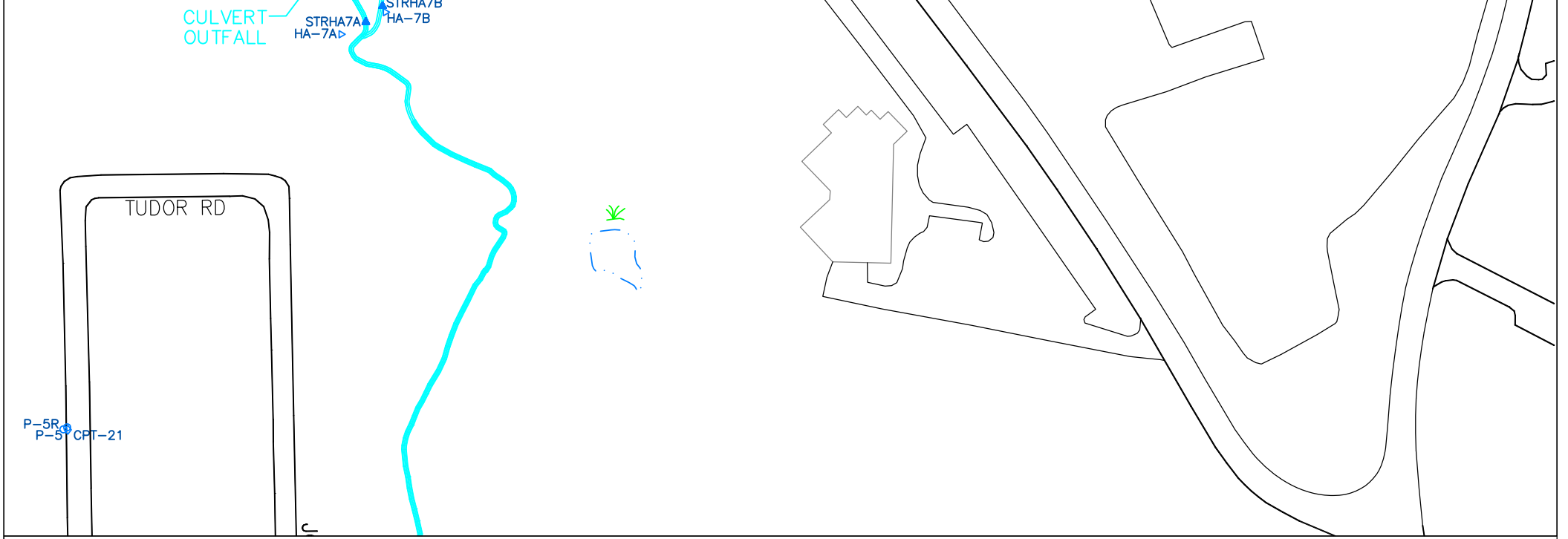
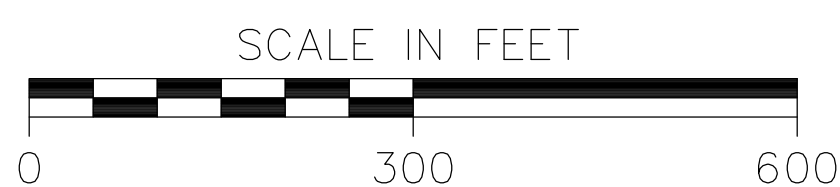


FIGURE 5  
 GROUNDWATER ELEVATION CONTOURS IN  
 SHALLOW OVERBURDEN AQUIFER

PREPARED FOR: VARIAN MEDICAL SYSTEMS, INC. PALO ALTO, CALIFORNIA	DRAFTED BY: CD
SCALE: 1" = 150'	PROJECT NO.: 150151
DATE: 25 MAY 2014	
PREPARED BY:	



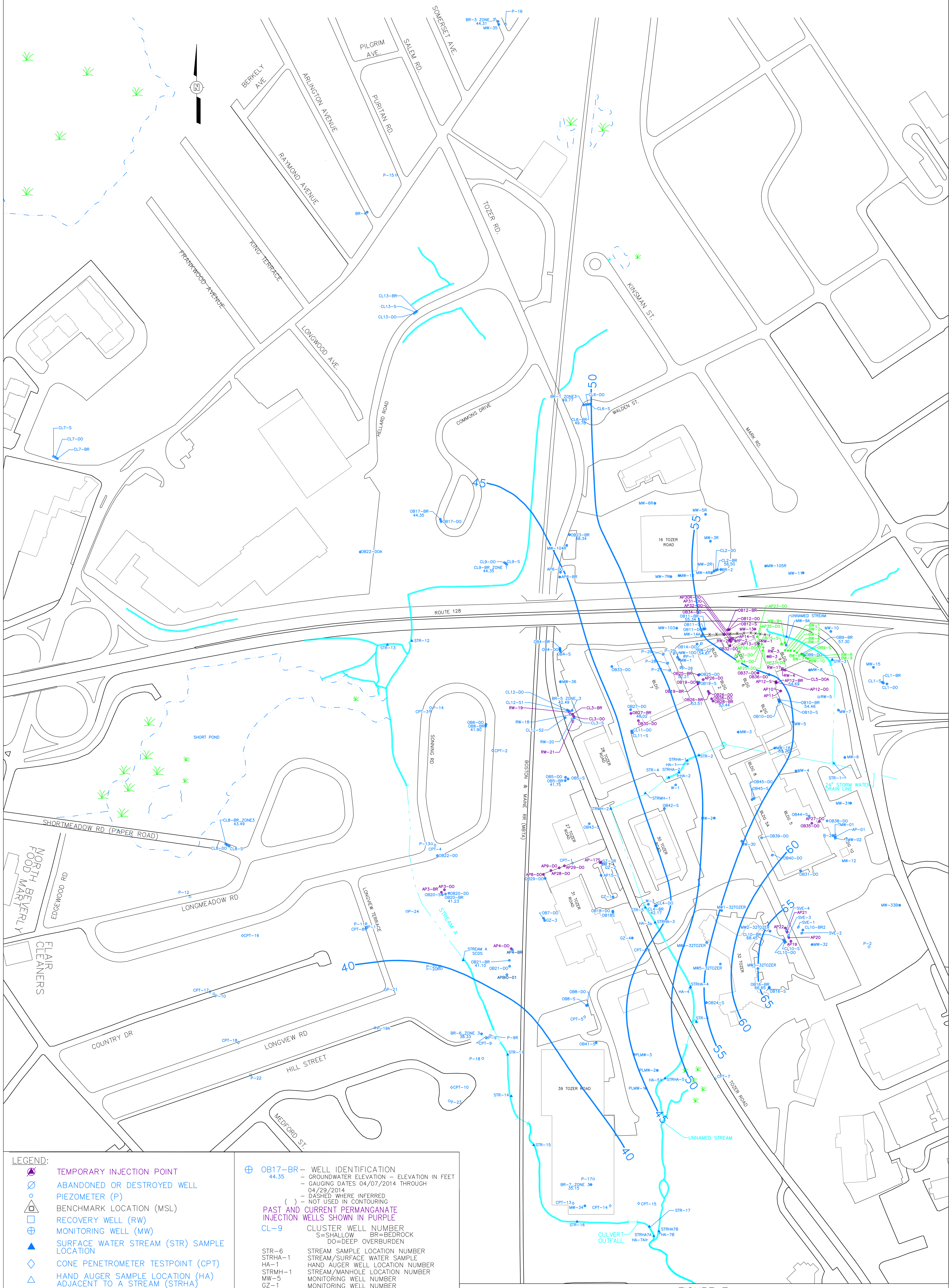
CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.







DRAWN BY	CD	CHECKED BY	RC	10/03/14	DRAWING NAME
	10/03/14	APPROVED BY	RC	10/03/14	



- LEGEND:**
- TEMPORARY INJECTION POINT
  - ABANDONED OR DESTROYED WELL
  - PIEZOMETER (P)
  - BENCHMARK LOCATION (MSL)
  - RECOVERY WELL (RW)
  - MONITORING WELL (MW)
  - SURFACE WATER STREAM (STR) SAMPLE LOCATION
  - CONE PENETROMETER TESTPOINT (CPT)
  - HAND AUGER SAMPLE LOCATION (HA) ADJACENT TO A STREAM (STRHA)
  - BIOREMEDIATION INJECTION WELLS INJECTION LOCATIONS SHOWN IN GREEN
  - SHALLOW BIOREMEDIATION BARRIER WELL (BW)
  - MANHOLE ACCESS TO THE STREAM LOCATED WITHIN A CULVERT
  - APPROXIMATE BUILDING LOCATION
  - APPROXIMATE DRAIN MANHOLE LOCATION
  - APPROXIMATE LOCATION OF STREAM IN CULVERT
  - APPROXIMATE STREAM LOCATION
  - WATER AND MARSH AREA

**OB17-BR** - WELL IDENTIFICATION  
 44.35 - GROUNDWATER ELEVATION - ELEVATION IN FEET  
 - GAUGING DATES 04/07/2014 THROUGH 04/29/2014  
 ( ) - DASHED WHERE INFERRED  
 - NOT USED IN CONTOURING

**PAST AND CURRENT PERMANGANATE INJECTION WELLS SHOWN IN PURPLE**

**CL-9** CLUSTER WELL NUMBER  
 S=SHALLOW BR=BEDROCK DO=DEEP OVERBURDEN

STR-6 STREAM SAMPLE LOCATION NUMBER  
 STRHA-1 STREAM/SURFACE WATER SAMPLE HAND AUGER WELL LOCATION NUMBER  
 HA-1  
 STRMH-1 STREAM/MANHOLE LOCATION NUMBER  
 MW-5 MONITORING WELL NUMBER  
 GZ-1 MONITORING WELL NUMBER  
 PLMW-1 MONITORING WELL NUMBER  
 BR-1 BEDROCK WELL NUMBER

BEDROCK WELLS BR-1 THROUGH BR-8 AND CL9-BR HAVE MULTILEVEL GROUNDWATER MONITORING SYSTEMS PRESENT WITHIN THE BEDROCK. ZONE 1 REFERS TO THE DEEPEST SAMPLING ZONE, ZONE 2 REFERS TO THE MIDDLE SAMPLING INTERVAL, AND ZONE 3 CLOSEST TO THE GROUND SURFACE. THIS MAP HAS BEEN COMPILED FROM SURVEY DATA COLLECTED IN JULY 1994, MARCH 1995, OCTOBER 1995, SEPTEMBER 1996, MARCH 1997, DECEMBER 1997, SEPTEMBER 1998, JANUARY 2000, FEBRUARY 2001, JUNE 2002, SEPTEMBER 2002, JULY 2003, FEBRUARY 2004, OCTOBER 2004, JULY 2012, MAY 2014, FROM VARIOUS EXISTING PLANS, AND OBSERVATIONS MADE IN THE FIELD BY CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.

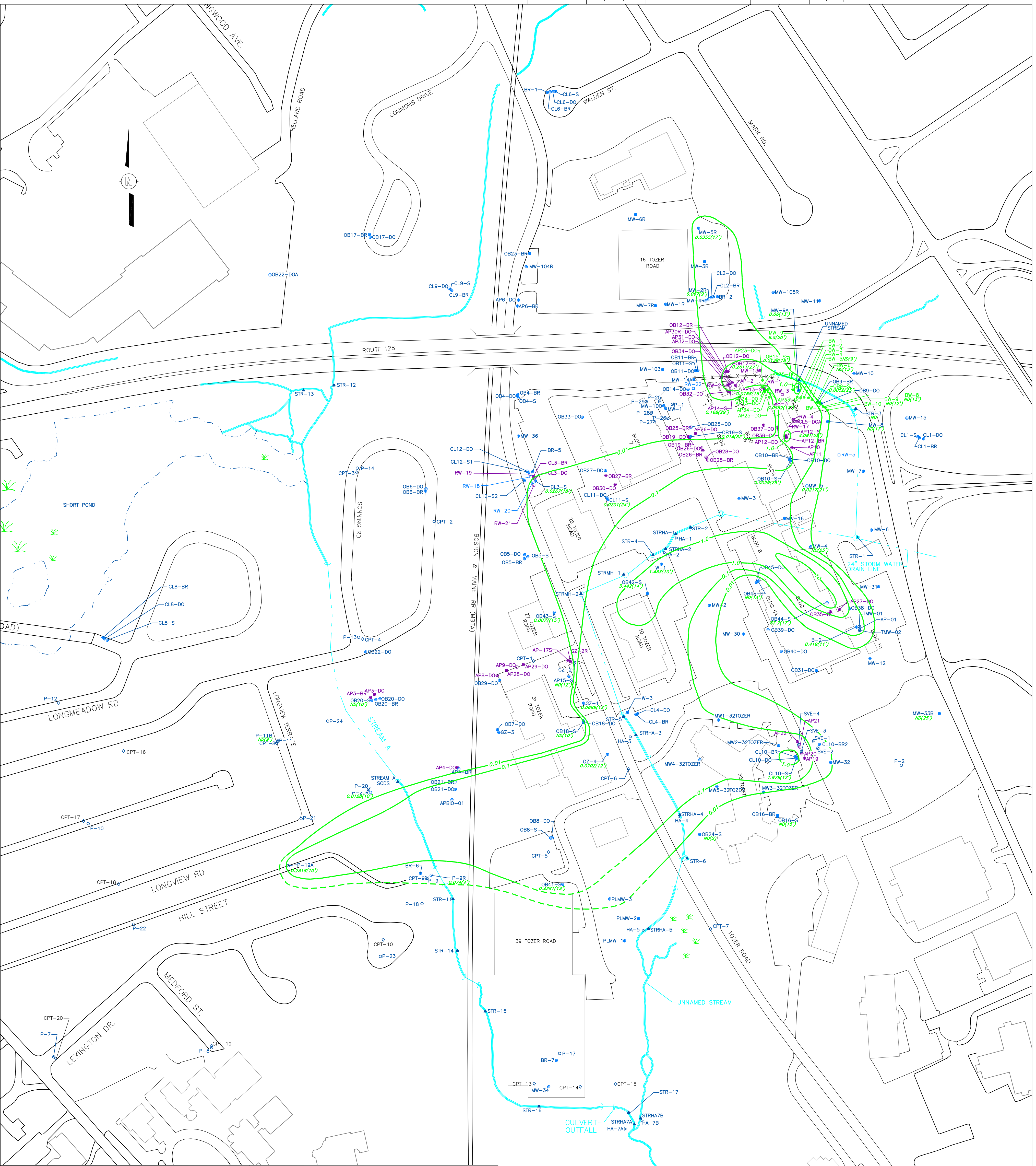


FIGURE 7  
 GROUNDWATER ELEVATION CONTOURS  
 IN BEDROCK AQUIFER

PREPARED FOR: VARIAN MEDICAL SYSTEMS, INC. PALO ALTO, CALIFORNIA	
SCALE: 1" = 170'	DRAFTED BY: CD
DATE: 03 OCTOBER 2014	PROJECT NO.: 146899
PREPARED BY:	CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.



DRAWN BY	CD	CHECKED BY	RC	10/06/14	DRAWING NAME	SH_VOC-APR14
	10/06/14	APPROVED BY	RC	10/06/14		



- LEGEND:**
- TEMPORARY INJECTION POINT
  - ABANDONED OR DESTROYED WELL
  - PIEZOMETER (P)
  - BENCHMARK LOCATION (MSL)
  - RECOVERY WELL (RW)
  - MONITORING WELL (MW)
  - SURFACE WATER STREAM (STR) SAMPLE LOCATION
  - CONE PENETROMETER TESTPOINT (CPT)
  - HAND AUGER SAMPLE LOCATION (HA) ADJACENT TO A STREAM (STRHA)
  - BIOREMEDIATION INJECTION WELLS
  - INJECTION LOCATIONS SHOWN IN GREEN
  - SHALLOW BIOREMEDIATION BARRIER WELL (BW)
  - STRMH MANHOLE ACCESS TO THE STREAM LOCATED WITHIN A CULVERT
  - APPROXIMATE BUILDING LOCATION
  - APPROXIMATE DRAIN MANHOLE LOCATION
  - APPROXIMATE LOCATION OF STREAM IN CULVERT
  - APPROXIMATE STREAM LOCATION
  - WATER AND MARSH AREA
  - CLUSTER WELL NUMBER  
S=SHALLOW  
DO=DEEP OVERBURDEN  
BR=BEDROCK
  - STREAM SAMPLE LOCATION NUMBER
  - STREAM/SURFACE WATER SAMPLE HAND AUGER WELL LOCATION NUMBER
  - STREAM/MANHOLE LOCATION NUMBER
  - MONITORING WELL NUMBER
  - CONE PENETROMETER TESTPOINT NUMBER
  - MONITORING WELL NUMBER
  - BEDROCK WELL NUMBER

**ND** NON DETECT

**1.0** TOTAL VOLATILE ORGANIC COMPOUND (VOC) ISOCONCENTRATION CONTOUR IN MILLIGRAMS PER LITER (mg/L) THIS IS GRAPHICAL REPRESENTATION OF TOTAL VOC CONCENTRATIONS

**---** DASHING INDICATES AN INFERRED CONTOUR

**CL10-S** - WELL IDENTIFICATION  
**1.976(12')** - TOTAL VOC CONCENTRATIONS (mg/L) (SAMPLE DEPTH BELOW GRADE IN FT.)

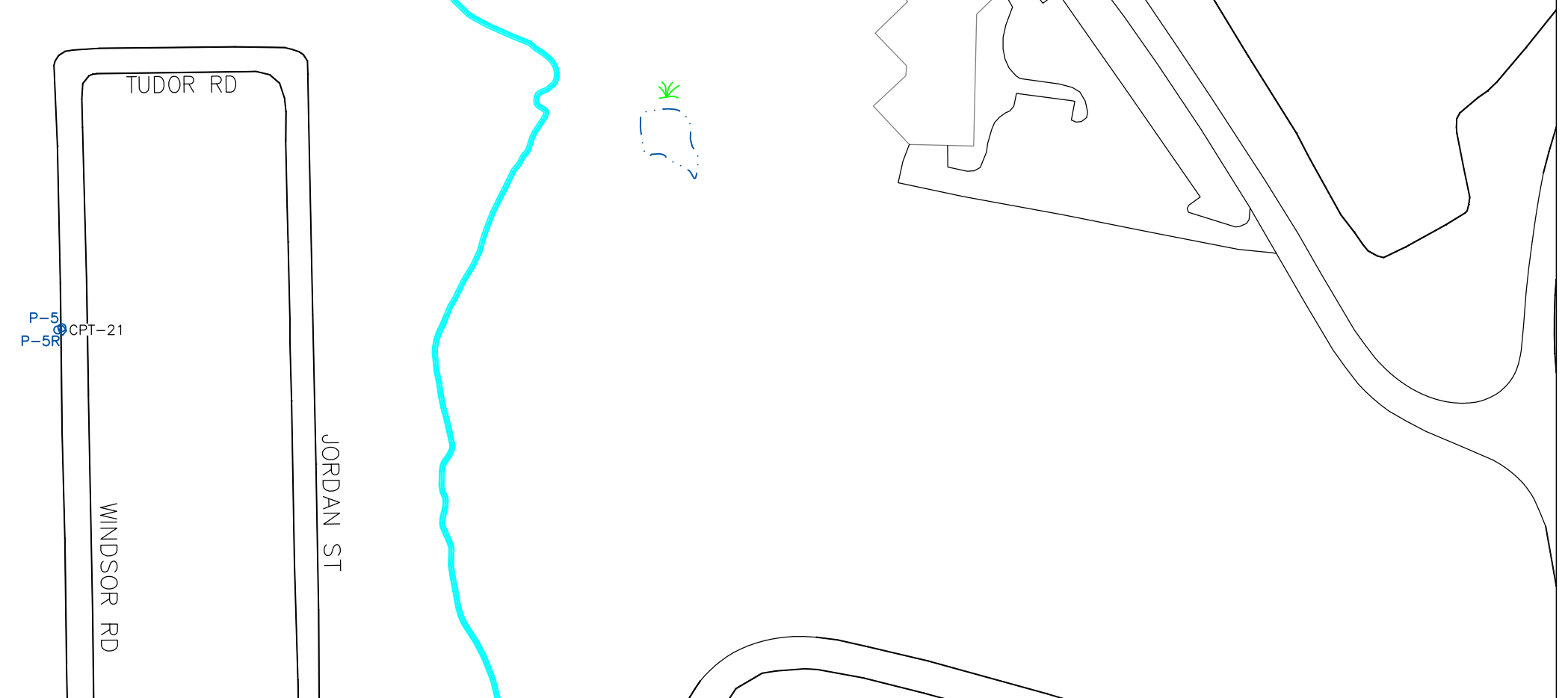
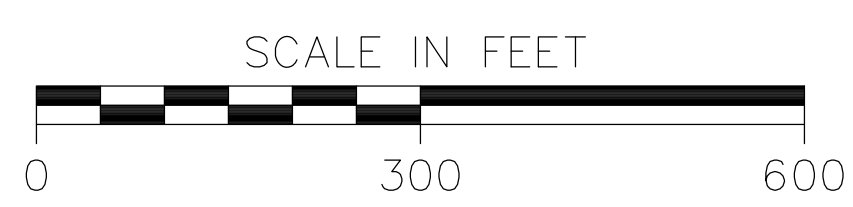
SAMPLE DATES 04/07/14 THROUGH 04/29/14

PAST AND CURRENT PERMANGANATE INJECTION WELLS SHOWN IN PURPLE

NOTE:  
 1) CONTOURS WERE DEVELOPED USING TOTAL VOC CONCENTRATION DETECTED AT EACH WELL. VOCs TOTALED INCLUDED THE FOLLOWING SITE-RELATED CHEMICALS: TRICHLOROETHENE, TETRACHLOROETHENE, 1,1,1-TRICHLOROETHANE, CIS-1,2-DICHLOROETHENE, TRANS-1,2-DICHLOROETHENE, 1,1-DICHLOROETHANE, 1,1-DICHLOROETHENE, 1,2-DICHLOROETHANE AND VINYL CHLORIDE.  
 2) DATA USED TO ESTIMATE VOC CONCENTRATIONS IN GROUNDWATER ARE FROM SAMPLE DATES NOTED ABOVE, WITH THE FOLLOWING EXCEPTIONS: - DATA FOR "CPT" POINTS WAS COLLECTED DURING SURVEYS CONDUCTED IN AUGUST-SEPTEMBER 1996 AND APRIL-MAY 1998. AT WELLS NOT SAMPLED IN APRIL 2011, DATA FROM THE MOST RECENT MONITORING WAS USED. RESULTS OF SURFACE WATER SAMPLES WERE NOT CONSIDERED IN ESTIMATING VOC DISTRIBUTION.

BECKROCK WELLS BR-1 THROUGH BR-8 AND CL9-BR HAVE MULTILEVEL GROUNDWATER MONITORING SYSTEMS PRESENT WITHIN THE BEDROCK. ZONE 1 REFERS TO THE DEEPEST SAMPLING ZONE, ZONE 2 REFERS TO THE MIDDLE SAMPLING INTERVAL, AND ZONE 3 CLOSEST TO THE GROUND SURFACE.

THIS MAP HAS BEEN COMPILED FROM SURVEY DATA COLLECTED IN JULY 1994, MARCH 1995, OCTOBER 1995, SEPTEMBER 1996, MARCH 1997, DECEMBER 1997, SEPTEMBER 1998, JANUARY 2000, FEBRUARY 2001, JUNE 2002, SEPTEMBER 2002, JULY 2003, FEBRUARY 2004, OCTOBER 2004, JULY 2012, MAY 2014, FROM VARIOUS EXISTING PLANS, AND OBSERVATIONS MADE IN THE FIELD BY CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.

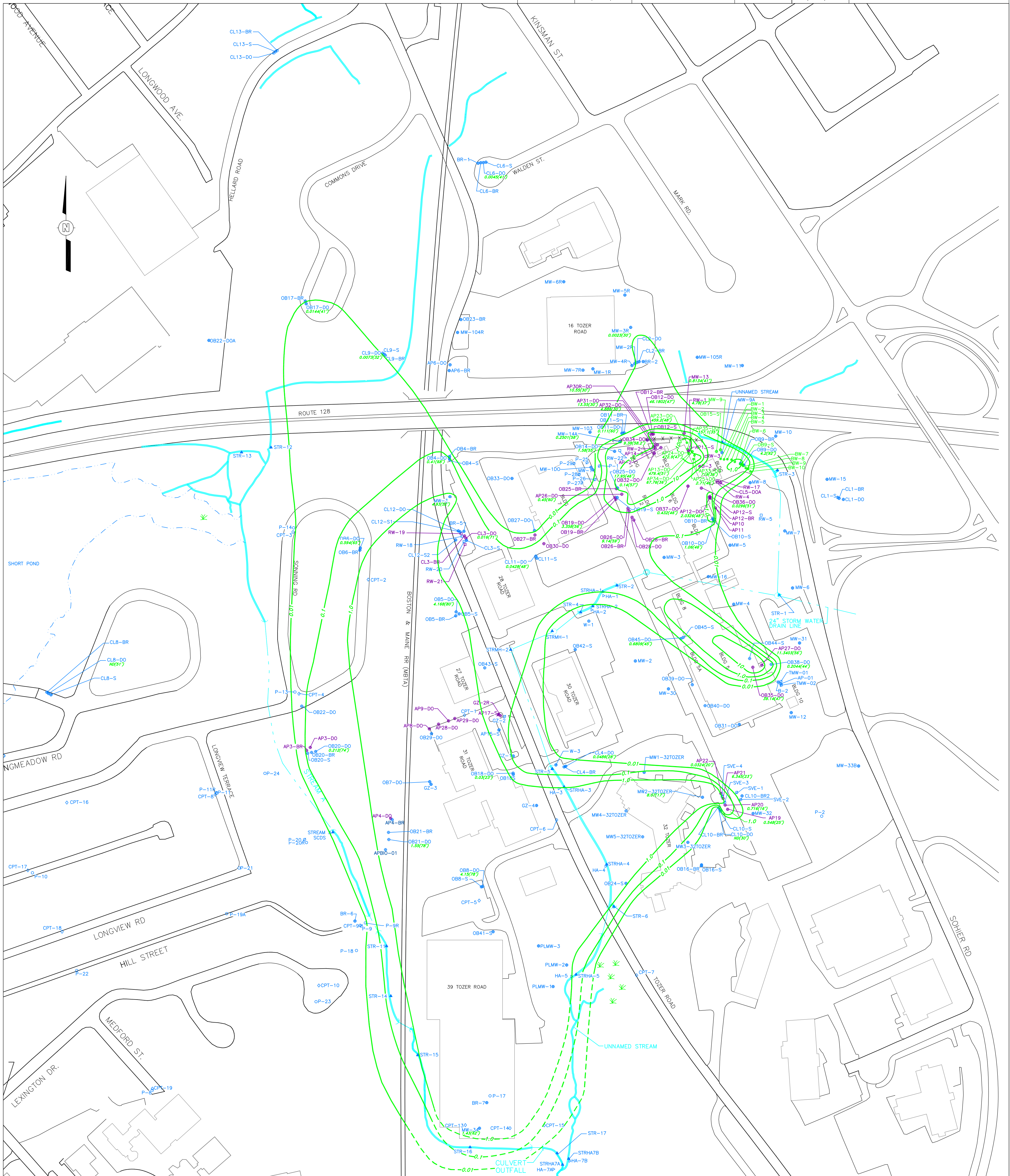


**FIGURE 8**  
 ESTIMATED DISTRIBUTION OF TOTAL VOC CONCENTRATIONS  
 IN SHALLOW OVERBURDEN AQUIFER

PREPARED FOR: VARIAN MEDICAL SYSTEMS, INC. PALO ALTO, CALIFORNIA	DRAFTED BY: CD
SCALE: 1" = 150'	PROJECT NO.: 146899
DATE: 06 OCTOBER 2014	
PREPARED BY:	
	CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.



DRAWN BY	CD	CHECKED BY	RC	10/06/14	DRAWING NAME	DO_VOC-APR14
	10/06/14		APPROVED BY	RC		10/06/14



**LEGEND:**

- TEMPORARY INJECTION POINT
- ABANDONED OR DESTROYED WELL
- PIEZOMETER (P)
- BENCHMARK LOCATION (MSL)
- RECOVERY WELL (RW)
- MONITORING WELL (MW)
- SURFACE WATER STREAM (STR) SAMPLE LOCATION
- CONE PENETROMETER TESTPOINT (CPT)
- HAND AUGER SAMPLE LOCATION (HA)
- ADJACENT TO A STREAM (STRHA)
- BIOREMEDIATION INJECTION WELLS
- INJECTION LOCATIONS SHOWN IN GREEN
- SHALLOW BIOREMEDIATION BARRIER WELL (BW)
- STRMH MANHOLE ACCESS TO THE STREAM LOCATED WITHIN A CULVERT
- APPROXIMATE BUILDING LOCATION
- APPROXIMATE DRAIN MANHOLE LOCATION
- APPROXIMATE LOCATION OF STREAM IN CULVERT
- APPROXIMATE STREAM LOCATION
- WATER AND MARSH AREA
- CLUSTER WELL NUMBER
- S=SHALLOW
- DO=DEEP OVERBURDEN
- BR=BEDROCK

**ND** NON DETECT

**1.0** TOTAL VOLATILE ORGANIC COMPOUND (VOC) ISOCONCENTRATION CONTOUR IN MILLIGRAMS PER LITER (mg/L)  
 THIS IS A GRAPHICAL REPRESENTATION OF TOTAL VOC CONCENTRATIONS

**---** DASHING INDICATES AN INFERRED CONTOUR

**CL4-DO** - WELL IDENTIFICATION  
**0.0486(28')** - TOTAL VOC CONCENTRATION (mg/L)  
 (SAMPLE DEPTH BELOW GRADE IN FEET)

**(NA)** - SAMPLE NOT COLLECTED AT DISCRETE DEPTH (E.G. GRAB SAMPLE COLLECTED FOLLOWING WELL PURGING IN LIEU OF PDB SAMPLER)

SAMPLE DATES 04/07/14 THROUGH 04/29/14

**PAST AND CURRENT PERMANGANATE INJECTION WELLS SHOWN IN PURPLE**

**NOTE:**  
 1) CONTOURS WERE DEVELOPED USING TOTAL VOC CONCENTRATION DETECTED AT EACH WELL. VOCs TOTALED INCLUDED THE FOLLOWING SITE-RELATED CHEMICALS: TRICHLOROETHENE, TETRACHLOROETHENE, 1,1,1-TRICHLOROETHANE, CIS-1,2-DICHLOROETHENE, TRANS-1,2-DICHLOROETHENE, 1,1-DICHLOROETHENE, 1,2-DICHLOROETHANE AND VINYL CHLORIDE.  
 2) DATA USED TO ESTIMATE VOC CONCENTRATIONS IN GROUNDWATER ARE FROM SAMPLE DATES NOTED ABOVE, WITH THE FOLLOWING EXCEPTIONS: - DATA FROM MW1-32TOZER, MW2-32TOZER, MW3-32TOZER WERE COLLECTED IN FEBRUARY 2011, DATA FOR "CPT" POINTS WAS COLLECTED DURING SURVEYS CONDUCTED IN AUGUST-SEPTEMBER 1996 AND APRIL-MAY 1998. AT WELLS NOT SAMPLED IN APRIL 2011, DATA FROM THE MOST RECENT MONITORING WAS USED.  
 BEDROCK WELLS BR-1 THROUGH BR-8 AND CL9-BR HAVE MULTILEVEL GROUNDWATER MONITORING SYSTEMS PRESENT WITHIN THE BEDROCK. ZONE 1 REFERS TO THE DEEPEST SAMPLING ZONE, ZONE 2 REFERS IS THE MIDDLE SAMPLING INTERVAL, AND ZONE 3 CLOSEST TO THE GROUND SURFACE.

THIS MAP HAS BEEN COMPILED FROM SURVEY DATA COLLECTED IN JULY 1994, MARCH 1995, OCTOBER 1995, SEPTEMBER 1996, MARCH 1997, DECEMBER 1997, SEPTEMBER 1998, JANUARY 2000, FEBRUARY 2001, JULY 2002, SEPTEMBER 2002, JULY 2003, FEBRUARY 2004, OCTOBER 2004, JULY 2012, MAY 2014, FROM VARIOUS EXISTING PLANS, AND OBSERVATIONS MADE IN THE FIELD BY CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.

**SCALE IN FEET**

**FIGURE 9**  
**ESTIMATED DISTRIBUTION OF TOTAL VOC CONCENTRATIONS IN DEEP OVERBURDEN AQUIFER**

PREPARED FOR: VARIAN MEDICAL SYSTEMS, INC.  
 PALO ALTO, CALIFORNIA

SCALE: 1" = 150'

DATE: 06 OCTOBER 2014

PREPARED BY:

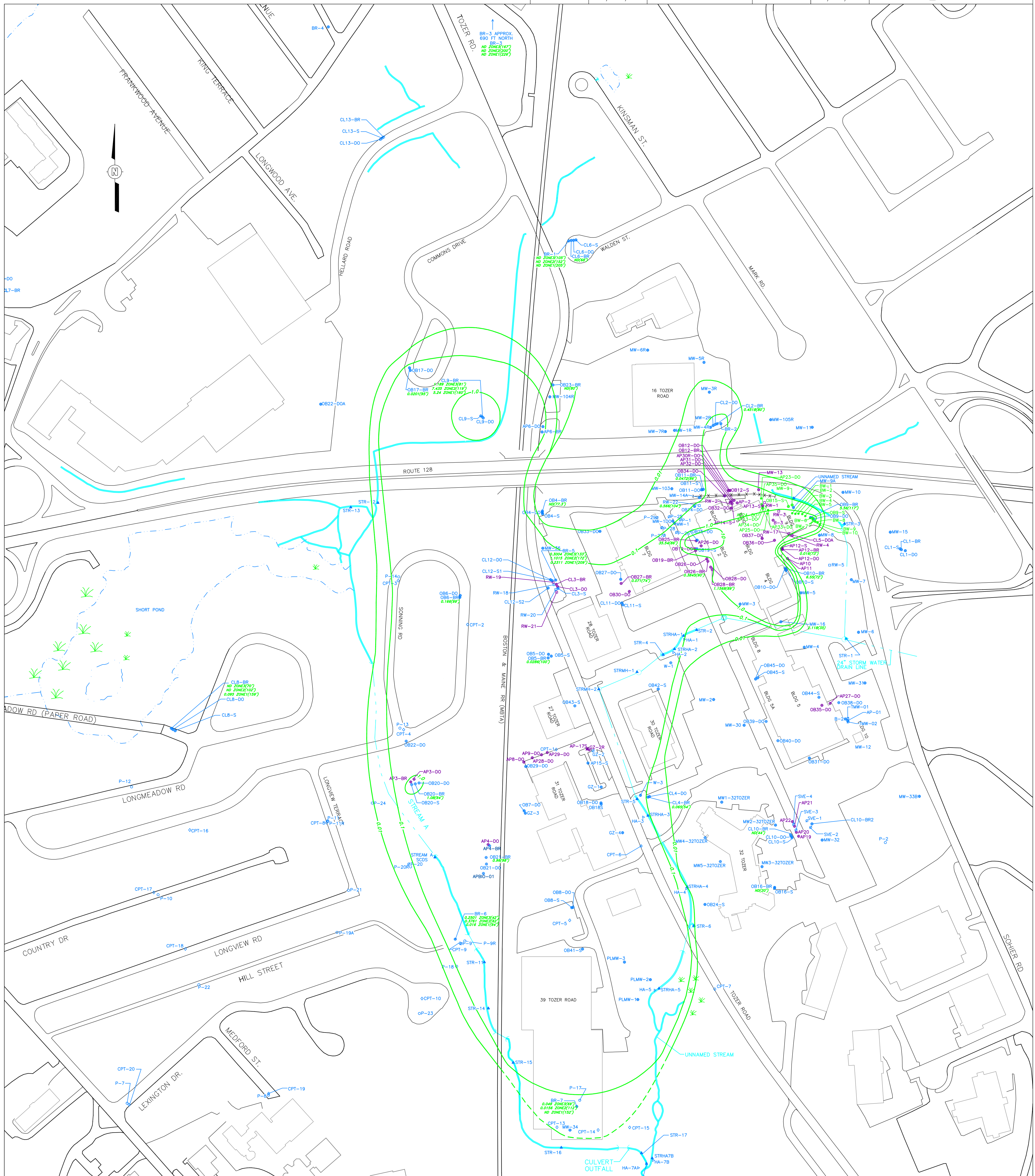
DRAFTED BY: CD

PROJECT NO.: 146899

CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.



DRAWN BY	CD	CHECKED BY	RC	10/06/14	DRAWING NAME:
	10/06/14	APPROVED BY	RC	10/06/14	BEDROCK_VOC-APR14



**LEGEND:**

- TEMPORARY INJECTION POINT
- ABANDONED OR DESTROYED WELL
- PIEZOMETER (P)
- BENCHMARK LOCATION (MSL)
- RECOVERY WELL (RW)
- MONITORING WELL (MW)
- SURFACE WATER STREAM (STR) SAMPLE LOCATION
- CONE PENETROMETER TESTPOINT (CPT)
- HAND AUGER SAMPLE LOCATION (HA)
- ADJACENT TO A STREAM (STRHA)
- BIOREMEDIATION INJECTION WELLS
- INJECTION LOCATIONS SHOWN IN GREEN
- SHALLOW BIOREMEDIATION BARRIER WELL (BW)
- STRMH MANHOLE ACCESS TO THE STREAM LOCATED WITHIN A CULVERT
- APPROXIMATE BUILDING LOCATION
- APPROXIMATE DRAIN MANHOLE LOCATION
- APPROXIMATE LOCATION OF STREAM IN CULVERT
- APPROXIMATE STREAM LOCATION
- WATER AND MARSH AREA
- CL-9 CLUSTER WELL NUMBER
- STR-6 STREAM SAMPLE LOCATION NUMBER
- STRHA-1 STREAM/SURFACE WATER SAMPLE
- HA-1 HAND AUGER WELL LOCATION NUMBER
- STRMH-1 STREAM/MANHOLE LOCATION NUMBER
- MW-5 MONITORING WELL NUMBER
- FLMW-1 MONITORING WELL NUMBER
- BR-1 BEDROCK WELL NUMBER

**ND** NON DETECT  
**1.0** TOTAL VOLATILE ORGANIC COMPOUND (VOC) ISOCONCENTRATION CONTOUR IN MILLIGRAMS PER LITER (mg/L)  
 THIS IS A GRAPHICAL REPRESENTATION OF TOTAL VOC CONCENTRATIONS  
 DASHING INDICATES AN INFERRED CONTOUR

**CL4-BR** - WELL IDENTIFICATION  
**0.065(54')** - TOTAL VOC CONCENTRATION (mg/L) (SAMPLE DEPTH BELOW GRADE IN FEET)  
**(NA)** - SAMPLE NOT COLLECTED AT DISCRETE DEPTH (E.G. GRAB SAMPLE COLLECTED FOLLOWING WELL PURGING IN LIEU OF PDB SAMPLER)

SAMPLE DATES 04/07/14 THROUGH 04/29/14  
**PAST AND CURRENT PERMANGANATE INJECTION WELLS SHOWN IN PURPLE**

**NOTE:**  
 1) CONTOURS WERE DEVELOPED USING TOTAL VOC CONCENTRATION DETECTED AT EACH WELL. VOCs TOTALED INCLUDED THE FOLLOWING SITE-RELATED CHEMICALS: TRICHLOROETHENE, TETRACHLOROETHENE, 1,1,1-TRICHLOROETHANE, CIS-1,2-DICHLOROETHENE, TRANS-1,2-DICHLOROETHENE, 1,1-DICHLOROETHANE, 1,1-DICHLOROETHENE, 1,2-DICHLOROETHANE AND VINYL CHLORIDE.  
 2) DATA USED TO ESTIMATE VOC CONCENTRATIONS IN GROUNDWATER ARE FROM SAMPLE DATES NOTED ABOVE, WITH THE FOLLOWING EXCEPTIONS: - DATA FOR "CPT" POINTS WAS COLLECTED DURING SURVEYS CONDUCTED IN AUGUST-SEPTEMBER 1996 AND APRIL-MAY 1998, AT WELLS NOT SAMPLED IN APRIL 2011, DATA FROM THE MOST RECENT MONITORING WAS USED.

BEDROCK WELLS BR-1 THROUGH BR-8 AND CL9-BR HAVE MULTILEVEL GROUNDWATER MONITORING SYSTEMS PRESENT WITHIN THE BEDROCK. ZONE 1 REFERS TO THE DEEPEST SAMPLING ZONE, ZONE 2 REFERS TO THE MIDDLE SAMPLING INTERVAL, AND ZONE 3 CLOSEST TO THE GROUND SURFACE.

THIS MAP HAS BEEN COMPILED FROM SURVEY DATA COLLECTED IN JULY 1994, MARCH 1995, OCTOBER 1995, SEPTEMBER 1996, MARCH 1997, DECEMBER 1997, SEPTEMBER 1998, JANUARY 2000, FEBRUARY 2001, JULY 2002, SEPTEMBER 2002, JULY 2003, FEBRUARY 2004, OCTOBER 2004, JULY 2012, FROM VARIOUS EXISTING PLANS, AND OBSERVATIONS MADE IN THE FIELD BY CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.

**SCALE IN FEET**  
 0 300 600

**FIGURE 10**  
**ESTIMATED DISTRIBUTION OF TOTAL VOC CONCENTRATIONS IN BEDROCK AQUIFER APRIL**

PREPARED FOR: VARIAN MEDICAL SYSTEMS, INC.  
 PALO ALTO, CALIFORNIA

SCALE: 1" = 150'

DATE: 6 OCTOBER 2014

PREPARED BY:

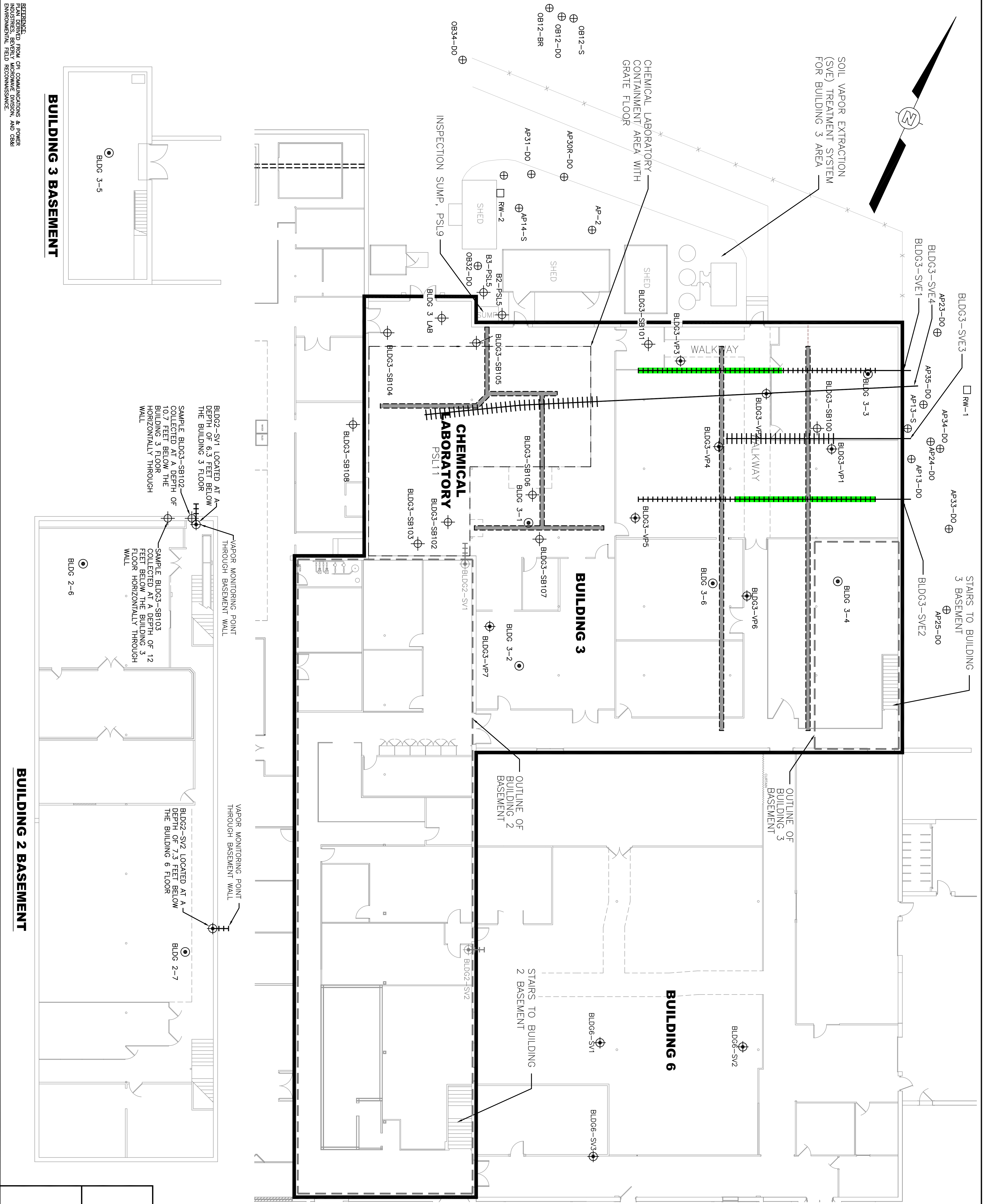
DRAFTED BY: CD

PROJECT NO.: 146899

CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.



OFFICE CANTON	DRAWN BY CD	CHECKED BY PH	APPROVED BY -	DRAWING NUMBER 150148-D2
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**BUILDING 3 BASEMENT**

REFERENCE:  
 PLAN DERIVED FROM CPI COMMUNICATIONS & POWER  
 ENVIRONMENTAL FIELD RECONNAISSANCE

BLDG2-SV1 LOCATED AT A DEPTH OF 6.3 FEET BELOW THE BUILDING 3 FLOOR COLLECTED AT A DEPTH OF 10.7 FEET BELOW THE BUILDING 3 FLOOR HORIZONTALLY THROUGH WALL

VAPOR MONITORING POINT THROUGH BASEMENT WALL

SAMPLE BLDG3-SB102

BLDG3-SB104

BLDG3-SB108

BLDG3-SB103

BLDG3-SB106

BLDG3-SB107

BLDG3-SB105

BLDG3-SB102

BLDG3-SB103

BLDG3-SB104

BLDG3-SB105

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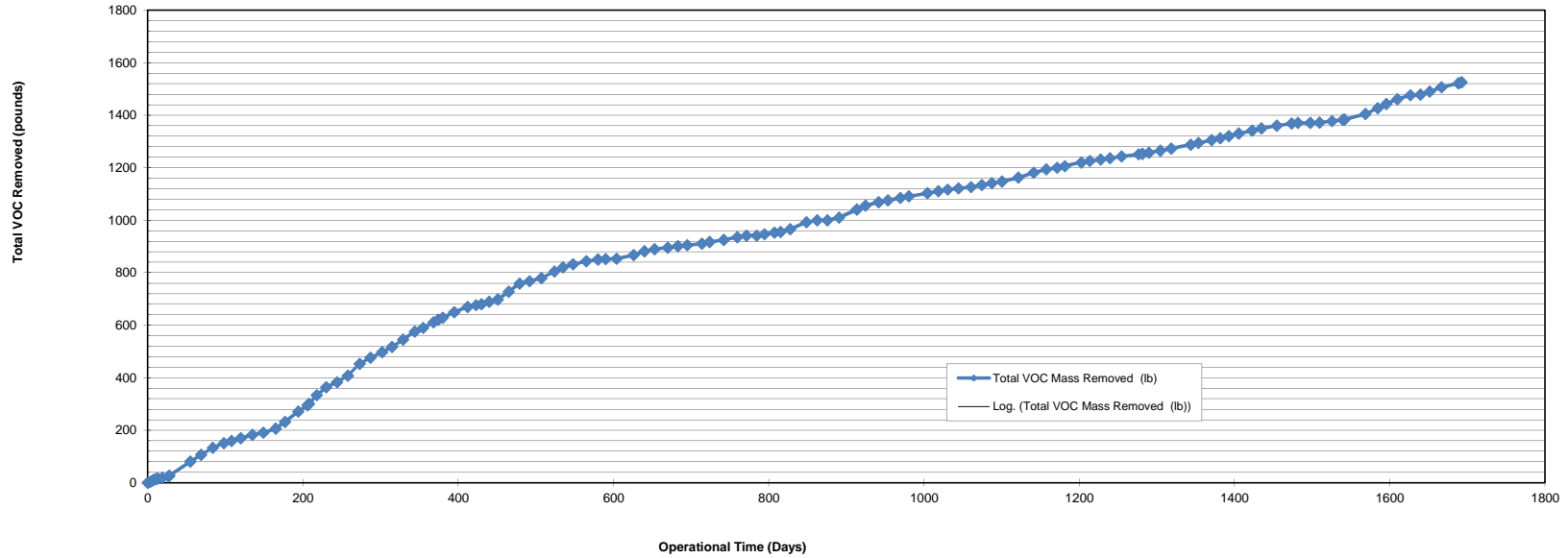
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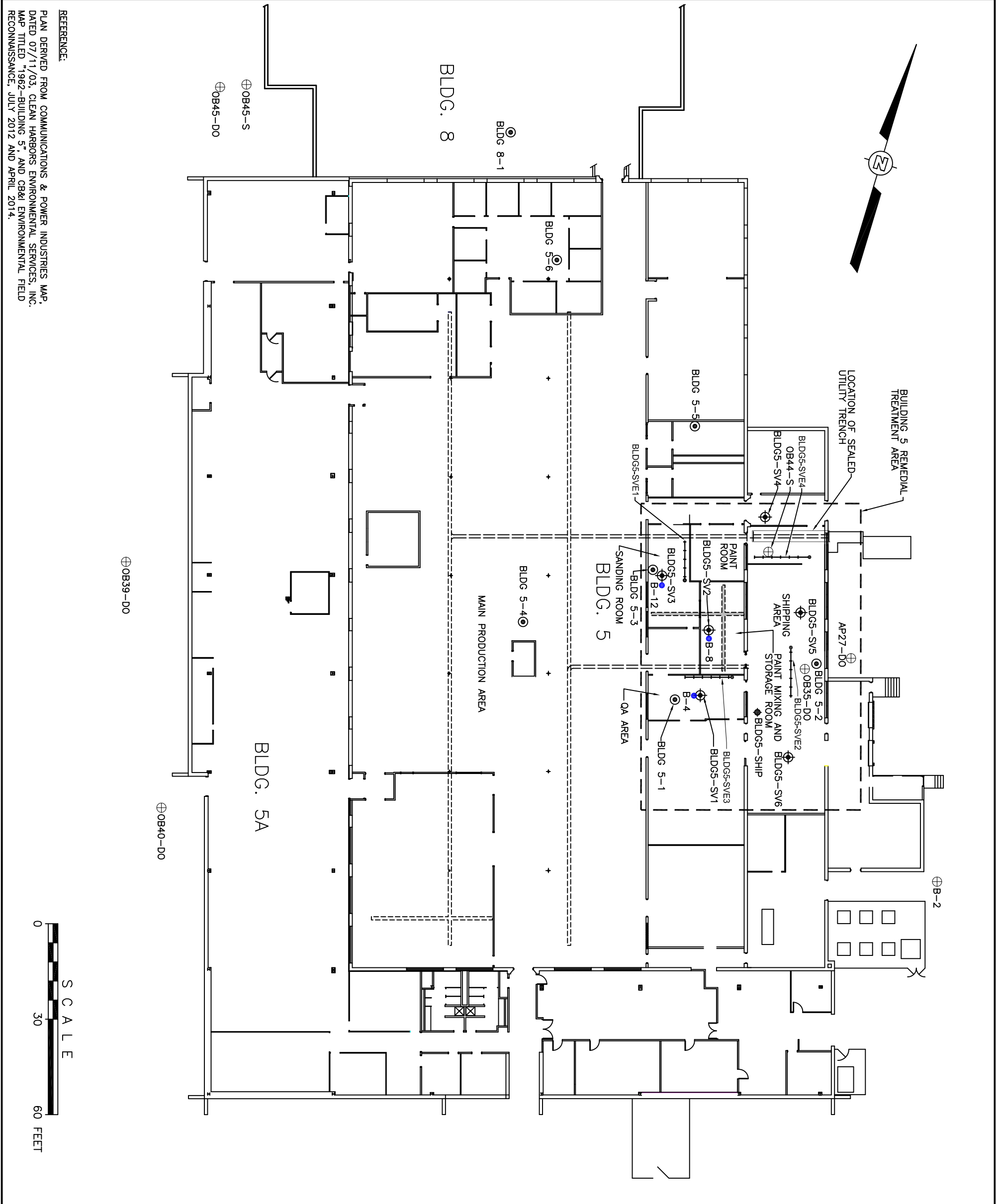


**Figure 13**  
**VOC Mass Removal Estimate**  
**Building 3 Sub-Slab SVE System**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**





OFFICE CANTON, MA	DRAWN BY CD	CHECKED BY PH	APPROVED BY --	DRAWING NUMBER 146898-SITE PLAN
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REFERENCE:  
 PLAN DERIVED FROM COMMUNICATIONS & POWER INDUSTRIES MAP,  
 DATED 07/11/03, CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.  
 MAP TITLED "1962-BUILDING 5", AND CB&I ENVIRONMENTAL FIELD  
 RECONNAISSANCE, JULY 2012 AND APRIL 2014.

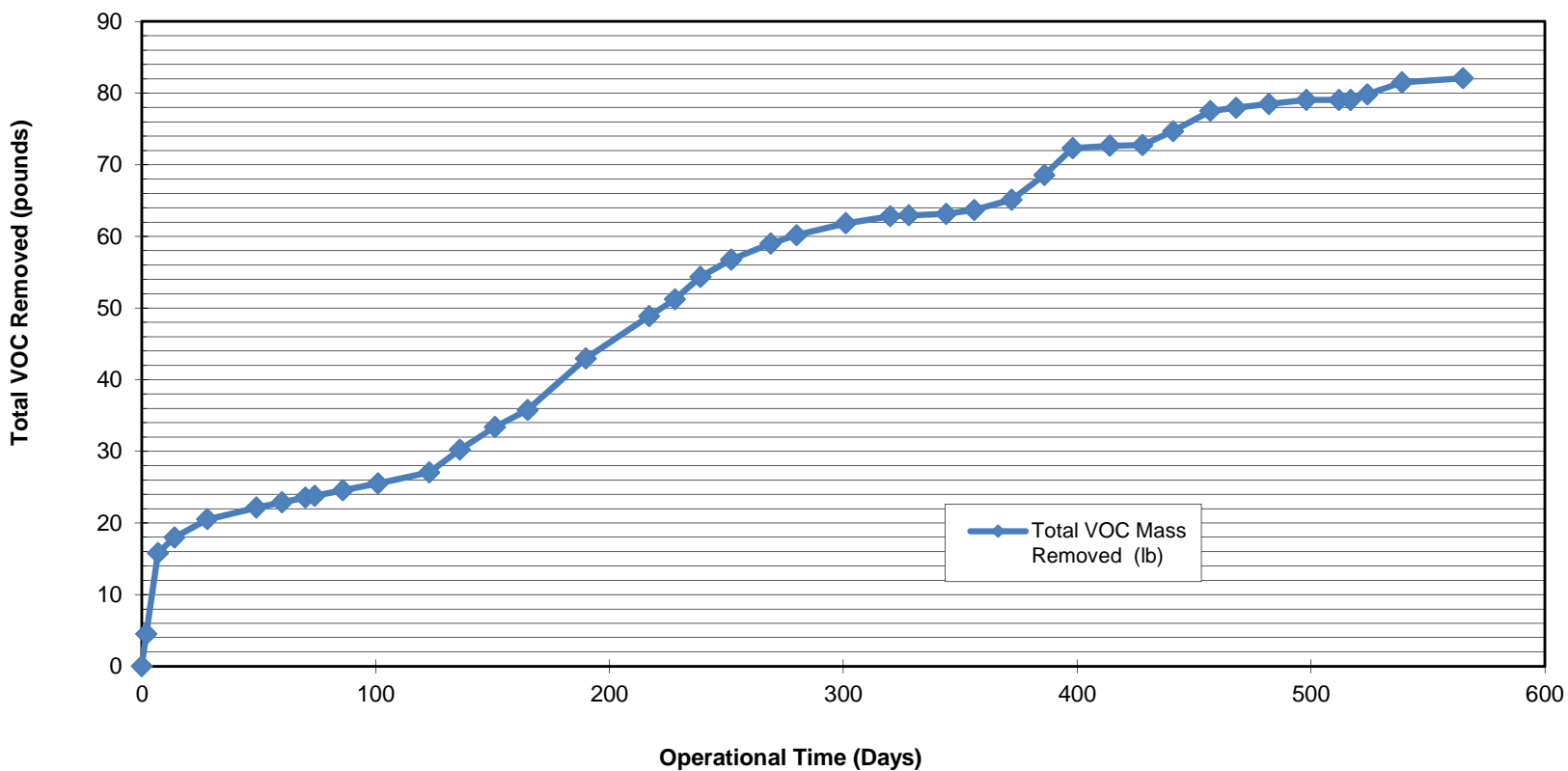
**LEGEND**

⊕	SUB-SLAB SOIL VAPOR SAMPLE LOCATION (2011-2014)
⊙	INDOOR AIR SAMPLE LOCATION (2011-2014)
●	SUB-SLAB SOIL VAPOR SAMPLE LOCATION (1995)
⊕	MONITORING WELL
◆	SOIL BORING
-----	FORMER UTILITY TRENCH FILLED WITH CONCRETE
-----	UTILITY TRENCH
-----	SYVE TRENCH WELL INSTALLED JULY/AUGUST 2012
INDOOR AIR SAMPLE ID	ROOM
RIN_3-0485	QA AREA
BLDG 5-1	SHIPPING AREA
BLDG 5-2	SANDING ROOM
BLDG 5-3	PRODUCTION AREA
BLDG 5-4	CATHODE SPRAY ROOM
BLDG 5-5	COMMON OFFICE AREA
BLDG 5-6	HIGH POWER TESTING BUILDING 8 BASEMENT

**CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.**  
 150 ROYALL STREET  
 CANTON, MASSACHUSETTS  
 (617) 589-5111

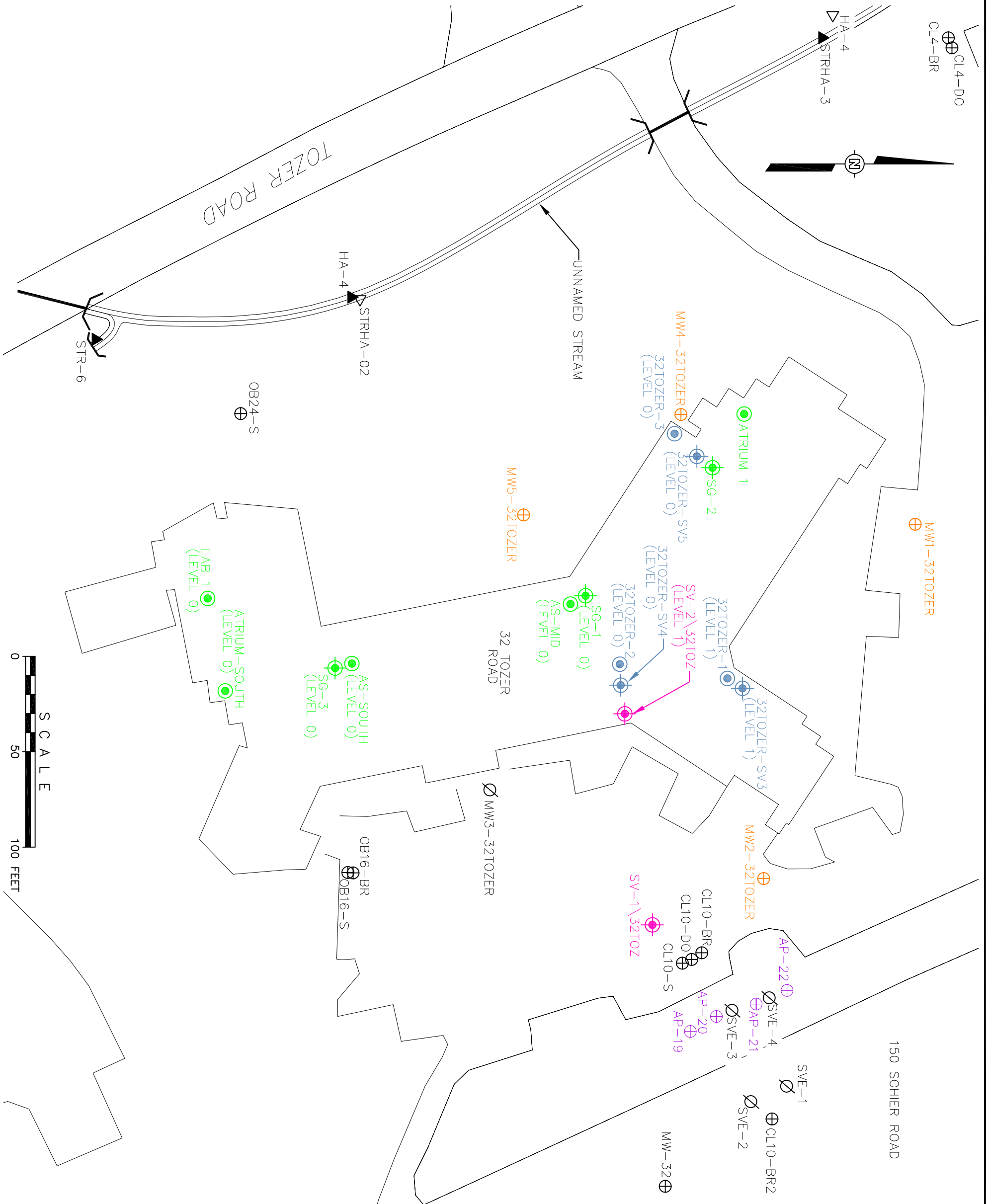
**FIGURE 14**  
**BUILDING 5 REMEDIAL TREATMENT AREA**  
 FORMER VARIAN FACILITY  
 150 SCHIER ROAD  
 BEVERLY, MASSACHUSETTS

**Figure 15**  
**VOC Mass Removal Estimate**  
**Building 5 Sub-Slab SVE System**  
**Former Varian Facility Site**  
**150 Sohier Road**  
**Beverly, Massachusetts**



OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
CANTON, MA	CD	05/22/14	RC	05/22/14

32TOZERROAD



**LEGEND**

- SOIL VAPOR SAMPLE LOCATION (SHAW 2013)
- SOIL VAPOR SAMPLE LOCATION (SHAW 2006)
- INDOOR AIR SAMPLE LOCATION (SHAW 2013)
- MONITORING WELL
- MONITORING WELLS INSTALLED BY IRWIN
- SOIL VAPOR SAMPLE LOCATION (IRWIN MARCH 2011)
- INDOOR AIR SAMPLE LOCATION (IRWIN MARCH 2011)
- MONITORING WELL INJECTED WITH PERMANGANATE
- ABANDONED OR DESTROYED WELL
- SURFACE WATER STREAM SAMPLE LOCATION (STR)
- HAND AUGER SAMPLE (HA) ADJACENT TO A STREAM (STRHA)
- STREAM CULVERT

NOTES: LOCATIONS ARE APPROXIMATE  
 LEVEL 1 = MIDDLE FLOOR OF BUILDING  
 LEVEL 0 = BOTTOM FLOOR OF BUILDING

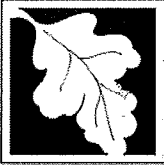


CB&I ENVIRONMENTAL &  
 INFRASTRUCTURE, INC.  
 150 ROYAL STREET  
 CANTON, MASSACHUSETTS  
 (617) 589-5111

FIGURE 16  
 SITE PLAN  
 32 TOZER ROAD  
 BEVERLY, MASSACHUSETTS

**APPENDIX A**

**MADEP COMPREHENSIVE RESPONSE ACTION  
TRANSMITTAL FORM (BWSC108) AND  
REMEDIAL MONITORING REPORT (RMR) CHECKLIST**



Massachusetts Department of Environmental Protection

## **eDEP Transaction Copy**

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To retain a copy of this file you must save and/or print.

Username: **KPERNILLA**

Transaction ID: **692716**

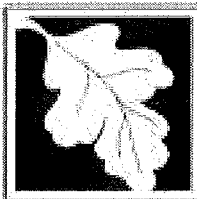
Document: **BWSC108 Comp. Res. Action Transmittal Form & Phase I**

Size of File: **932.75K**

Status of Transaction: **In Process**

Date and Time Created: **11/10/2014:11:42:15 AM**

**Note:** This file only includes forms that were part of your transaction as of the date and time indicated above. If you need a more current copy of your transaction, return to eDEP and select to "Download a Copy" from the Current Submittals page.



**COMPREHENSIVE RESPONSE ACTION TRANSMITTAL  
FORM & PHASE I COMPLETION STATEMENT**

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number

3 - 485

**A. SITE LOCATION:**

1. Site Name: VARIAN-MICROWAVE DIV

2. Street Address: 150 SOHIER RD

3. City/Town: BEVERLY 4. ZIP Code: 019150000

5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category:

- a. Tier I       b. Tier ID       c. Tier II

**B. THIS FORM IS BEING USED TO:** (check all that apply)

- 1. Submit a **Phase I Completion Statement**, pursuant to 310 CMR 40.0484.
- 2. Submit a **Revised Phase I Completion Statement**, pursuant to 310 CMR 40.0484.
- 3. Submit a **Phase II Scope of Work**, pursuant to 310 CMR 40.0834.
- 4. Submit an **interim Phase II Report**. This report does not satisfy the response action deadline requirements in 310 CMR 40.0500.
- 5. Submit a **final Phase II Report and Completion Statement**, pursuant to 310 CMR 40.0836.
- 6. Submit a **Revised Phase II Report and Completion Statement**, pursuant to 310 CMR 40.0836.
- 7. Submit a **Phase III Remedial Action Plan and Completion Statement**, pursuant to 310 CMR 40.0862.
- 8. Submit a **Revised Phase III Remedial Action Plan and Completion Statement**, pursuant to 310 CMR 40.0862.
- 9. Submit a **Phase IV Remedy Implementation Plan**, pursuant to 310 CMR 40.0874.
- 10. Submit a **Modified Phase IV Remedy Implementation Plan**, pursuant to 310 CMR 40.0874.
- 11. Submit an **As-Built Construction Report**, pursuant to 310 CMR 40.0875.
- 12. Submit a **Phase IV Status Report**, pursuant to 310 CMR 40.0877.
- 13. Submit a **Phase IV Completion Statement**, pursuant to 310 CMR 40.0878 and 40.0879.

Specify the outcome of Phase IV activities: (check one)

- a. Phase V Operation, Maintenance or Monitoring of the Comprehensive Remedial Action is necessary to achieve a Permanent or Temporary Solution.
- b. The requirements of a Permanent Solution have been met. A completed Permanent Solution Statement and Report (BWSC104) will be submitted to DEP.
- c. The requirements of a Temporary Solution have been met. A completed Temporary Solution Statement and Report (BWSC104) will be submitted to DEP.



**COMPREHENSIVE RESPONSE ACTION TRANSMITTAL  
FORM & PHASE I COMPLETION STATEMENT**

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number

3 - 485

**B. THIS FORM IS BEING USED TO (cont.):** (check all that apply)

14. Submit a **Revised Phase IV Completion Statement**, pursuant to 310 CMR 40.0878 and 40.0879.
15. Submit a **Phase V Status Report**, pursuant to 310 CMR 40.0892.
16. Submit a **Remedial Monitoring Report**. (This report can only be submitted through eDEP.)
- a. Type of Report: (check one)       i. Initial Report       ii. Interim Report       iii. Final Report
- b. Frequency of Submittal: (check all that apply)
- i. A Remedial Monitoring Report(s) submitted monthly to address an Imminent Hazard.
- ii. A Remedial Monitoring Report(s) submitted monthly to address a Condition of Substantial Release Migration.
- iii. A Remedial Monitoring Report(s) submitted every six months, concurrent with a Status Report.
- iv. A Remedial Monitoring Report(s) submitted annually, concurrent with a Status Report.
- c. Status of Site: (check one)       i. Phase IV       ii. Phase V       iii. Remedy Operation Status       iv. Temporary Solution
- d. Number of Remedial Systems and/or Monitoring Programs:      3
- A separate BWSC108A, CRA Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.
17. Submit a **Remedy Operation Status**, pursuant to 310 CMR 40.0893.
18. Submit a **Status Report to maintain a Remedy Operation Status**, pursuant to 310 CMR 40.0893(2).
19. Submit a **Transfer and/or a Modification of Persons Maintaining a Remedy Operation Status (ROS)**, pursuant to 310 CMR 40.0893(5) (check one, or both, if applicable).
- a. Submit a Transfer of Persons Maintaining an ROS (the transferee should be the person listed in Section D, "Person Undertaking Response Actions").
- b. Submit a Modification of Persons Maintaining an ROS (the primary representative should be the person listed in Section D, "Person Undertaking Response Actions").
- c. Number of Persons Maintaining an ROS not including the primary representative: \_\_\_\_\_
20. Submit a **Termination of a Remedy Operation Status**, pursuant to 310 CMR 40.0893(6).(check one)
- a. Submit a notice indicating ROS performance standards have not been met. A plan and timetable pursuant to 310 CMR 40.0893(6) (b) for resuming the ROS are attached.
- b. Submit a notice of Termination of ROS.
21. Submit a **Phase V Completion Statement**, pursuant to 310 CMR 40.0894.
- Specify the outcome of Phase V activities: (check one)
- a. The requirements of a Permanent Solution have been met. A completed Permanent Solution Statement and Report (BWSC104) will be submitted to DEP.
- b. The requirements for a Temporary Solution have been met. A completed Temporary Solution Statement and Report (BWSC104) will be submitted to DEP.
22. Submit a **Revised Phase V Completion Statement**, pursuant to 310 CMR 40.0894.
23. Submit a **Temporary Solution Status Report**, pursuant to 310 CMR 40.0898.
24. Submit a **Plan for the Application of Remedial Additives** near a sensitive receptor, pursuant to 310 CMR 40.0046(3).
- a. Status of Site: (check one)
- i. Phase IV       ii. Phase V       iii. Remedy Operation Status       iv. Temporary Solution



**COMPREHENSIVE RESPONSE ACTION TRANSMITTAL  
FORM & PHASE I COMPLETION STATEMENT**

Release Tracking Number

3 - 485

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

**C. LSP SIGNATURE AND STAMP:**

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

> if Section B indicates that a **Phase I, Phase II, Phase III, Phase IV or Phase V Completion Statement and/or a Termination of a Remedy Operation Status** is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> if Section B indicates that a **Phase II Scope of Work or a Phase IV Remedy Implementation Plan** is being submitted, the response action (s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

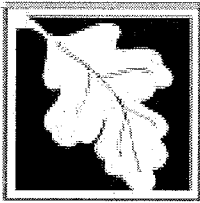
> if Section B indicates that an **As-Built Construction Report, a Remedy Operation Status, a Phase IV, Phase V or Temporary Solution Status Report, a Status Report to Maintain a Remedy Operation Status, a Transfer or Modification of Persons Maintaining a Remedy Operation Status and/or a Remedial Monitoring Report** is being submitted, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

- 1. LSP#: 9070
- 2. First Name: TIMOTHY W
- 3. Last Name: KEMPER
- 4. Telephone: 617-515-3004
- 5. Ext:
- 6. Email:
- 7. Signature: TIMOTHY WKEMPER
- 8. Date: 11/10/2014  
(mm/dd/yyyy)
- 9. LSP Stamp:







**COMPREHENSIVE RESPONSE ACTION TRANSMITTAL  
FORM & PHASE I COMPLETION STATEMENT**

Release Tracking Number

3 - 485

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

**D. PERSON UNDERTAKING RESPONSE ACTIONS:**

1. Check all that apply:  a. change in contact name  b. change of address  c. change in the person undertaking response actions

2. Name of Organization: VARIAN MEDICAL SYSTEMS INC

3. Contact First Name: JOHN R 4. Last Name: BUCHANAN

5. Street: 3120 HANSEN WAY M/S G-100 6. Title: ENVIRONMENTAL AFFAIRS MANAGER

7. City/Town: PALO ALTO 8. State: CA 9. ZIP Code: 943041030

10. Telephone: 650-424-6103 11. Ext: \_\_\_\_\_ 12. Email: john.buchanan@varian.com

**E. RELATIONSHIP TO SITE OF PERSON UNDERTAKING RESPONSE ACTIONS:**  Check here to change relationship

1. RP or PRP  a. Owner  b. Operator  c. Generator  d. Transporter

e. Other RP or PRP Specify: OTHER PRPS

2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

4. Any Other Person Undertaking Response Actions Specify Relationship: \_\_\_\_\_

**F. REQUIRED ATTACHMENT AND SUBMITTALS:**

1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

2. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the submittal of any Phase Reports to DEP.

3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the availability of a Phase III Remedial Action Plan.

4. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the availability of a Phase IV Remedy Implementation Plan.

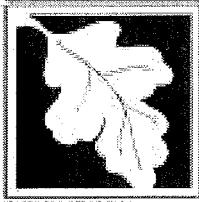
5. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of any field work involving the implementation of a Phase IV Remedial Action.

6. If submitting a Transfer of a Remedy Operation Status (as per 310 CMR 40.0893(5)), check here to certify that a statement detailing the compliance history for the person making this submittal (transferee) is attached.

7. If submitting a Modification of a Remedy Operation Status (as per 310 CMR 40.0893(5)), check here to certify that a statement detailing the compliance history for each new person making this submittal is attached.

8. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to: BWSC.eDEP@state.ma.us.

9. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.



**COMPREHENSIVE RESPONSE ACTION TRANSMITTAL  
FORM & PHASE I COMPLETION STATEMENT**

Release Tracking Number

3 - 485

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

**G. CERTIFICATION OF PERSON UNDERTAKING RESPONSE ACTIONS:**

I, JOHN R BUCHANAN, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

>if Section B indicates that this is a **Modification of a Remedy Operation Status (ROS)**, I attest under the pains and penalties of perjury that I am fully authorized to act on behalf of all persons performing response actions under the ROS as stated in 310 CMR 40.0893(5)(d) to receive oral and written correspondence from MassDEP with respect to performance of response actions under the ROS, and to receive a statement of fee amount as per 4.03(3).

I understand that any material received by the Primary Representative from MassDEP shall be deemed received by all the persons performing response actions under the ROS, and I am aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate or incomplete information.

2. By: JOHN R BUCHANAN 3. Title: ENVIRONMENTAL AFFAIRS MANAGER  
Signature

4. For: VARIAN MEDICAL SYSTEMS INC 5. Date: 11/10/2014  
(Name of person or entity recorded in Section D) (mm/dd/yyyy)

6. Check here if the address of the person providing certification is different from address recorded in Section D.

7. Street: \_\_\_\_\_

8. City/Town: \_\_\_\_\_ 9. State: \_\_\_\_\_ 10. ZIP Code: \_\_\_\_\_

11. Telephone: \_\_\_\_\_ 12. Ext.: \_\_\_\_\_ 13. Email: \_\_\_\_\_

**YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO \$10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.**

Date Stamp (DEP USE ONLY:)

Received by DEP on 11/10/2014 11:25:49 AM



Bureau of Waste Site Cleanup

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number

Remedial System or Monitoring Program: 1 of 3

3 - 485

A. DESCRIPTION OF ACTIVE OPERATION AND MAINTENANCE ACTIVITY:

1. Type of Active Operation and Maintenance Activity: (check all that apply)

[ ] a. Active Remedial System: (check all that apply)

[ ] i. NAPL Recovery

[ ] ii. Soil Vapor Extraction/Bioventing

[ ] iii. Vapor-phase Carbon Adsorption

[ ] iv. Groundwater Recovery

[ ] v. Dual/Multi-phase Extraction

[ ] vi. Aqueous-phase Carbon Adsorption

[ ] vii. Air Stripping

[ ] viii. Sparging/Biosparging

[ ] ix. Cat/Thermal Oxidation

[ ] x. Other Describe: \_\_\_\_\_

[ ] b. Active Exposure Pathway Elimination Measure

Active Exposure Pathway Mitigation System to address (check one): [ ] i. Indoor Air [ ] ii. Drinking Water

[x] c. Application of Remedial Additives: (check all that apply)

[ ] i. To the Subsurface

[x] ii. To Groundwater (Injection)

[ ] iii. To the Surface

[ ] d. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section G5)

[ ] i. Reactive Wall

[ ] ii. Natural Attenuation

[ ] iii. Other Describe: \_\_\_\_\_

2. Mode of Operation: (check one)

[ ] a. Continuous

[x] b. Intermittent

[ ] c. Pulsed

[ ] d. One-time Event Only

[ ] e. Other: \_\_\_\_\_

3. System Effluent/Discharge: (check all that apply)

[ ] a. Sanitary Sewer/POTW

[ ] b. Groundwater Re-infiltration/Re-injection: (check one)

[ ] i. Downgradient

[ ] ii. Upgradient

[ ] c. Vapor-phase Discharge to Ambient Air: (check one)

[ ] i. Off-gas Controls

[ ] ii. No Off-gas Controls

[ ] d. Drinking Water Supply

[ ] e. Surface Water (including Storm Drains)

[x] f. Other Describe: NA

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal:

From: 4/1/2014

To: 9/30/2014

(mm/dd/yyyy)

(mm/dd/yyyy)

2. Number of monitoring events during the reporting period: (check one)

[ ] a. System Startup: (if applicable)

[ ] i. Days 1, 3, 6, and then weekly thereafter, for the first month.

[ ] ii. Other Describe: \_\_\_\_\_

[x] b. Post-system Startup (after first month) or Monitoring Program:

[ ] i. Monthly

[ ] ii. Quarterly

[ ] iii. Annually

[x] iv. Other Describe: MONTHLY

[x] 3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

[ ] 1. NPDES: (check one)

[ ] a. Remediation General Permit

[ ] b. Individual Permit

[ ] c. Emergency Exclusion

Effective Date of Permit: \_\_\_\_\_

(mm/dd/yyyy)

[ ] 2. MCP Performance Standard MCP Citations(s): \_\_\_\_\_

[ ] 3. DEP Approval Letter Date of Letter: \_\_\_\_\_

(mm/dd/yyyy)

[ ] 4. Other Describe: \_\_\_\_\_



D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

- 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days. a. Name: b. Grade: c. License No: d. License Exp. Date: (mm/dd/yyyy)

- 2. Not Required
3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (check all that apply)

- 1. The Active Remedial System was functional one or more days during the Reporting Period. a. Days System was Fully Functional: b. GW Recovered (gals): c. NAPL Recovered (gals): d. GW Discharged (gals): e. Avg. Soil Gas Recovery Rate (scfm): f. Avg. Sparging Rate (scfm):

2. Remedial Additives: (check all that apply)

- a. No Remedial Additives applied during the Reporting Period.
b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)

i. Nitrogen/Phosphorus:

Table with 4 columns: Name of Additive, Date, Quantity, Units. Contains 3 empty rows.

ii. Peroxides:

Table with 4 columns: Name of Additive, Date, Quantity, Units. Contains 3 empty rows.

iii. Microorganisms:

Table with 4 columns: Name of Additive, Date, Quantity, Units. Contains 3 empty rows.

iv. Other:

Table with 4 columns: Name of Additive, Date, Quantity, Units. Contains 3 empty rows.

c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

i. Permanganates:

Table with 4 columns: Name of Additive, Date, Quantity, Units. Row 1: SODIUM PERMANGA, 9/10/2014, 1272.25, GALL.

ii. Peroxides:

Table with 4 columns: Name of Additive, Date, Quantity, Units. Contains 3 empty rows.

iii. Persulfates:

Table with 4 columns: Name of Additive, Date, Quantity, Units. Contains 3 empty rows.

iv. Other:

Table with 4 columns: Name of Additive, Date, Quantity, Units. Contains 3 empty rows.



Massachusetts Department of Environmental Protection

Bureau of Waste Site Cleanup

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Remedial System or Monitoring Program: 1 of 3

BWSC108 -A

Release Tracking Number

3 - 485

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.)

d. Other additives applied: (total quantity applied at the site for the current reporting period)

Table with 4 columns: Name of Additive, Date, Quantity, Units

Table with 4 columns: Name of Additive, Date, Quantity, Units

e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)

1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: b. Total Number of Days of Unscheduled Shutdowns:

c. Reason(s) for Unscheduled Shutdowns:

2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: b. Total Number of Days of Scheduled Shutdowns:

c. Reason(s) for Scheduled Shutdowns:

3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a. Date of Final System or Monitoring Program Shutdown: (mm/dd/yyyy)

b. No Further Effluent Discharges.

c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

d. No Further Submittals Planned.

e. Other: Describe:

G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)

1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

Empty box for Operational Problems or Notes

5. Check here if additional/supporting information, data, maps, and/or sketches are attached to the form.



Bureau of Waste Site Cleanup

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number

Remedial System or Monitoring Program: 2 of 3

3 - 485

A. DESCRIPTION OF ACTIVE OPERATION AND MAINTENANCE ACTIVITY:

1. Type of Active Operation and Maintenance Activity: (check all that apply)

[x] a. Active Remedial System: (check all that apply)

[ ] i. NAPL Recovery

[ ] ii. Soil Vapor Extraction/Bioventing

[ ] iii. Vapor-phase Carbon Adsorption

[ ] iv. Groundwater Recovery

[ ] v. Dual/Multi-phase Extraction

[ ] vi. Aqueous-phase Carbon Adsorption

[ ] vii. Air Stripping

[ ] viii. Sparging/Biosparging

[ ] ix. Cat/Thermal Oxidation

[x] x. Other Describe: BLDG 3 SUB-SLAB SVE SYSTEM

[ ] b. Active Exposure Pathway Elimination Measure

Active Exposure Pathway Mitigation System to address (check one): [ ] i. Indoor Air [ ] ii. Drinking Water

[ ] c. Application of Remedial Additives: (check all that apply)

[ ] i. To the Subsurface

[ ] ii. To Groundwater (Injection)

[ ] iii. To the Surface

[ ] d. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section G5)

[ ] i. Reactive Wall [ ] ii. Natural Attenuation [ ] iii. Other Describe:

2. Mode of Operation: (check one)

[x] a. Continuous [ ] b. Intermittent [ ] c. Pulsed [ ] d. One-time Event Only [ ] e. Other:

3. System Effluent/Discharge: (check all that apply)

[ ] a. Sanitary Sewer/POTW

[ ] b. Groundwater Re-infiltration/Re-injection: (check one) [ ] i. Downgradient [ ] ii. Upgradient

[x] c. Vapor-phase Discharge to Ambient Air: (check one) [x] i. Off-gas Controls [ ] ii. No Off-gas Controls

[ ] d. Drinking Water Supply

[ ] e. Surface Water (including Storm Drains)

[ ] f. Other Describe:

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal: From: 4/1/2014 To: 9/30/2014 (mm/dd/yyyy) (mm/dd/yyyy)

2. Number of monitoring events during the reporting period: (check one)

[ ] a. System Startup: (if applicable)

[ ] i. Days 1, 3, 6, and then weekly thereafter, for the first month.

[ ] ii. Other Describe:

[x] b. Post-system Startup (after first month) or Monitoring Program:

[ ] i. Monthly

[ ] ii. Quarterly

[ ] iii. Annually

[x] iv. Other Describe: BI-WEEKLY

[x] 3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

[ ] 1. NPDES: (check one)

[ ] a. Remediation General Permit

[ ] b. Individual Permit

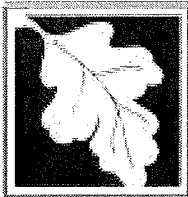
[ ] c. Emergency Exclusion

Effective Date of Permit: (mm/dd/yyyy)

[x] 2. MCP Performance Standard MCP Citations(s): MADEP POLICY #WSC94-150

[ ] 3. DEP Approval Letter Date of Letter: (mm/dd/yyyy)

[ ] 4. Other Describe:



CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Remedial System or Monitoring Program: 2 of 3

Release Tracking Number

3 - 485

D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

- 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days.
a. Name: b. Grade:
c. License No: d. License Exp. Date: (mm/dd/yyyy)
2. Not Required
3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (check all that apply)

- 1. The Active Remedial System was functional one or more days during the Reporting Period.
a. Days System was Fully Functional: 157 b. GW Recovered (gals):
c. NAPL Recovered (gals): d. GW Discharged (gals):
e. Avg. Soil Gas Recovery Rate (scfm): 171 f. Avg. Sparging Rate (scfm):

2. Remedial Additives: (check all that apply)

- a. No Remedial Additives applied during the Reporting Period.
b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)

i. Nitrogen/Phosphorus:

Table with 4 columns: Name of Additive, Date, Quantity, Units

ii. Peroxides:

Table with 4 columns: Name of Additive, Date, Quantity, Units

iii. Microorganisms:

Table with 4 columns: Name of Additive, Date, Quantity, Units

iv. Other:

Table with 4 columns: Name of Additive, Date, Quantity, Units

c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

i. Permanganates:

Table with 4 columns: Name of Additive, Date, Quantity, Units

ii. Peroxides:

Table with 4 columns: Name of Additive, Date, Quantity, Units

iii. Persulfates:

Table with 4 columns: Name of Additive, Date, Quantity, Units

iv. Other:

Table with 4 columns: Name of Additive, Date, Quantity, Units



CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number

Remedial System or Monitoring Program: 2

of: 3

3

485

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.)

d. Other additives applied: (total quantity applied at the site for the current reporting period)

Table with 4 columns: Name of Additive, Date, Quantity, Units. Contains 3 empty rows.

Table with 4 columns: Name of Additive, Date, Quantity, Units. Contains 3 empty rows.

e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)

1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: b. Total Number of Days of Unscheduled Shutdowns:

c. Reason(s) for Unscheduled Shutdowns:

2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: 1 b. Total Number of Days of Scheduled Shutdowns: 26

c. Reason(s) for Scheduled Shutdowns: TEMPORARY SHUTDOWN TO MONITOR STATIC SITE CONDITIONS

3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a. Date of Final System or Monitoring Program Shutdown: (mm/dd/yyyy)

b. No Further Effluent Discharges.

c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

d. No Further Submittals Planned.

e. Other: Describe:

G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)

1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

Empty rectangular box for operational problems or notes.

5. Check here if additional/supporting information, data, maps, and/or sketches are attached to the form.





Bureau of Waste Site Cleanup

CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number

Remedial System or Monitoring Program: 3 of 3

3 - 485

A. DESCRIPTION OF ACTIVE OPERATION AND MAINTENANCE ACTIVITY:

1. Type of Active Operation and Maintenance Activity: (check all that apply)

[x] a. Active Remedial System: (check all that apply)

[ ] i. NAPL Recovery

[ ] ii. Soil Vapor Extraction/Bioventing

[ ] iii. Vapor-phase Carbon Adsorption

[ ] iv. Groundwater Recovery

[ ] v. Dual/Multi-phase Extraction

[ ] vi. Aqueous-phase Carbon Adsorption

[ ] vii. Air Stripping

[ ] viii. Sparging/Biosparging

[ ] ix. Cat/Thermal Oxidation

[x] x. Other Describe: BUILDING 5 SUB-SLAB SVE SYSTEM

[ ] b. Active Exposure Pathway Elimination Measure

Active Exposure Pathway Mitigation System to address (check one): [ ] i. Indoor Air [ ] ii. Drinking Water

[ ] c. Application of Remedial Additives: (check all that apply)

[ ] i. To the Subsurface

[ ] ii. To Groundwater (Injection)

[ ] iii. To the Surface

[ ] d. Active Remedial Monitoring Program Without the Application of Remedial Additives: (check all that apply; Sections C, D and E are not required; attach supporting information, data, maps and/or sketches needed by checking Section G5)

[ ] i. Reactive Wall

[ ] ii. Natural Attenuation

[ ] iii. Other Describe:

2. Mode of Operation: (check one)

[x] a. Continuous

[ ] b. Intermittent

[ ] c. Pulsed

[ ] d. One-time Event Only

[ ] e. Other:

3. System Effluent/Discharge: (check all that apply)

[ ] a. Sanitary Sewer/POTW

[ ] b. Groundwater Re-infiltration/Re-injection: (check one)

[ ] i. Downgradient

[ ] ii. Upgradient

[x] c. Vapor-phase Discharge to Ambient Air: (check one)

[x] i. Off-gas Controls

[ ] ii. No Off-gas Controls

[ ] d. Drinking Water Supply

[ ] e. Surface Water (including Storm Drains)

[ ] f. Other Describe:

B. MONITORING FREQUENCY:

1. Reporting period that is the subject of this submittal:

From: 4/1/2014

To: 9/30/2014

(mm/dd/yyyy)

(mm/dd/yyyy)

2. Number of monitoring events during the reporting period: (check one)

[ ] a. System Startup: (if applicable)

[ ] i. Days 1, 3, 6, and then weekly thereafter, for the first month.

[ ] ii. Other Describe:

[x] b. Post-system Startup (after first month) or Monitoring Program:

[ ] i. Monthly

[ ] ii. Quarterly

[ ] iii. Annually

[x] iv. Other Describe: BI-WEEKLY

[x] 3. Check here to certify that the number of required monitoring events were conducted during the reporting period.

C. EFFLUENT/DISCHARGE REGULATION: (check one to indicate how the effluent/discharge limits were established)

[ ] 1. NPDES: (check one)

[ ] a. Remediation General Permit

[ ] b. Individual Permit

[ ] c. Emergency Exclusion

Effective Date of Permit:

(mm/dd/yyyy)

[x] 2. MCP Performance Standard

MCP Citations(s):

MADEP POLICY #WSC94-150

[ ] 3. DEP Approval Letter

Date of Letter:

(mm/dd/yyyy)

[ ] 4. Other Describe:



Bureau of Waste Site Cleanup  
CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number

Remedial System or Monitoring Program: 3 of 3

3 - 485

D. WASTEWATER TREATMENT PLANT OPERATOR: (check one)

- 1. Required due to Remedial Wastewater Treatment Plant in place for more than 30 days.
  - a. Name: \_\_\_\_\_ b. Grade: \_\_\_\_\_
  - c. License No: \_\_\_\_\_ d. License Exp. Date: \_\_\_\_\_  
(mm/dd/yyyy)

- 2. Not Required
- 3. Not Applicable

E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (check all that apply)

- 1. The Active Remedial System was functional one or more days during the Reporting Period.
  - a. Days System was Fully Functional: 183
  - b. GW Recovered (gals): \_\_\_\_\_
  - c. NAPL Recovered (gals): \_\_\_\_\_
  - d. GW Discharged (gals): \_\_\_\_\_
  - e. Avg. Soil Gas Recovery Rate (scfm): 128
  - f. Avg. Sparging Rate (scfm): \_\_\_\_\_

2. Remedial Additives: (check all that apply)

- a. No Remedial Additives applied during the Reporting Period.
- b. Enhanced Bioremediation Additives applied: (total quantity applied at the site for the current reporting period)

i. Nitrogen/Phosphorus:

Name of Additive	Date	Quantity	Units

ii. Peroxides:

Name of Additive	Date	Quantity	Units

iii. Microorganisms:

Name of Additive	Date	Quantity	Units

iv. Other:

Name of Additive	Date	Quantity	Units

c. Chemical oxidation/reduction additives applied: (total quantity applied at the site for the current reporting period)

i. Permanganates:

Name of Additive	Date	Quantity	Units

ii. Peroxides:

Name of Additive	Date	Quantity	Units

iii. Persulfates:

Name of Additive	Date	Quantity	Units

iv. Other:

Name of Additive	Date	Quantity	Units



Bureau of Waste Site Cleanup  
CRA REMEDIAL MONITORING REPORT

Pursuant to 310 CMR 40.0800 (SUBPART H)

Release Tracking Number

Remedial System or Monitoring Program: 3 of 3

3 - 485

**E. STATUS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM DURING REPORTING PERIOD: (cont.)**

d. Other additives applied: (total quantity applied at the site for the current reporting period)

Name of Additive	Date	Quantity	Units

Name of Additive	Date	Quantity	Units

e. Check here if any additional Remedial Additives were applied. Attach list of additional additives and include Name of Additive, Date Applied, Quantity Applied and Units (in gals. or lbs.)

**F. SHUTDOWNS OF ACTIVE REMEDIAL SYSTEM OR ACTIVE REMEDIAL MONITORING PROGRAM: (check all that apply)**

1. The Active Remedial System had unscheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Unscheduled Shutdowns: \_\_\_\_\_ b. Total Number of Days of Unscheduled Shutdowns: \_\_\_\_\_

c. Reason(s) for Unscheduled Shutdowns: \_\_\_\_\_

2. The Active Remedial System had scheduled shutdowns on one or more occasions during the Reporting Period.

a. Number of Scheduled Shutdowns: \_\_\_\_\_ b. Total Number of Days of Scheduled Shutdowns: \_\_\_\_\_

c. Reason(s) for Scheduled Shutdowns: \_\_\_\_\_

3. The Active Remedial System or Active Remedial Monitoring Program was permanently shutdown/discontinued during the Reporting Period.

a: Date of Final System or Monitoring Program Shutdown: \_\_\_\_\_  
(mm/dd/yyyy)

b. No Further Effluent Discharges.

c. No Further Application of Remedial Additives planned; sufficient monitoring completed to demonstrate compliance with 310 CMR 40.0046.

d. No Further Submittals Planned.

e. Other: Describe: \_\_\_\_\_

**G. SUMMARY STATEMENTS: (check all that apply for the current reporting period)**

1. All Active Remedial System checks and effluent analyses required by the approved plan and/or permit were performed when applicable.

2. There were no significant problems or prolonged (>25% of reporting period) unscheduled shutdowns of the Active Remedial System.

3. The Active Remedial System or Active Remedial Monitoring Program operated in conformance with the MCP, and all applicable approval conditions and/or permits.

4. Indicate any Operational Problems or Notes:

5. Check here if additional/supporting Information, data, maps, and/or sketches are attached to the form.

**Attachment to BWSC 108  
150 Sohier Road, Beverly, MA  
RTN 3-0485**

Approvals from the Massachusetts Department of Environmental that this submittal is subject to include:

- “Approval to Apply Remedial Additive; MGL.c.21E & 310 CMR 40.0000” issued on August 18, 2004 (for permanganate addition activities)
- “Approval to Apply Remedial Additive; MGL.c.21E & 310 CMR 40.0000” issued on November 20, 2006 (for bioremediation activities)

**APPENDIX B**

**DRAIN LINE ASSESSMENT BUILDING 3 AND 5**

Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



Screen shot 1: four-inch cast iron drain line 7 at Building 3 with wall deposits and sediment before cleaning

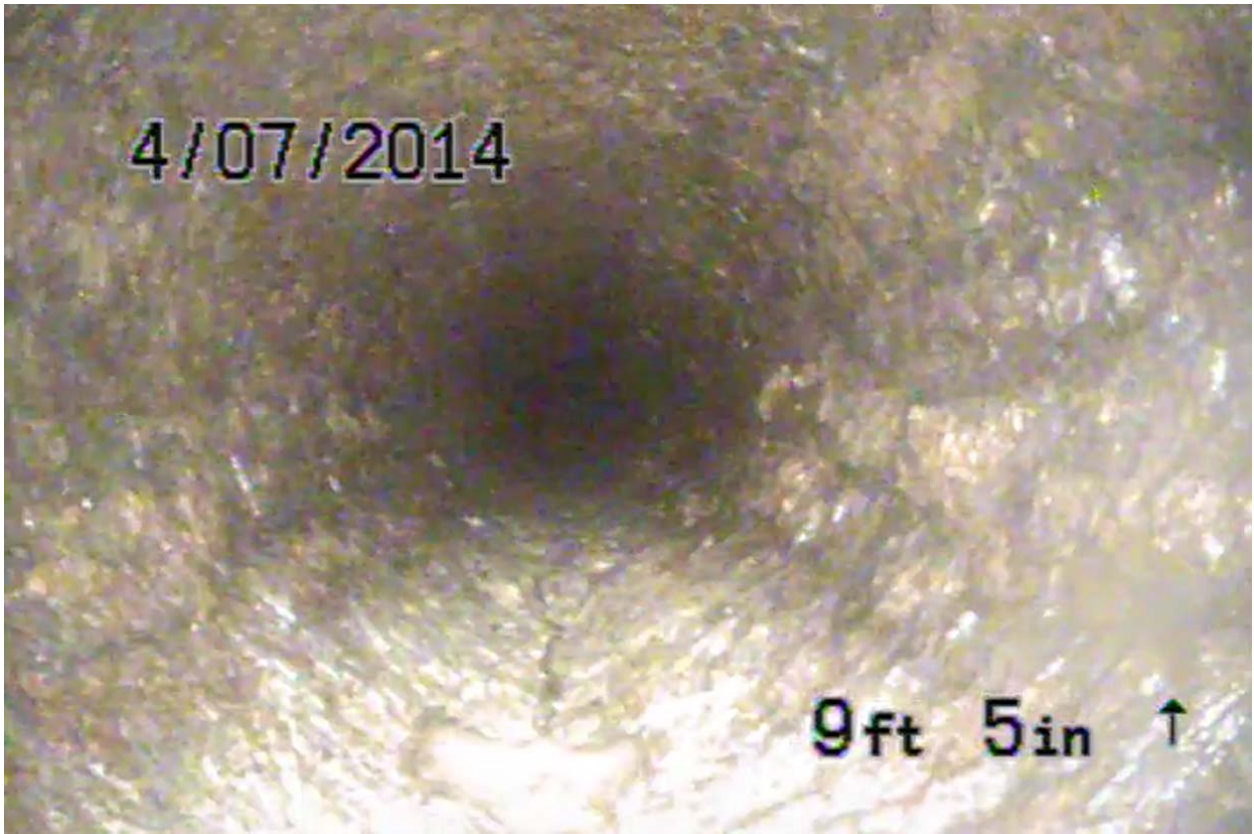
Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



Screen shot 2: four-inch cast iron drain line 7 at Building 3 after cleaning



**Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA**



Screen shot 3: four-inch cast iron drain line 7 at Building 3 with crack and hole in bottom of pipe, approximately 9 feet from former sump

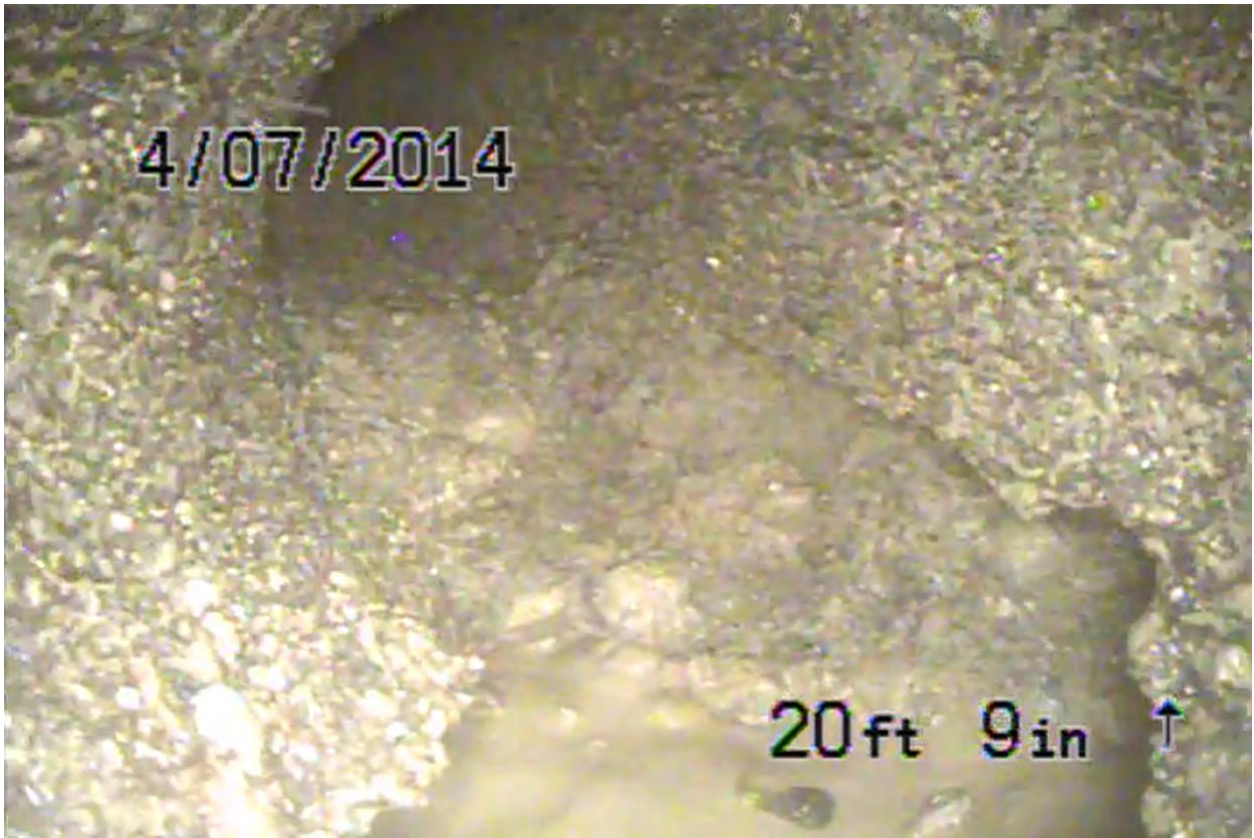


Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



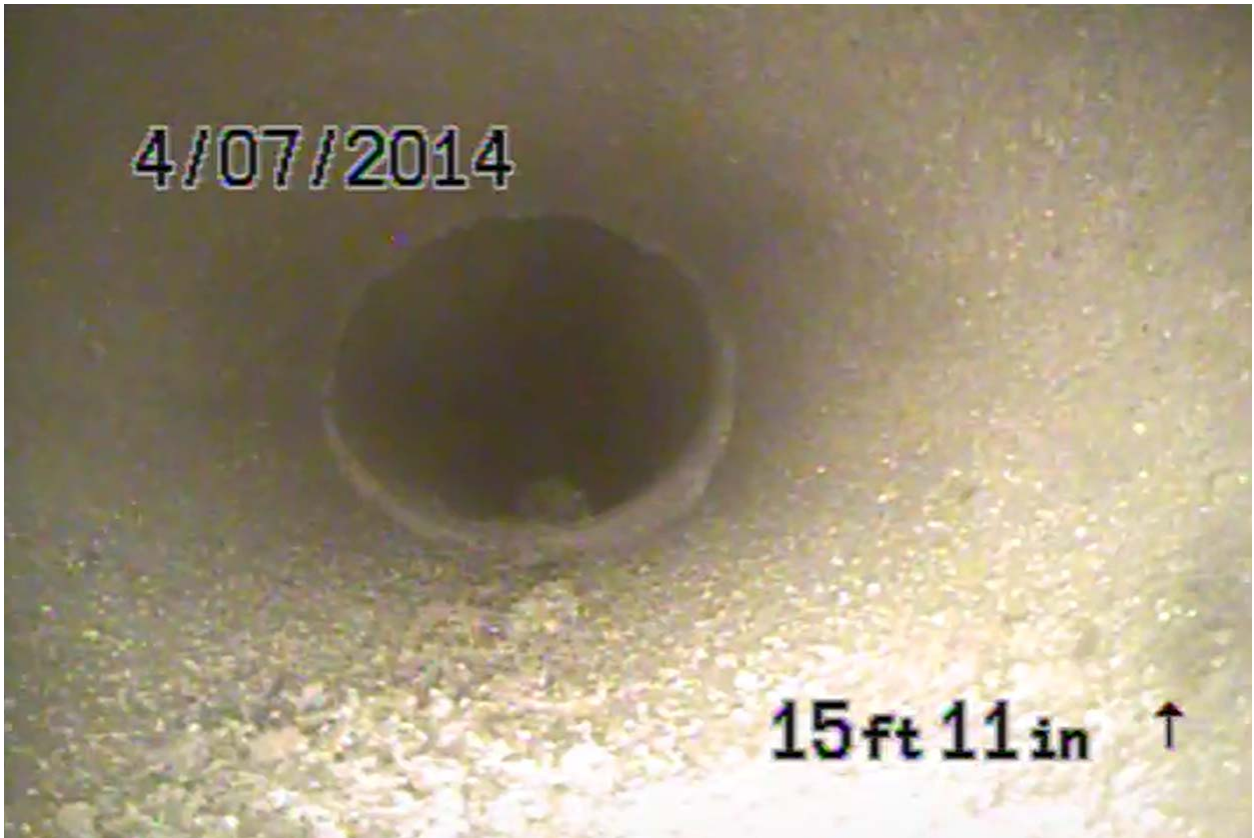
Screen shot 4: four-inch cast iron drain line 7 at Building 3 with unknown connection (left) and hole in bottom of pipe, approximately 18 feet from former sump

Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



Screen shot 5: four-inch cast iron drain line 7 at Building 3 with bottom of third of pipe completely deaerated, approximately 20 feet from former sump

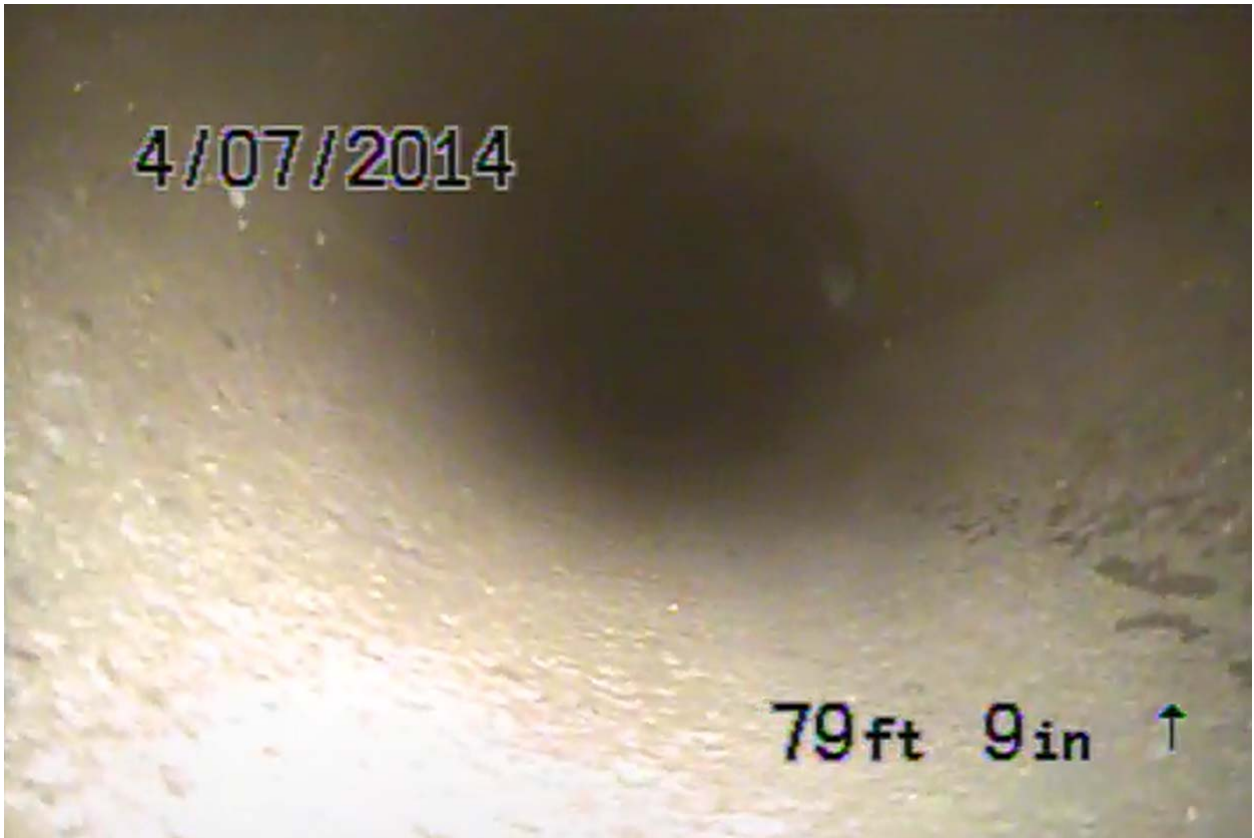
Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



Screen shot 6: four-inch clay drain line 9 at Building 3



Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



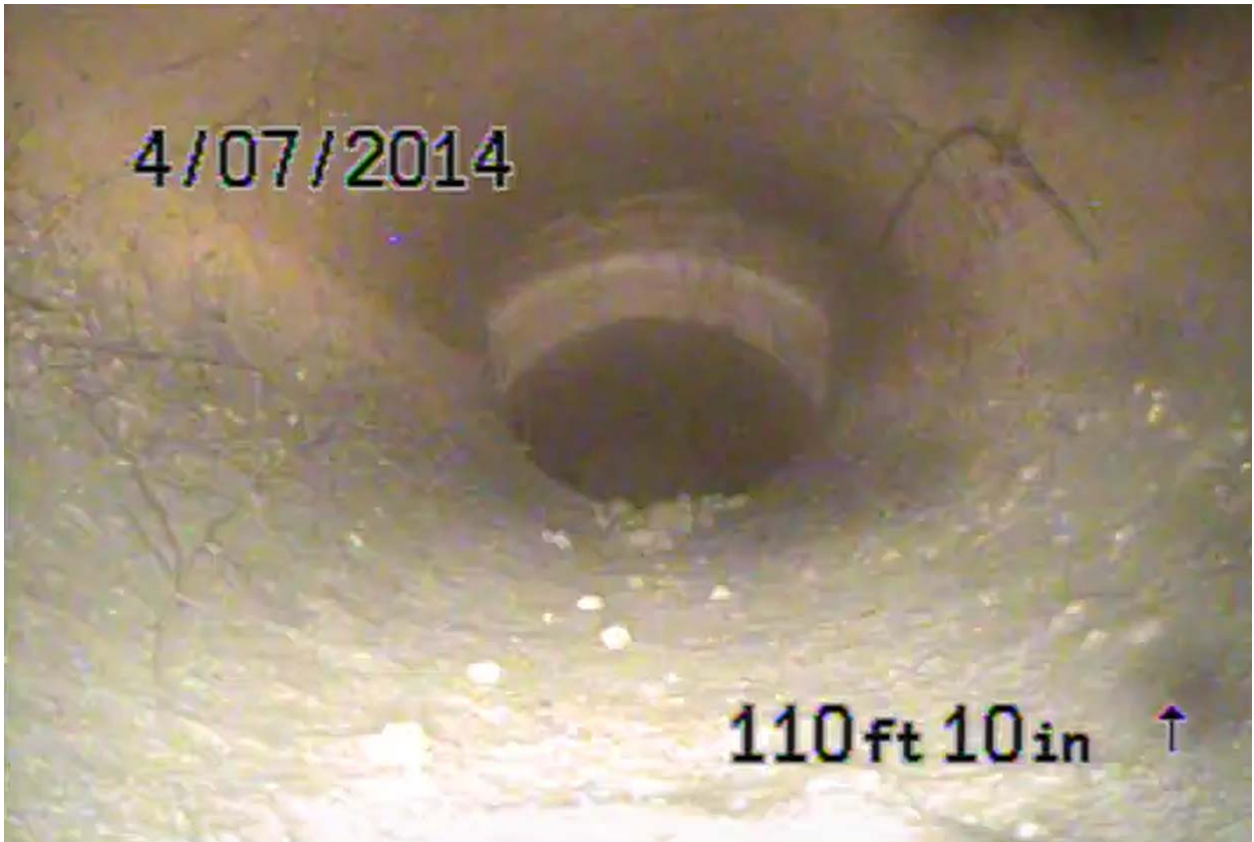
Screen shot 7: four-inch clay drain line 9 at Building 3 with potential connection on right, approximately 80 feet from former sump

Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



Screen shot 8: four-inch clay drain line 9 at Building 3 with potential break on right, approximately 100 feet from former sump

**Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA**



Screen shot 9: four-inch clay drain line 9 at Building 3 with significantly off-set joint, approximately 110 feet from former sump

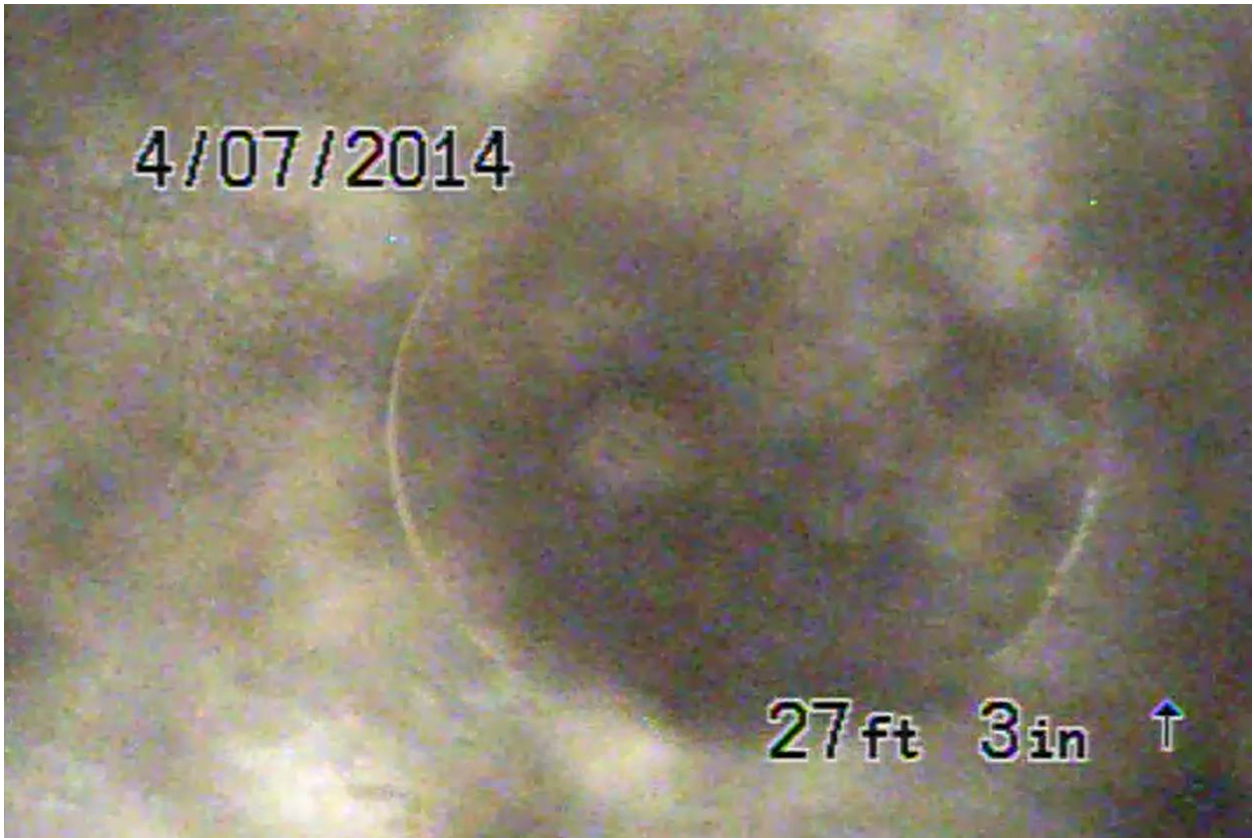
**Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA**



Screen shot 10: four-inch clay drain line 9 at Building 3 with off-set and cracked joint, approximately 113 feet from former sump



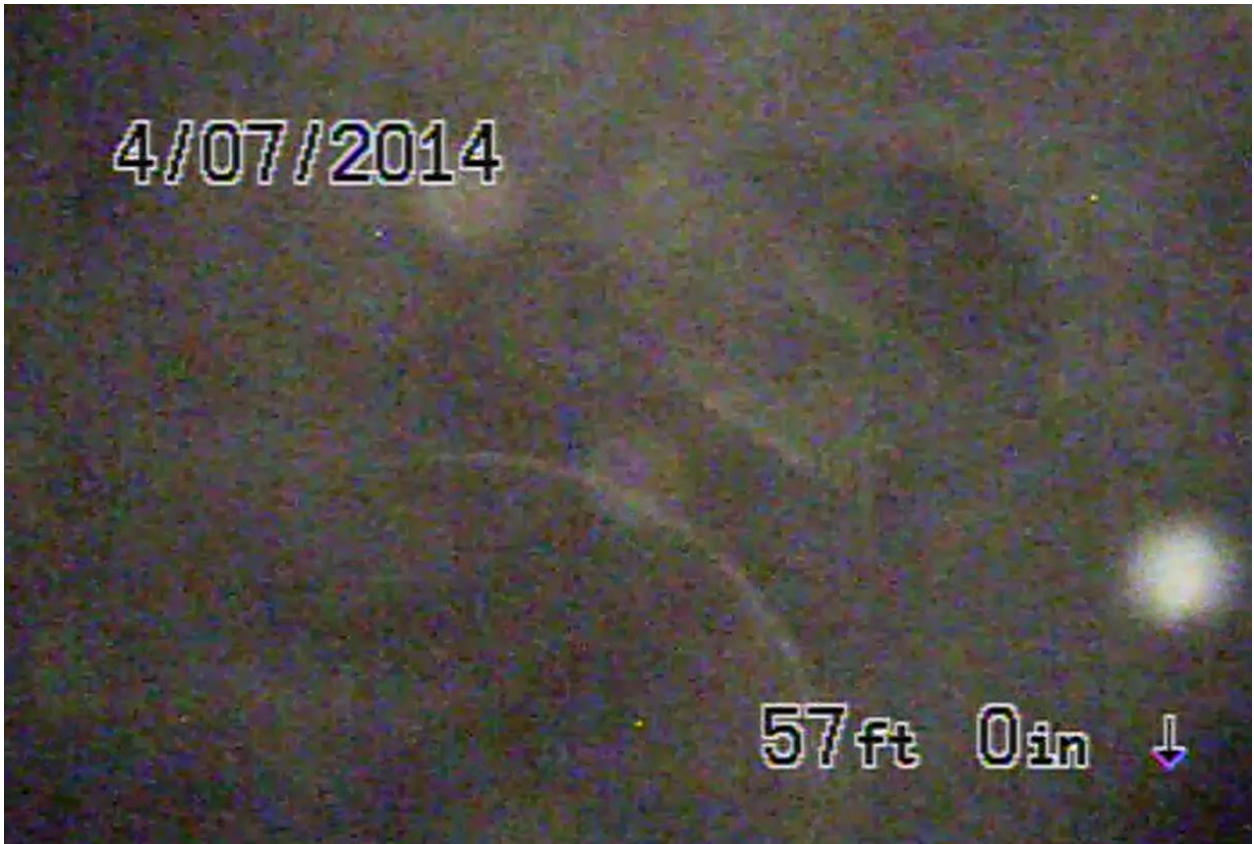
Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



Screen shot 11: ten-inch clay drain line 10 at Building 5

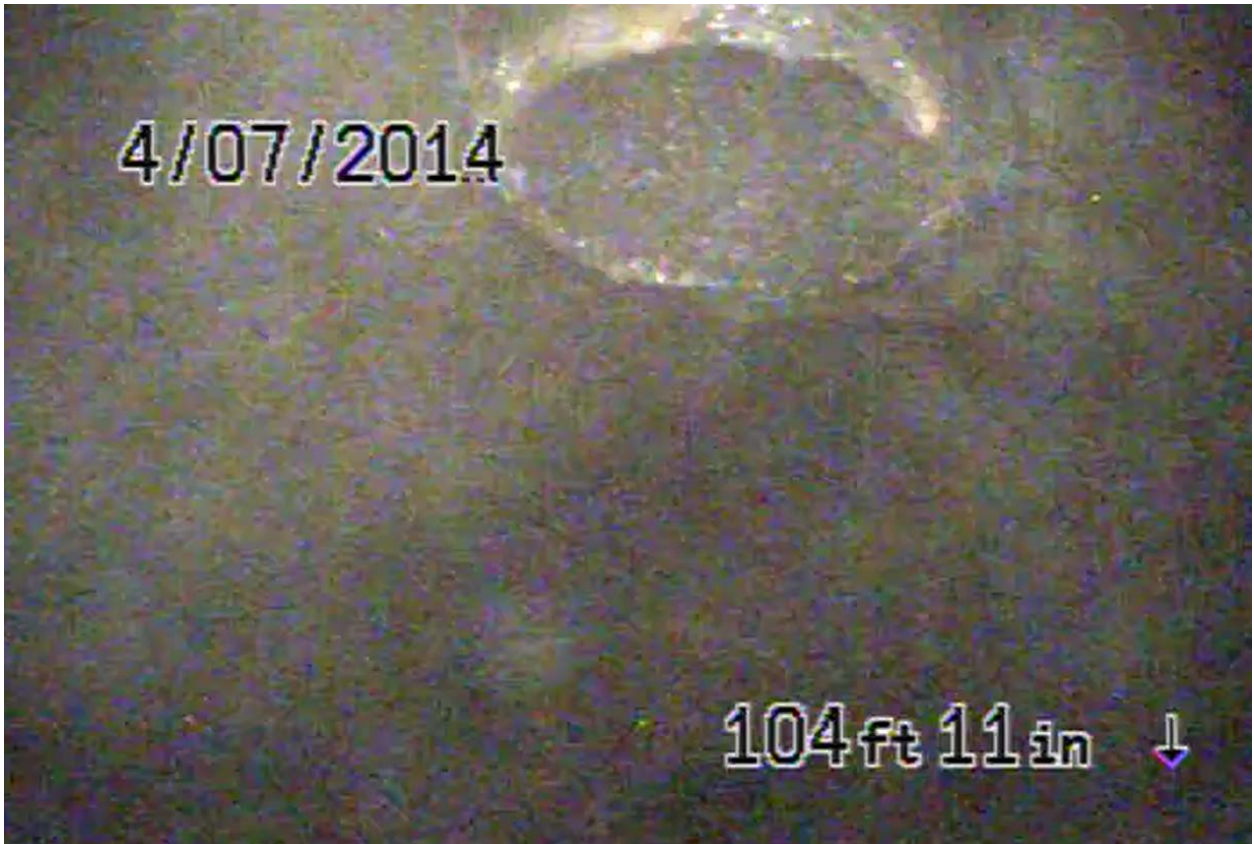


Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



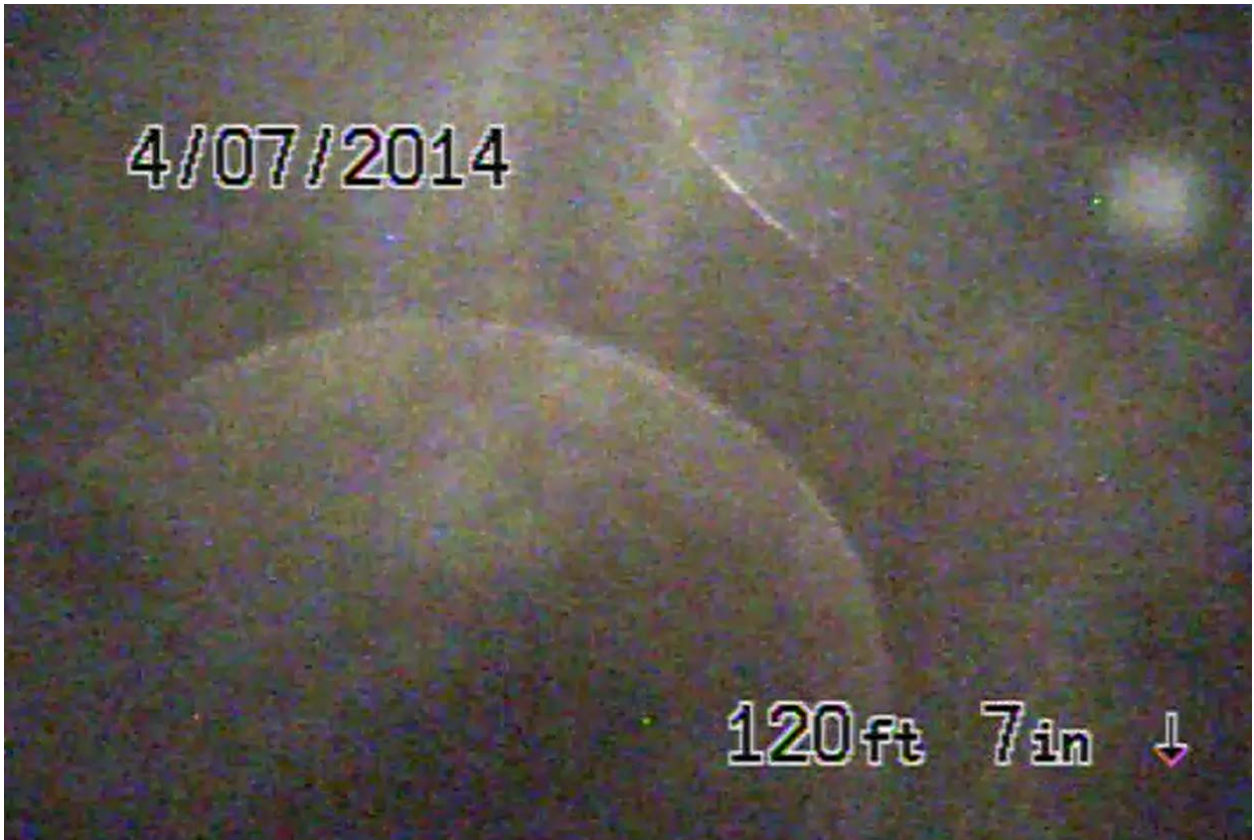
Screen shot 12: ten-inch clay drain line 10 at Building 5 with potential roof drain connection at upper right, approximately 57 feet from manhole

Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



Screen shot 13: ten-inch clay drain line 10 at Building 5 with potential connection at top, approximately 104 feet from manhole

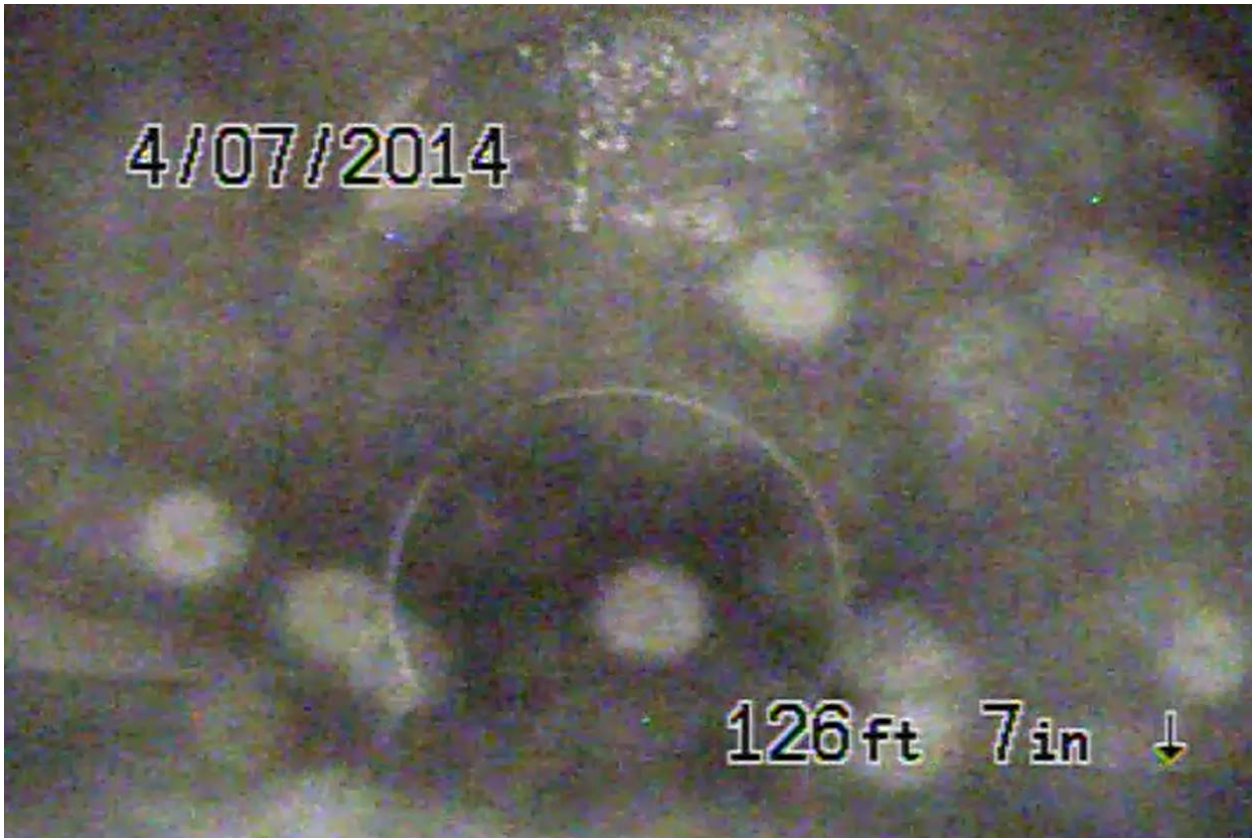
Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



Screen shot 14: ten-inch clay drain line 10 at Building 5 with potential roof drain connection at upper right, approximately 120 feet from manhole

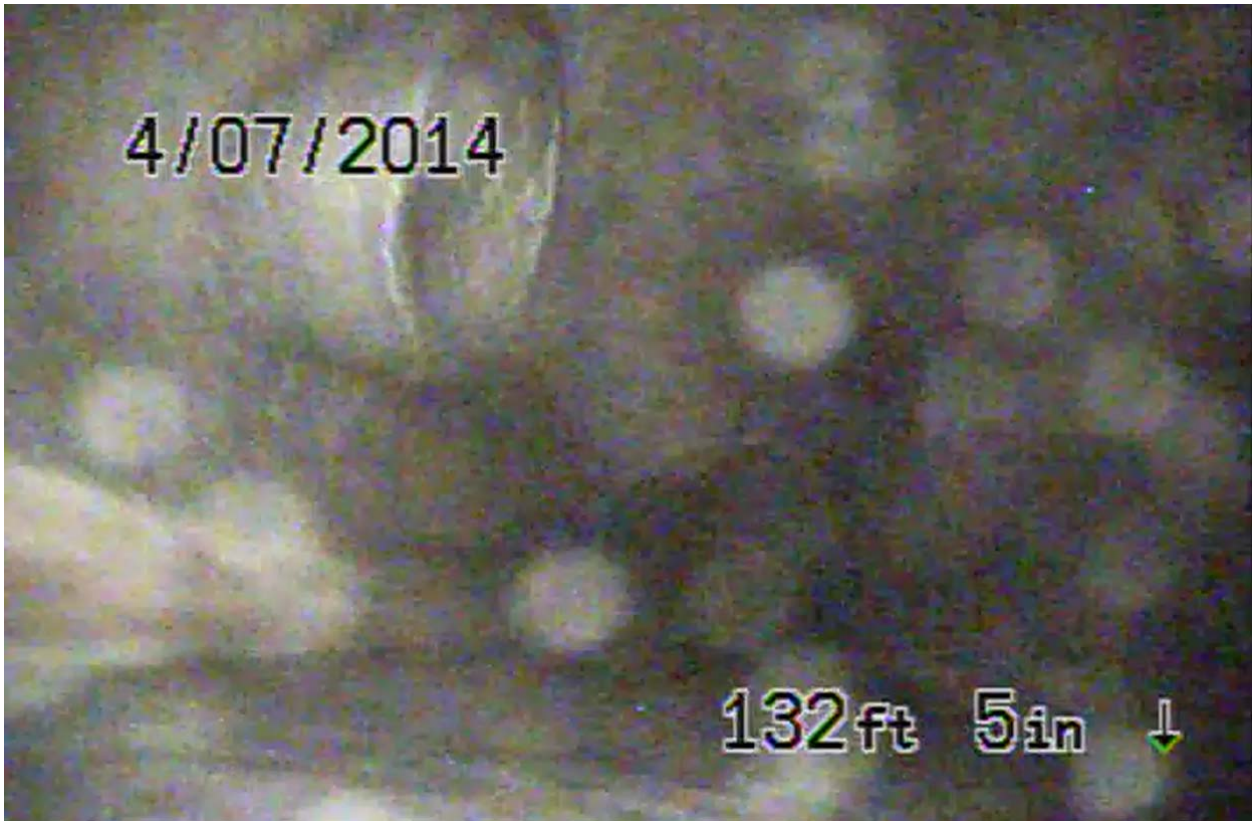


Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



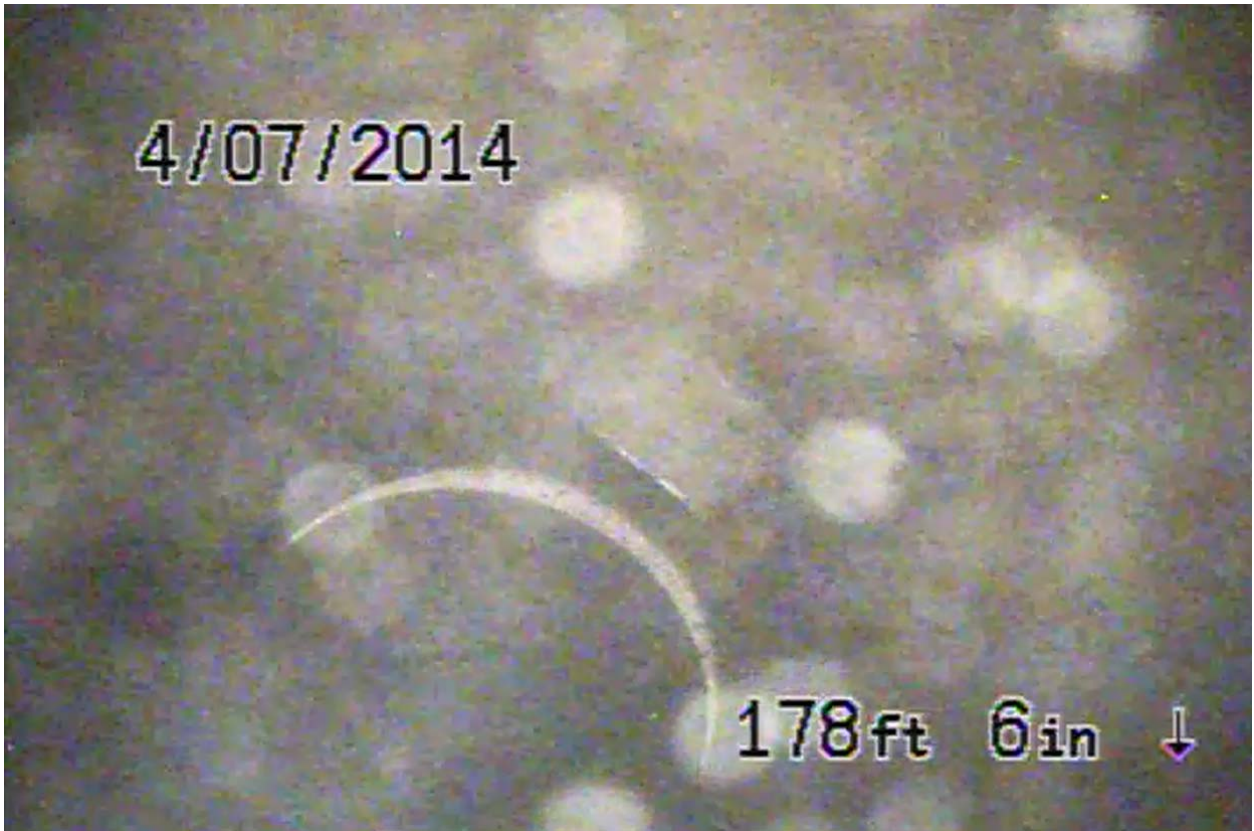
Screen shot 15: ten-inch clay drain line 10 at Building 5 with potential connection at top, approximately 126 feet from manhole

Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



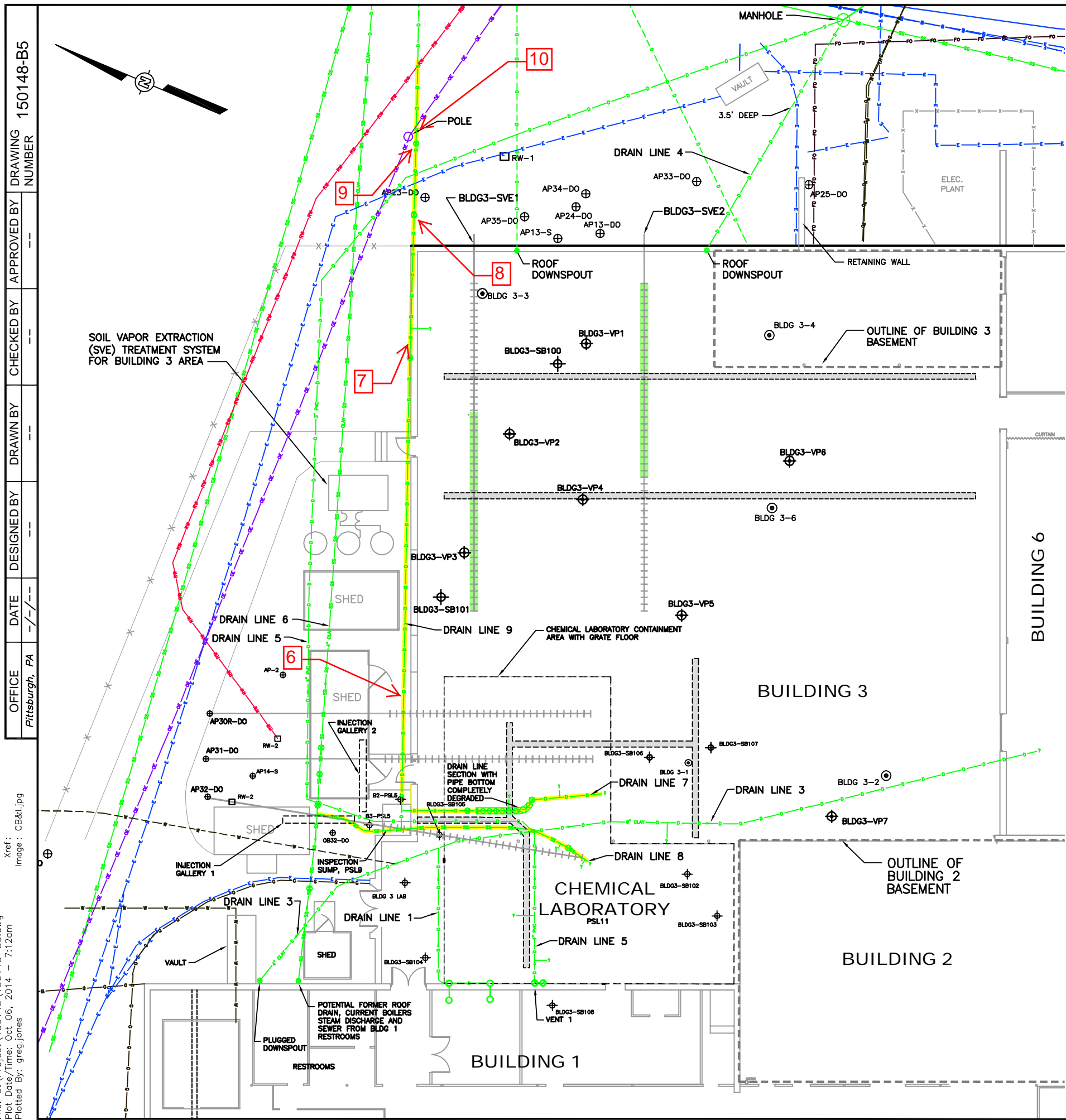
Screen shot 16: ten-inch clay drain line 10 at Building 5 with potential connection on left, approximately 132 feet from manhole

Drain Inspection Screen Shots  
April 7, 2014 Video Drain Inspection  
Former Varian Facility Site  
Beverly, MA



Screen shot 17: ten-inch clay drain line 10 at Building 5 with potential roof drain connection upper right, approximately 178 feet from manhole





1 Screen Shot Location

- ### LEGEND
- BUILDING 3 TREATMENT AREA
  - ||||| HORIZONTAL SOIL VAPOR EXTRACTION (SVE) WELL LOCATION
  - ||||| PORTION (SHADED) OF HORIZONTAL SOIL VAPOR EXTRACTION (SVE) WELL SEAL WITH PACKER
  - ⊕ SUB-SLAB SOIL VAPOR MONITORING POINT
  - ⊕ SOIL BORING LOCATION
  - ⊙ INDOOR AIR SAMPLE LOCATION
  - ⊕ MONITORING WELL
  - RECOVERY WELL
  - ⋈ BUILDING COLUMNS
  - ==== UTILITY TRENCH
  - ==== FORMER UTILITY TRENCH-FILLED WITH CONCRETE
  - ==== VIDEO INSPECTED 4/7/14
  - DRAIN LINES
  - ACTIVE ROOF DRAINS
  - FORMER SUCTION VENTS
  - BUILDING WALLS
  - ××× FENCE LINE
  - ELECTRICAL LINE
  - OVERHEAD ELECTRIC LINE
  - GAS
  - SANITARY SEWER
  - DRAIN LINE
  - DRAIN LINE SUSPECTED LOCATION
  - WATER
  - RECOVERY WATER
  - FIBER OPTIC
  - CONNECTION TO UNKNOWN LINE
  - ⊗ POTENTIAL BREACH IN LINE

NOTES:

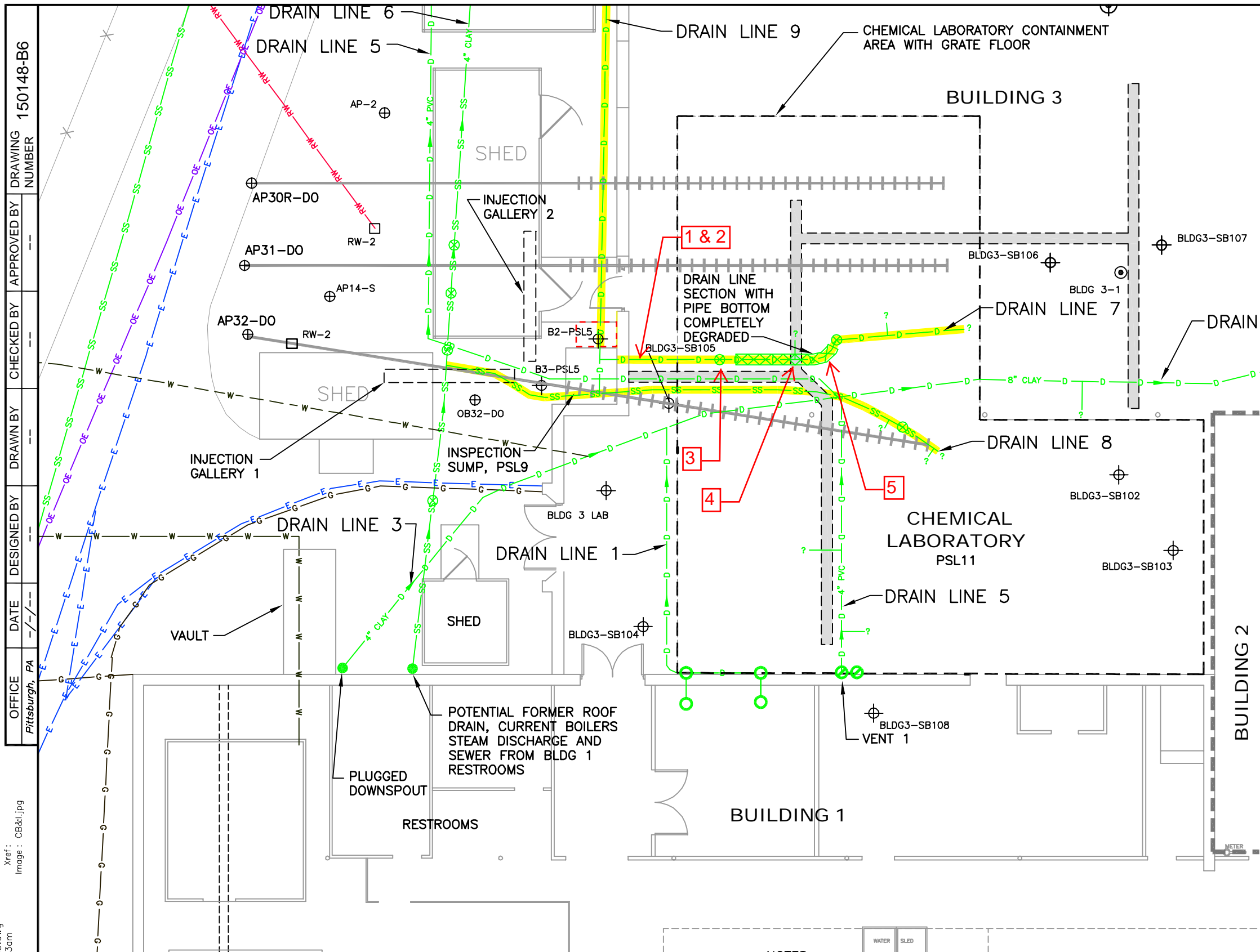
1. UTILITY TRENCH LOCATION BASED ON BOMAC LABORATORIES FLOOR PLAN, BUILDING 1, 2, 3, 4 AND 6 REVISED FEBRUARY 25, 1964.
2. UTILITIES BASED ON UTILITY LOCATION PLAN, BY BAY STATE SUBSURFACE INVESTIGATION, MARCH 20, 1995.
3. DRAIN LINES BASED ON 7/17/13, 10/29/13 AND 12/27/13 VIDEO DRAIN INSPECTION.
4. AP30R-DO, AP31-DO AND AP32-DO ARE ANGLED DEEP OVERBURDEN PERMANGANATE INJECTION WELLS COLOR PURPLE AND DEFINED.



	CB&I Environmental & Infrastructure, Inc. 150 Royall Street Canton, Massachusetts (617) 589-5111
	APPENDIX B FIGURE 1

**BUILDING 3 REMEDIAL TREATMENT AREA  
EXISTING WELLS AND UTILITIES**  
FORMER VARIAN FACILITY SITE  
150 SOHIER ROAD  
BEVERLY, MASSACHUSETTS

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 Plotted By: greg.jones  
 Xref: Image: CB&I.jpg  
 OFFICE: Pittsburgh, PA  
 DATE: --/--  
 DESIGNED BY: --  
 DRAWN BY: --  
 CHECKED BY: --  
 APPROVED BY: --  
 DRAWING NUMBER: 150148-B5



### LEGEND

- HORIZONTAL SOIL VAPOR EXTRACTION (SVE) WELL LOCATION
- PORTION (SHADED) OF HORIZONTAL SOIL VAPOR EXTRACTION (SVE) WELL SEAL WITH PACKER
- SUB-SLAB SOIL VAPOR MONITORING POINT
- SOIL BORING LOCATION
- INDOOR AIR SAMPLE LOCATION
- MONITORING WELL
- RECOVERY WELL
- BUILDING COLUMNS
- UTILITY TRENCH
- FORMER UTILITY TRENCH-FILLED WITH CONCRETE
- BUILDING WALLS
- ACTIVE ROOF DRAINS
- FORMER SUCTION VENTS
- FENCE LINE
- VIDEO INSPECTED 4/7/14
- ELECTRICAL LINE
- OVERHEAD ELECTRIC LINE
- GAS
- SANITARY SEWER
- DRAIN LINE
- DRAIN LINE SUSPECTED LOCATION
- WATER
- WATER SUSPECTED LOCATION
- RECOVERY WATER
- FIBER OPTIC
- CONNECTION TO UNKNOWN LINE
- POTENTIAL BREACH IN LINE
- FLOW DIRECTION



Screen Shot Location

excavation

**NOTES:**

1. UTILITY TRENCH LOCATION BASED ON BOMAC LABORATORIES FLOOR PLAN, BUILDING 1, 2, 3, 4 AND 6 REVISED FEBRUARY 25, 1964.
2. UTILITIES BASED ON UTILITY LOCATION PLAN, BY BAY STATE SUBSURFACE INVESTIGATION, MARCH 20, 1995.
3. DRAIN LINES BASED ON 7/17/13, 10/29/13 AND 12/27/13 VIDEO DRAIN INSPECTION.
4. AP30R-DO, AP31-DO AND AP32-DO ARE ANGLED DEEP OVERBURDEN PERMANGANATE INJECTION WELLS COLOR PURPLE AND DEFINED.

CB&I Environmental & Infrastructure, Inc.  
150 Royall Street  
Canton, Massachusetts  
(617) 589-5111

**APPENDIX B  
FIGURE 2**

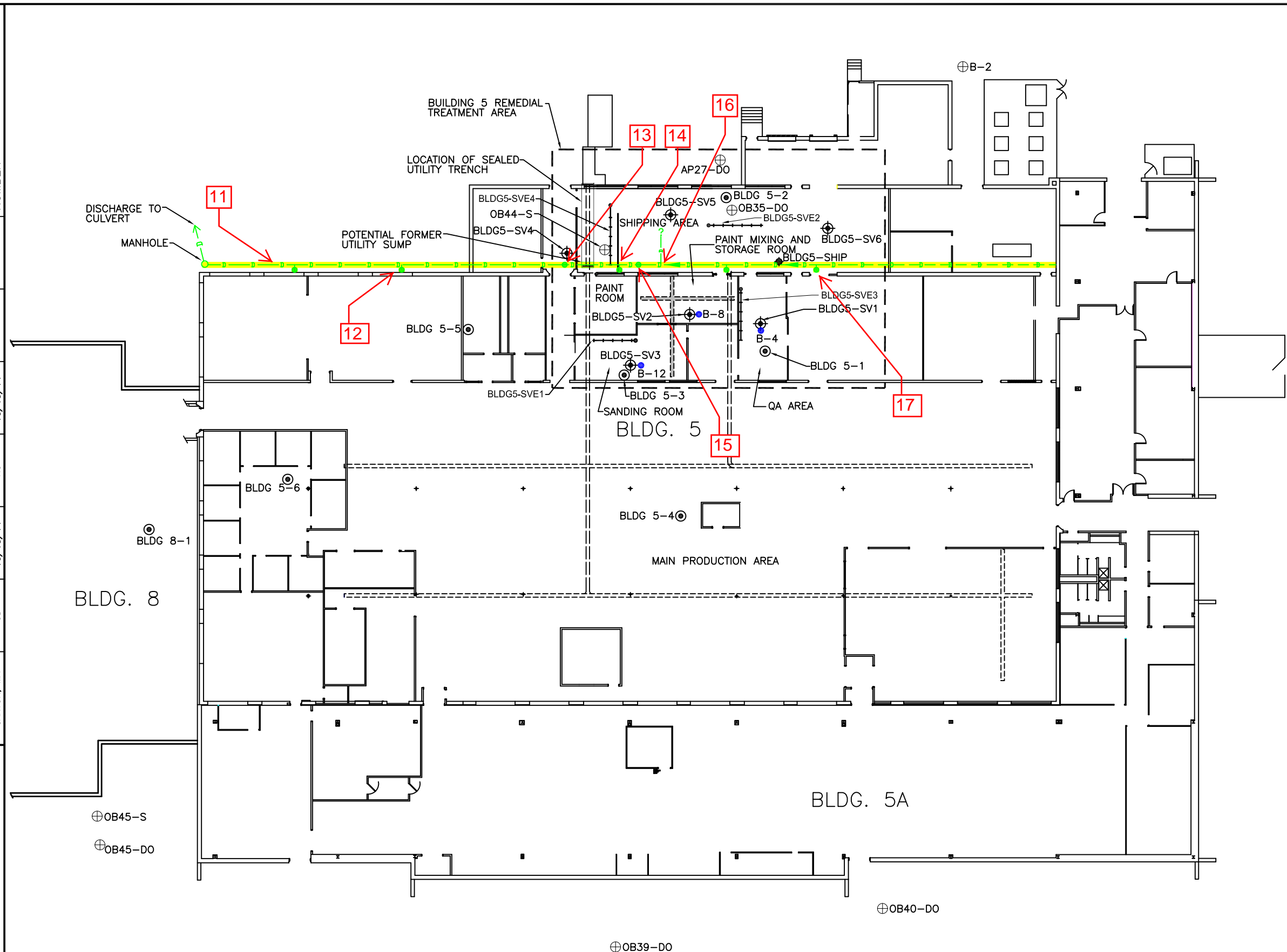
**BUILDING 3 REMEDIAL TREATMENT AREA  
EXISTING WELLS AND UTILITIES**  
FORMER VARIAN FACILITY SITE  
150 SOHIER ROAD  
BEVERLY, MASSACHUSETTS

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 Plotted By: chris.desiato

OFFICE CANTON, MA  
 DRAWN BY CD  
 CHECKED BY RC  
 APPROVED BY  
 DRAWING NUMBER 152780-DRAIN LINE

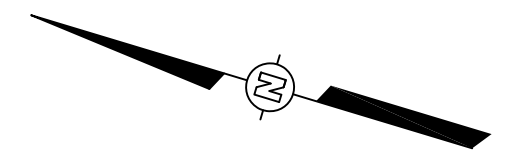


**11** Screen Shot Location

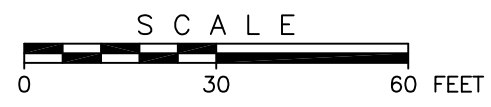
**LEGEND**


- SUB-SLAB SOIL VAPOR SAMPLE LOCATION (2011-2014)
- INDOOR AIR SAMPLE LOCATION (2011-2014)
- SUB-SLAB SOIL VAPOR SAMPLE LOCATION (1995)
- MONITORING WELL
- SOIL BORING
- FORMER UTILITY TRENCH FILLED WITH CONCRETE
- UTILITY TRENCH
- SVE TRENCH WELL INSTALLED JULY/AUGUST 2012
- DRAIN LINE (MANHOLE TO 187')
- DRAIN LINE SUSPECT LOCATION (FROM 187' TO END)
- ROOF DRAIN CONNECTION
- CONNECTION TO UNKNOWN LINE
- UNKNOWN CONNECTION IN TOP OF DRAIN LINE
- FLOW IN DRAIN LINE
- VIDEO INSPECTION 4/17/14 (FROM MANHOLE TO 187FT)

INDOOR AIR SAMPLE ID	ROOM
RTN 3-0485	
BLDG 5-1	QA AREA
BLDG 5-2	SHIPPING AREA
BLDG 5-3	SANDING ROOM
BLDG 5-4	PRODUCTION AREA
BLDG 5-5	CATHODE SPRAY ROOM
BLDG 5-6	COMMON OFFICE AREA
BLDG 8-1	HIGH POWER TESTING BUILDING 8 BASEMENT



**REFERENCE:**  
 PLAN DERIVED FROM COMMUNICATIONS & POWER INDUSTRIES MAP, DATED 07/11/03, CLEAN HARBORS ENVIRONMENTAL SERVICES, INC. MAP TITLED "1962-BUILDING 5", AND CB&I ENVIRONMENTAL FIELD RECONNAISSANCE, JULY 2012 AND APRIL 2014.




**CB&I ENVIRONMENTAL & INFRASTRUCTURE, INC.**  
 150 ROYALL STREET  
 CANTON, MASSACHUSETTS  
 (617) 589-5111

**APPENDIX B - FIGURE 3**  
**BUILDING 5 REMEDIAL TREATMENT AREA**  
 FORMER VARIAN FACILITY  
 150 SOHIER ROAD  
 BEVERLY, MASSACHUSETTS

**APPENDIX C**

**COPIES OF WASTE MAINFESTS**

717242

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number MAR00000671	2. Page 1 of 2	3. Emergency Response Phone (877) 818-0087	4. Manifest Tracking Number <b>000863654 VES</b>				
5. Generator's Name and Mailing Address Atta R. Cadorette VARIAN MEDICAL SYSTEMS C/O 150 ROYALL STREET CANTON, MA 02021			Generator's Site Address (if different than mailing address) VARIAN MEDICAL SYSTEMS, INC 150 SOhier ROAD- TRTMENT FAC. BEVERLY, MA 01915						
6. Transporter 1 Company Name VEOLIA ES TECHNICAL SOLUTIONS			U.S. EPA ID Number NJ D 0 8 0 6 3 1 3 6 9						
7. Transporter 2 Company Name SJ Transportation CO INC			U.S. EPA ID Number TX D 0 0 0 8 3 8 8 9 6						
8. Designated Facility Name and Site Address VEOLIA ES TECHNICAL SOLUTIONS HIGHWAY 73 3.5 MILES W. OF TAYLOR'S BAYOU PORT ARTHUR, TX 77640			U.S. EPA ID Number TX D 0 0 0 8 3 8 8 9 6						
Facility's Phone: 409 736-2871									
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
	X	HAZ077 HAZARDOUS WASTE, SOLID, N.O.S., (TRICHLOROETHYLENE), 9, III		No.	Type	400	P	FC02	OUTSPOH
				1	DM				
14. Special Handling Instructions and Additional Information HR Service Contracted by VESTS **CERTIFICATE OF DESTRUCTION REQUIRED**									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Offeror's Printed/Typed Name Raymond J. Cadorette Agent for VMS			Signature <i>[Signature]</i>			Month Day Year 04 11 14			
INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____								
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name: Jeremy Anderson Signature: <i>[Signature]</i> Month Day Year: 4 11 14 Transporter 2 Printed/Typed Name: Felicia Cret J. Signature: <i>[Signature]</i> Month Day Year: 04 14 14								
TRANSPORTER	18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: _____								
	18b. Alternate Facility (or Generator) U.S. EPA ID Number _____								
	18c. Signature of Alternate Facility (or Generator) Month Day Year _____								
DESIGNATED FACILITY	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. HOYO 2. 3. 4.								
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name: Dem Jones Signature: <i>[Signature]</i> Month Day Year: 04 23 14								

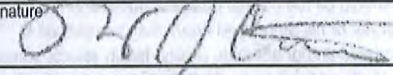
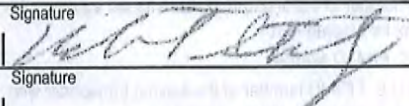
<b>UNIFORM HAZARDOUS WASTE MANIFEST</b> (Continuation Sheet)		21. Generator ID Number <i>MARK0006734</i>	22. Page <i>of 2</i>	23. Manifest Tracking Number <i>000863654VES</i>			
24. Generator's Name <i>Varioin Medical Systems Co</i>							
25. Transporter <i>3</i> Company Name <i>Venka &amp; Technical Solutions</i>		U.S. EPA ID Number <i>NJ0081X 31869</i>					
26. Transporter <i>4</i> Company Name <i>TRAD TRANSPORT INC</i>		U.S. EPA ID Number <i>000981S 88 791</i>					
27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers		29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes	
		No.	Type				
	<i>TRANS ONLY</i>						
32. Special Handling Instructions and Additional Information							
33. Transporter <i>3</i> Acknowledgment of Receipt of Materials							
Printed/Typed Name <i>MARK WHEELER</i>		Signature <i>[Signature]</i>			Month <i>4</i>	Day <i>21</i>	Year <i>14</i>
34. Transporter Acknowledgment of Receipt of Materials							
Printed/Typed Name		Signature			Month	Day	Year
35. Discrepancy							
36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							

GENERATOR

TRANSPORTER

DESIGNATED FACILITY



<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <b>MAR000006734</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>800-424-9300</b>	4. Manifest Tracking Number <b>006197508 FLE</b>		
5. Generator's Name and Mailing Address <b>VARIAN MEDICAL SYSTEMS c/o CB&amp;I 150 ROLL STREET CAMBRIDGE, MA 02141</b>				Generator's Site Address (if different than mailing address) <b>VARIAN MEDICAL SYSTEMS FORMER VARIAN FACILITY 150 SOUTHER ROAD BEVERLY, MA 01915</b>			
Generator's Phone: <b>650-424-6103</b>		6. Transporter 1 Company Name <b>HORWATH TRUCKS INC</b>		U.S. EPA ID Number <b>PAD146714874</b>			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address <b>EVONA WATER TECHNOLOGIES LLC 2503 MUTAHAR STREET PHOENIX, AZ 85344</b>				U.S. EPA ID Number <b>AZ0982441263</b>			
Facility's Phone: <b>928-644-5758</b>							
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
		No.	Type				
X	1. <b>HAZARDOUS WASTE SOLID, AQS (SOLVENTS) 9. P6III</b>	12	DM	2000	P	F002	
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information <b>9b1: Spent Vapor (Carbon)</b>  <b>Profile # W90382KH-2 Exp: 12/1/15</b>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name <b>Ryann J. Cadorette Agent for VMS</b>				Signature 		Month Day Year <b>5 12 14</b>	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name <b>ROBERT STAMETZ</b>				Signature 		Month Day Year <b>5 12 14</b>	
Transporter 2 Printed/Typed Name				Signature		Month Day Year	
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
Manifest Reference Number: _____							
18b. Alternate Facility (or Generator)						U.S. EPA ID Number	
Facility's Phone: _____							
18c. Signature of Alternate Facility (or Generator)						Month Day Year	
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1.		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name				Signature		Month Day Year	

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b> (Continuation Sheet)		21. Generator ID Number <i>MARK00006734</i>	22. Page	23. Manifest Tracking Number <i>0008023665</i>		
24. Generator's Name <i>Vation Medical</i>						
25. Transporter <i>5</i> Company Name <i>Veolia</i>			U.S. EPA ID Number <i>WJ1080631369</i>			
26. Transporter _____ Company Name			U.S. EPA ID Number			
27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers		29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes
		No.	Type			
<i>TRANS ONLY</i>						
32. Special Handling Instructions and Additional Information						
33. Transporter Acknowledgment of Receipt of Materials						
Printed/Typed Name		Signature		Month	Day	Year
<i>KAT Adkins</i>		<i>KAT Adkins</i>		<i>10</i>	<i>26</i>	<i>14</i>
34. Transporter Acknowledgment of Receipt of Materials						
Printed/Typed Name		Signature		Month	Day	Year
35. Discrepancy						
36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						

GENERATOR

TRANSPORTER

DESIGNATED FACILITY

721821

Please print or type. (Form designed for use on elite (12-pitch) typewriter).

Form Approved. OMB No. 2050-0039

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number MAR 000006734	2. Page 1 of 2	3. Emergency Response Phone (877) 818-0087	4. Manifest Tracking Number <b>000862236 VES</b>		
5. Generator's Name and Mailing Address VARIAN MEDICAL SYSTEMS C/O CB&I ATTN: RAY CADORETTE 130 ROYALL STREET CANTON, MA 02021		Generator's Site Address (if different than mailing address) VARIAN MEDICAL SYSTEMS, INC 150 BOHIER ROAD - TRTMENT FAC. BEVERLY, MA 01915		Generator's Phone: 617-589-6102			
6. Transporter 1 Company Name VEOLIA ES TECHNICAL SOLUTIONS		U.S. EPA ID Number NJ D 0 8 0 6 3 1 3 6 9		7. Transporter 2 Company Name SS Transportation Co Inc U.S. EPA ID Number NJ D 2 7 1 6 2 9 9 7 6			
8. Designated Facility Name and Site Address VEOLIA ES TECHNICAL SOLUTIONS HIGHWAY 73 3.5 MILES W. OF TAYLOR'S BAYOU PORT ARTHUR, TX 77640		Facility's Phone: 409 736-2821		U.S. EPA ID Number TX D 0 0 0 8 3 8 8 9 6			
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	X	1. NA3082, HAZARDOUS WASTE, LIQUID, n.o.s., (TETRACHLOROETHYLENE), 9, III	3 DM		1200	P	F001 OUTS11BH
	X	2. NA3082, HAZARDOUS WASTE, LIQUID, n.o.s., (TRICHLOROETHYLENE), 9, III	1 DM		400	P	F002 OUTS10BH
	X	3. NA3077, HAZARDOUS WASTE, SOLID, n.o.s., (LEAD, TETRACHLOROETHYLENE), 9, III	1 DM		400	P	F001 D009 OUTS30BH
14. Special Handling Instructions and Additional Information HR Service Contracted by VESTE - 1) ERG:171 W:363633 A:PTAVES012 2) ERG:171 W:122982 A:PTAVES012 3) ERG:171 W:363649 A:PTA563649							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name Raymond J. Cadorette Agent for VMS		Signature <i>[Signature]</i>		Month Day Year 10 6 13 14			
INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.		Port of entry/exit: Date leaving U.S.:				
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name Jeremy Anderson	Signature <i>[Signature]</i>		Month Day Year 6 17 14			
	Transporter 2 Printed/Typed Name Monas Green	Signature <i>[Signature]</i>		Month Day Year 6 16 14			
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	18b. Alternate Facility (or Generator)				U.S. EPA ID Number		
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator)							
Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H040		2. H040		3. H040		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name Allane Thomas		Signature <i>[Signature]</i>		Month Day Year 7 13 14			



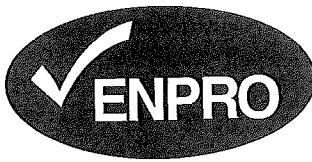
UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)		21. Generator ID Number <b>MAR00606734</b>	22. Page <b>2</b> of <b>2</b>	23. Manifest Tracking Number <b>000862236VES</b>		
24. Generator's Name <b>Varian Medical Systems c/o</b>						
25. Transporter <b>3</b> Company Name <b>Vedica ES Technical Solutions</b>			U.S. EPA ID Number <b>NTD090631369</b>			
26. Transporter <b>4</b> Company Name <b>TRAD TRANSPORT INC</b>			U.S. EPA ID Number <b>OKD981588-A1</b>			
27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers		29. Total Quantity	30. Unit Wt/Vol	31. Waste Codes
		No.	Type			
	<b>TRANS ONLY</b>					
32. Special Handling Instructions and Additional Information						
33. Transporter <b>3</b> Acknowledgment of Receipt of Materials						
Printed/Typed Name <b>Brittany Blankenship</b>				Signature <i>Brittany Blankenship</i>		Month Day Year <b>6   17   14</b>
34. Transporter <b>4</b> Acknowledgment of Receipt of Materials						
Printed/Typed Name <b>Kelly McElroy</b>				Signature <i>Kelly McElroy</i>		Month Day Year <b>6   23   14</b>
35. Discrepancy						
36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						

GENERATOR

TRANSPORTER

DESIGNATED FACILITY

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number <i>MAR 00000 6734</i>	2. Page 1 of <i>1</i>	3. Emergency Response Phone <i>800-424-9300</i>	4. Manifest Tracking Number <b>006197509 FLE</b>		
5. Generator's Name and Mailing Address <i>Walter K. Calverette 150 BROADWAY STREET CAMBRIDGE MA 02021</i>		Generator's Site Address (if different than mailing address) <i>VARIAN MEDICAL SYSTEMS INC VARIAN MEDICAL SYSTEMS 150 SULLY ROAD BURLINGAME, MASS 01915</i>					
Generator's Phone: <i>617-424-6103</i>		6. Transporter 1 Company Name <i>Hosworth Trucks Inc</i>					
7. Transporter 2 Company Name		U.S. EPA ID Number <i>PA0146714874</i>					
8. Designated Facility Name and Site Address <i>EVONIQ WATER TECHNOLOGIES LLC 2523 MUTAMBA STREET PARADE, AZ 05344</i>		U.S. EPA ID Number <i>AZ0782441263</i>					
Facility's Phone: <i>928-619-5758</i>							
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
		1. <i>NABOIT, HAZARDOUS WASTE SOLID ADS (SOLVENTS) 9, PC III</i>	No.	Type	<i>EST. 2000 P</i>		<i>F002</i>
	<i>X</i>		<i>10</i>	<i>DM</i>			
		2.					
		3.					
	4.						
14. Special Handling Instructions and Additional Information <i>9620 Spent Vapor Can 801</i>  <i>Profile # W90382RH-2 12/11/15</i>							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offeror's Printed/Typed Name <i>Ryan J. Calverette</i>		Signature <i>[Signature]</i>			Month <i>7</i>	Day <i>8</i>	Year <i>14</i>
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name <i>Dale Gorr</i>		Signature <i>[Signature]</i>			Month <i>07</i>	Day <i>28</i>	Year <i>14</i>
Transporter 2 Printed/Typed Name		Signature			Month	Day	Year
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
Manifest Reference Number:							
18b. Alternate Facility (or Generator) U.S. EPA ID Number							
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator)					Month	Day	Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1.	2.	3.	4.				
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name		Signature			Month	Day	Year



www.enpro.com

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www.tsdf.com

www.hazardouswaste.com

<b>NON HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. M A R 0 0 0 0 0 6 7 3 4 3 1 1 3 3		Manifest Document No. 3 1 1 3 3		2. Page 1 of 1	
3. Generator's Name and Mailing Address Varian Medical Systems, Inc c/o C B & I, 150 Royal Street Canton MA 02021 4. Generator's Phone ( 6 1 7 ) 5 8 9 - 6 1 0 2				Attn: Raymond Cadorette		A. Non-Hazardous Manifest Document Number NHZ001 31133	
5. Transporter 1 Company Name ENPRO SERVICES, INC.		6. US EPA ID Number M A D 9 8 0 6 7 0 0 0 4		B. S.G.I. (Gen. Site Address) 150 Sohier Road Beverly MA 01915		C. S.T.I. (Lic. Plate #)	
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone 978-465-1595		E. S.T.I. (Lic. Plate #)	
9. Designated Facility Name and Site Address ENPRO SERVICES OF MAINE, INC. 106 MAIN STREET SOUTH PORTLAND ME 04106		10. US EPA ID Number M E D 0 1 9 0 5 1 0 6 1 9		F. Transporter's Phone		G. State Facility's ID SAME	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers		13. Total Quantity		14. Unit Wt/Vol	
a. NON DOT, NON RCRA REGULATED MATERIAL		No. Type		1. Waste No.		State	
		003 DM 01800 P		NONE		NONE	
b.						State	
c.						State	
d.						State	
J. Additional Descriptions for Materials Listed Above (S) SOIL CUTTINGS; VMS-001; a. ME-0714-05070		b.		K. Handling Codes for Wastes Listed Above		Final	
c.		d.		Interim Final Interim Final		a. b. c. d.	
15. Special Handling Instructions and Additional Information ER CONTACT: ENPRO SERVICES, INC. - 24 HOURS - (800) 966-1102 1) // ENPRO PO: 28167		Point of Departure:		ENPRO JOB# 7872-14			
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, and all applicable state laws and regulations.							
Printed/Typed Name Raymond J. Cadorette Agent for VMS		Signature <i>[Signature]</i>		Month Day Year 10 25 14		Date	
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature <i>[Signature]</i>		Month Day Year 10 25 14		Date	
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature <i>[Signature]</i>		Month Day Year		Date	
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.							
Printed/Typed Name Mike Soren		Signature <i>[Signature]</i>		Month Day Year 10 25 14		Date	

ORIGINAL - RETURN TO GENERATOR

**APPENDIX D**

**DRILLING LOGS**



# Drilling Log

Monitoring Well **OB-45-DO**

Page: 1 of 2

Project Varian Beverly Owner Varian Medical Systems, Inc.  
 Location Building 5, 150 Sohier Road, Beverly, Massachusetts Proj. No. 150151  
 Surface Elev. 76.7 ft. Total Hole Depth 49.0 ft. North \_\_\_\_\_ East \_\_\_\_\_  
 Top of Casing 76.48 ft. Water Level Initial NA Static NA Diameter 4 in.  
 Screen: Dia 2 in. Length 15 ft. Type/Size PVC/Slot 0.010 in.  
 Casing: Dia 2 in. Length 34 ft. Type PVC  
 Fill Material Native, Bentonite, Grout, Sand Rig/Core Hollow Stem Auger  
 Drill Co. TDS Method Hollow Stem Auger  
 Driller G. Caovette Log By Dale Dailey Date 4/15/14 Permit # NA  
 Checked By R. Cadorette License No. \_\_\_\_\_

COMMENTS  
 ND = Not detected  
 \*PID response may have been due to moisture.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0							Hand clear to 5'
2						FILL	SAND and loose GRAVEL (Fill)
4							
6		ND	25%	23 32 35 28		CL	Light brown, dry, very stiff CLAY; some poorly sorted, coarse gravel
8							
10		ND	45%	15 27 30 30		CL	Gray, dry, boulder to 11.5'
12							Light brown, dry, very stiff CLAY to 12'
14							
16		ND	35%	18 30 28 30		CL	Light brown, damp, very stiff CLAY; some fine and coarse, poorly sorted gravel (1/4" to 3/4")
18							
20		ND	45%	17 35 28 35		CL	Light brown, damp, stiff, SANDY CLAY; some well sorted fine gravel
22							
24							

SHAW\_COMMERCIAL Rev: 8/9/13 2014\_BLDG5.GPJ IT\_CORP.GDT 6/12/14

Continued Next Page



# Drilling Log

Monitoring Well

**OB-45-DO**

Page: 2 of 2

Project Varian Beverly Owner Varian Medical Systems, Inc.

Location Building 5, 150 Sohier Road, Beverly, Massachusetts Proj. No. 150151

Depth (ft.)	Well Completion	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
24							<i>Continued</i>
26		ND	60%	29 50		SW	Light brown, damp, very hard, SAND; some well sorted fine gravel (spoon refusal at 26.5' - 27')
30		ND	40%	22 18 27 37		SW	Gray, dry, very hard, poorly sorted, coarse, SAND; some well sorted, coarse gravel
36		ND	25%	57 42 35 120		GC	Light gray, dry to slightly damp, coarse GRAVEL with some light brownish gray, interbedded clay lenses (approximately 0.5" - 1" in thickness)
40		ND	35%	13 120		SW	Brown, dry, medium SAND, some well sorted, coarse GRAVEL (spoon refusal at 41')
46		5.3*	30%	17 25 50		SW	Brown, wet, poorly sorted, medium SAND; some poorly sorted, fine gravel
50							End of exploration at 49 feet below surface grade

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# Drilling Log

Monitoring Well **OB-45-S**

Page: 1 of 1

Project Varian Beverly Owner Varian Medical Systems, Inc.  
 Location Building 5, 150 Sohier Road, Beverly, Massachusetts Proj. No. 150151  
 Surface Elev. 76.8 ft. Total Hole Depth 17.0 ft. North \_\_\_\_\_ East \_\_\_\_\_  
 Top of Casing 76.57 ft. Water Level Initial NA Static 11.4 ft. Diameter 4 in.  
 Screen: Dia 2 in. Length 10 ft. Type/Size PVC/Slot 0.010 in.  
 Casing: Dia 2 in. Length 5 ft. Type PVC  
 Fill Material Native, Bentonite, Grout, Sand Rig/Core Hollow Stem Auger  
 Drill Co. TDS Method Hollow Stem Auger  
 Driller G. Caovette Log By Dale Dailey Date 4/14/14 Permit # NA  
 Checked By R. Cadorette License No. \_\_\_\_\_

COMMENTS  
 ND = Not detected

Depth (ft.)	Well Completion	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0							Hand clear to 5'
2						FILL	SAND and loose GRAVEL (Fill)
4							
6		ND	40%	10 15 26 23		CL	Light brown, dry, very stiff CLAY; some poorly sorted, coarse gravel
8							
10		ND	25%	12 27		CL	Light brown, dry, very stiff CLAY; little fine gravel (Spoon refusal on potential boulder at 11.5')
12							
14							
16		ND	60%	15 22 32 35		CL	Light brown, damp, very stiff CLAY; some fine and coarse, poorly sorted gravel (1/4" to 1")
18							End of exploration at 17 feet below surface grade
20							
22							
24							

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# Drilling Log

## Vapor Extraction Well **BLDG3-SVE3**

Project Varian Beverly Owner Varian Medical Systems, Inc.  
 Location Building 5, 150 Sohier Road, Beverly, Massachusetts Proj. No. 152728  
 Surface Elev. NA Total Hole Depth 40.0 ft. North \_\_\_\_\_ East \_\_\_\_\_  
 Top of Casing NA Water Level Initial NA Static NA Diameter \_\_\_\_\_  
 Screen: Dia 3 in. Length 25 ft. Type/Size PVC/0.010 in.  
 Casing: Dia 3 in. Length 15 ft. Type PVC  
 Fill Material Native Rig/Core Ditch Witch 2720  
 Drill Co. Directional Technologies, Inc. Method Mud Rotary  
 Driller R. Jarex Log By Dale Dailey Date 9/15/14 Permit # NA  
 Checked By Raymond Cadorette License No. \_\_\_\_\_

**COMMENTS**  
 Note: Nature of method prevents soil sampling or head space. Soil description is a rough estimate based on slurry consistency. Head space measured as composite of drill cuttings upon well completion.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0		276.6					Foundation wall 6 inches concrete.
10						SM	Brown, SILTY SAND mixture with abundant gravel
20							
30							
40							
50							Horizontal well completed with screen, approximately 8 feet below building floor, to a distance of 40 feet from building foundation wall.
60							
70							
80							
90							
100							
110							
120							
130							



# Drilling Log

Vapor Extraction Well

**BLDG3-SVE4**

Page: 1 of 1

Project Varian Beverly Owner Varian Medical Systems, Inc.  
 Location Building 5, 150 Sohier Road, Beverly, Massachusetts Proj. No. 152728  
 Surface Elev. NA Total Hole Depth 110.0 ft. North \_\_\_\_\_ East \_\_\_\_\_  
 Top of Casing NA Water Level Initial NA Static NA Diameter \_\_\_\_\_  
 Screen: Dia 3 in. Length 40 ft. Type/Size PVC/0.010 in.  
 Casing: Dia 3 in. Length 70 ft. Type PVC  
 Fill Material Native Rig/Core Ditch Witch 2720  
 Drill Co. Directional Technologies, Inc. Method Mud Rotary  
 Driller R. Jarex Log By Dale Dailey Date 9/15/14 Permit # NA  
 Checked By Raymond Cadorette License No. \_\_\_\_\_

COMMENTS  
*Note: Nature of method prevents soil sampling or head space. Soil description is a rough estimate based on slurry consistency. Head space measured as composite of drill cuttings upon well completion.*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0							Foundation wall 6 inches concrete
10							
20							
30							
40							
50							Brown, dense, CLAYEY SAND, some gravel
60						SC	
70		417					
80							
90							
100							
110							Horizontal well completed with screen, approximately 8.5 feet below building floor, to a distance of 110 feet from building foundation wall.
120							
130							

CB&I LOGO Rev: 8/9/13 2014\_BLDG3.GPJ IT\_CORP.GDT 10/22/14

**APPENDIX E**

**GROUNDWATER GAUGING RESULTS, PHYSICAL PARAMETER DATA**

# WATER LEVEL MONITORING DATA

Former Varian Facility Site  
150 Sohier Road  
Beverly, Massachusetts

Location	Date	Reference Elevation (Feet)	Depth to Water (Feet)	Groundwater Elevation (Feet)	Notes
AP-12-BR	04/10/14	71.32	16.63	54.69	
AP-12-DO	04/10/14	71.30	9.99	61.31	
AP-12-S	04/10/14	71.44	7.17	64.27	
AP-13-DO	04/18/14	68.86	13.53	55.33	
AP-13-DO	07/21/14	68.86	15.58	53.28	DTB = 52.00'
AP-13-S	04/10/14	68.98	9.09	59.89	
AP-14-S	04/21/14	74.97	11.17	63.80	
AP-15-S	04/08/14	45.88	4.63	41.25	
AP-19	04/11/14	81.30	10.88	70.42	
AP-19	07/22/14	81.30	12.96	68.34	
AP-19	08/14/14	81.30	NM	NA	
AP-19	09/23/14	81.30	NM	NA	
AP-20	04/11/14	81.43	9.60	71.83	
AP-20	07/22/14	81.43	13.39	68.04	
AP-20	08/14/14	81.43	NM	NA	
AP-20	09/23/14	81.43	NM	NA	
AP-21	04/11/14	81.50	9.91	71.59	
AP-21	07/22/14	81.50	NM	NA	Well inaccessible.
AP-21	08/14/14	81.50	NM	NA	
AP-21	09/23/14	81.50	NM	NA	
AP-22	04/11/14	81.96	11.87	70.09	
AP-22	07/22/14	81.96	15.93	66.03	
AP-22	08/14/14	81.96	NM	NA	
AP-22	09/23/14	81.96	NM	NA	
AP-23-DO	04/18/14	69.46	9.97	59.49	
AP-23-DO	07/21/14	69.46	12.93	56.53	DTB = 48.62'
AP-24-DO	04/18/14	69.56	9.19	60.37	
AP-24-DO	07/21/14	69.56	11.84	57.72	DTB = 48.48'
AP-25-DO	04/18/14	65.58	2.04	63.54	
AP-25-DO	07/21/14	65.58	6.87	58.71	DTB = 47.81'
AP-26-DO	04/16/14	73.99	12.82	61.17	
AP-26-DO	07/22/14	73.99	14.81	59.18	
AP-26-DO	08/14/14	73.99	15.40	58.59	
AP-26-DO	09/23/14	73.99	16.37	57.62	
AP-27-DO	07/21/14	77.34	16.80	60.54	
AP-27-DO	07/22/14	77.34	16.80	60.54	
AP-27-DO	08/14/14	77.34	17.41	59.93	
AP-27-DO	09/23/14	77.34	18.69	58.65	

Feet = Measured below surface grade

NM = Not Measured

NA = Not Applicable

## WATER LEVEL MONITORING DATA (Continued)

Former Varian Facility Site  
150 Sohler Road  
Beverly, Massachusetts

Location	Date	Reference Elevation (Feet)	Depth to Water (Feet)	Groundwater Elevation (Feet)	Notes
AP-30R-DO	04/08/14	NA	18.46	NA	
AP-30R-DO	07/21/14	NA	NM	NA	
AP-32-DO	07/22/14	NA	NM	NA	
AP-32-DO	08/14/14	NA	NM	NA	
AP-32-DO	09/23/14	NA	NM	NA	
AP-33-DO	04/18/14	66.49	5.99	60.50	
AP-33-DO	07/21/14	66.49	9.40	57.09	DTB = 38.19'
AP-34-DO	04/18/14	68.33	7.86	60.47	
AP-34-DO	07/21/14	68.33	10.57	57.76	DTB = 36.81'
AP-35-DO	04/18/14	68.92	8.45	60.47	
AP-35-DO	07/21/14	68.92	11.26	57.66	DTB = 36.69'
APBIO-01	04/21/14	42.19	1.06	41.13	
B-2	04/11/14	80.40	2.07	78.33	
B-3	04/10/14	66.23	6.55	59.68	
BR-1_ZONE1	04/21/14	58.60	8.96	49.64	
BR-1_ZONE2	04/21/14	58.60	8.91	49.69	
BR-1_ZONE3	04/21/14	58.60	8.83	49.77	
BR-3_ZONE1	04/21/14	62.36	18.05	44.31	
BR-3_ZONE2	04/21/14	62.36	NM	NA	Obstruction at 20.30'.
BR-3_ZONE3	04/21/14	62.36	NM	NA	Obstruction at 10.30'.
BR-5_ZONE1	04/11/14	51.04	4.45	46.59	
BR-5_ZONE2	04/11/14	51.04	4.45	46.59	
BR-5_ZONE3	04/11/14	51.04	8.55	42.49	
BR-6_ZONE1	04/11/14	38.33	0.00	38.33	
BR-6_ZONE2	04/11/14	38.33	0.00	38.33	
BR-6_ZONE3	04/11/14	38.33	0.00	38.33	
BR-7_ZONE1	04/21/14	35.15	0.00	35.15	
BR-7_ZONE2	04/21/14	35.15	0.00	35.15	
BR-7_ZONE3	04/21/14	35.15	0.00	35.15	
BW-05	04/10/14	65.17	6.06	59.11	
BW-06	04/10/14	65.44	6.39	59.05	
BW-08	04/10/14	65.44	6.39	59.05	

Feet = Measured below surface grade

NM = Not Measured

NA = Not Applicable

## WATER LEVEL MONITORING DATA (Continued)

Former Varian Facility Site  
150 Sohier Road  
Beverly, Massachusetts

Location	Date	Reference Elevation (Feet)	Depth to Water (Feet)	Groundwater Elevation (Feet)	Notes
BW-09	04/10/14	65.30	6.48	58.82	
CL02-BR	04/11/14	62.79	5.40	57.39	DTB = 81.10'
CL02-BR	04/29/14	62.79	6.29	56.50	DTB = 81.10'
CL02-DO	07/22/14	62.76	8.07	54.69	
CL02-DO	08/14/14	62.76	7.93	54.83	
CL02-DO	09/23/14	62.76	8.80	53.96	
CL03-DO	04/09/14	50.40	8.61	41.79	
CL03-DO	07/22/14	50.40	9.43	40.97	
CL03-DO	08/14/14	50.40	9.71	40.69	
CL03-DO	09/23/14	50.40	10.43	39.97	
CL03-S	04/07/14	50.21	8.47	41.74	
CL04-BR	04/10/14	47.78	5.61	42.17	
CL04-DO	04/10/14	47.42	5.12	42.30	
CL06-BR	04/07/14	58.41	8.63	49.78	
CL06-DO	04/07/14	58.75	8.04	50.71	
CL08-BR_ZONE1	04/11/14	48.28	8.01	40.27	
CL08-BR_ZONE2	04/11/14	48.28	4.78	43.50	
CL08-BR_ZONE3	04/11/14	48.28	4.79	43.49	
CL08-DO	04/09/14	47.85	5.28	42.57	
CL09-BR_ZONE1	04/11/14	47.65	10.15	37.50	
CL09-BR_ZONE2	04/11/14	47.65	2.91	44.74	
CL09-BR_ZONE3	04/11/14	47.65	3.30	44.35	
CL09-DO	04/07/14	47.43	4.27	43.16	
CL10-BR	04/10/14	72.28	3.83	68.45	
CL10-DO	04/10/14	72.54	3.55	68.99	
CL10-DO	07/22/14	72.54	5.96	66.58	
CL10-DO	08/14/14	72.54	6.23	66.31	
CL10-DO	09/23/14	72.54	7.60	64.94	
CL10-S	04/10/14	72.54	3.72	68.82	
CL11-DO	04/11/14	68.72	18.58	50.14	
CL11-S	04/11/14	68.46	15.50	52.96	
GZ-1	04/08/14	48.28	6.68	41.60	
GZ-4	04/08/14	45.13	4.45	40.68	

Feet = Measured below surface grade

NM = Not Measured

NA = Not Applicable

## WATER LEVEL MONITORING DATA (Continued)

Former Varian Facility Site  
150 Sohier Road  
Beverly, Massachusetts

Location	Date	Reference Elevation (Feet)	Depth to Water (Feet)	Groundwater Elevation (Feet)	Notes
MW-002	04/11/14	80.08	11.09	68.99	
MW-002R	04/11/14	62.59	3.24	59.35	DTB = 42.35'
MW-002R	04/29/14	62.59	3.89	58.70	DTB = 10.75'
MW-003R	04/07/14	61.28	1.76	59.52	
MW-004	04/10/14	70.07	11.20	58.87	
MW-004R	04/11/14	62.63	2.99	59.64	DTB = 10.75'
MW-005	04/10/14	69.64	14.16	55.48	
MW-005R	04/07/14	62.96	3.64	59.32	
MW-008	04/10/14	68.96	10.09	58.87	
MW-009	04/08/14	63.48	3.15	60.33	
MW-009	07/21/14	63.48	5.70	57.78	DTB = 21.23'
MW-009A	04/10/14	63.86	4.45	59.41	
MW-013	04/09/14	69.11	8.86	60.25	
MW-014A	04/09/14	75.59	13.86	61.73	
MW-016	04/10/14	66.82	13.12	53.70	
MW-030	04/11/14	79.87	5.43	74.44	
MW-031	04/11/14	78.01	3.55	74.46	
MW-032	07/22/14	82.44	7.59	74.85	
MW-032	08/14/14	82.44	8.27	74.17	
MW-032	09/23/14	82.44	9.76	72.68	
MW-033B	04/11/14	91.16	1.98	89.18	
MW-034	04/09/14	35.30	0.00	35.30	
MW-036	04/07/14	52.64	10.95	41.69	
MW-2_32-TOZER	04/10/14	70.83	4.35	66.48	
MW-2_32-TOZER	07/22/14	70.83	7.16	63.67	
MW-2_32-TOZER	08/14/14	70.83	7.46	63.37	
MW-2_32-TOZER	09/23/14	70.83	8.46	62.37	
MW-4_32-TOZER	04/10/14	54.54	5.22	49.32	
MW-5_32-TOZER	04/10/14	54.61	5.57	49.04	
OB-04-DO	04/09/14	54.35	11.97	42.38	
OB-05-BR	04/08/14	49.01	7.26	41.75	
OB-05-DO	04/08/14	49.06	7.43	41.63	

Feet = Measured below surface grade

NM = Not Measured

NA = Not Applicable



## WATER LEVEL MONITORING DATA (Continued)

Former Varian Facility Site  
150 Sohier Road  
Beverly, Massachusetts

Location	Date	Reference Elevation (Feet)	Depth to Water (Feet)	Groundwater Elevation (Feet)	Notes
OB-06-BR	04/09/14	48.70	6.80	41.90	
OB-06-DO	04/09/14	49.21	7.24	41.97	
OB-08-DO	04/08/14	38.29	0.00	38.29	
OB-09-BR	04/10/14	65.25	7.95	57.30	
OB-09-DO	04/10/14	65.11	7.89	57.22	
OB-09-S	04/09/14	65.22	5.25	59.97	
OB-09-S	07/21/14	65.22	7.82	57.40	DTB = 20.99'
OB-10-BR	04/10/14	71.04	16.58	54.46	
OB-10-S	04/10/14	70.91	8.43	62.48	
OB-11-BR	04/09/14	75.37	20.03	55.34	
OB-11-DO	04/09/14	75.50	17.87	57.63	
OB-12-BR	07/22/14	73.67	20.54	53.13	
OB-12-BR	08/14/14	73.67	20.98	52.69	
OB-12-BR	09/23/14	73.67	21.63	52.04	
OB-12-DO	04/09/14	73.54	13.63	59.91	
OB-12-DO	07/22/14	73.54	15.96	57.58	
OB-12-DO	08/14/14	73.54	NM	NA	
OB-12-DO	09/23/14	73.54	NM	NA	
OB-12-S	04/09/14	73.46	11.45	62.01	
OB-14-DO	04/09/14	75.05	11.54	63.51	
OB-15-S	04/08/14	63.26	2.49	60.77	
OB-15-S	07/21/14	63.26	5.41	57.85	DTB = 19.66'
OB-16-BR	04/10/14	67.61	0.96	66.65	
OB-16-S	04/10/14	67.69	6.76	60.93	
OB-17-BR	04/07/14	49.19	4.84	44.35	
OB-17-DO	04/07/14	48.86	3.00	45.86	
OB-18-DO	04/08/14	45.10	3.29	41.81	
OB-18-S	04/08/14	44.98	3.37	41.61	
OB-19-DO	04/16/14	74.28	18.37	55.91	
OB-19-DO	07/22/14	74.28	16.78	57.50	
OB-19-DO	08/14/14	74.28	17.33	56.95	
OB-19-DO	09/23/14	74.28	18.24	56.04	
OB-19-S	04/21/14	73.96	7.33	66.63	

Feet = Measured below surface grade

NM = Not Measured

NA = Not Applicable

## WATER LEVEL MONITORING DATA (Continued)

Former Varian Facility Site  
150 Sohier Road  
Beverly, Massachusetts

Location	Date	Reference Elevation (Feet)	Depth to Water (Feet)	Groundwater Elevation (Feet)	Notes
OB-20-BR	04/21/14	43.85	2.62	41.23	
OB-20-DO	04/21/14	43.98	2.70	41.28	
OB-20-S	04/21/14	43.79	5.47	38.32	
OB-21-BR	04/21/14	43.88	2.78	41.10	
OB-21-DO	04/21/14	43.28	2.16	41.12	
OB-23-BR	04/07/14	56.48	8.14	48.34	
OB-24-S	04/10/14	44.24	0.36	43.88	
OB-25-BR	04/16/14	74.26	22.05	52.21	
OB-25-BR	07/22/14	74.26	23.22	51.04	
OB-25-BR	08/14/14	74.26	32.51	41.75	
OB-25-BR	09/23/14	74.26	NM	NA	
OB-25-DO	04/09/14	74.52	20.79	53.73	
OB-25-DO	07/21/14	74.52	22.71	51.81	DTB = 68.74'
OB-25-DO	07/22/14	74.52	22.73	51.79	
OB-25-DO	08/14/14	74.52	23.15	51.37	
OB-25-DO	09/23/14	74.52	23.78	50.74	
OB-26-BR	04/16/14	74.44	20.93	53.51	
OB-26-DO	04/16/14	74.48	13.58	60.90	
OB-27-BR	04/11/14	71.68	25.66	46.02	
OB-27-DO	07/22/14	72.06	23.39	48.67	
OB-27-DO	08/14/14	72.06	23.93	48.13	
OB-27-DO	09/23/14	72.06	25.04	47.02	
OB-28-BR	04/16/14	74.35	20.91	53.44	
OB-32-DO	04/21/14	75.70	11.32	64.38	
OB-34-DO	07/22/14	75.10	16.78	58.32	
OB-34-DO	08/14/14	75.10	18.50	56.60	
OB-34-DO	09/23/14	75.10	18.38	56.72	
OB-35-DO	04/21/14	81.41	9.75	71.66	
OB-35-DO	07/22/14	81.41	NM	NA	
OB-35-DO	08/14/14	81.41	NM	NA	
OB-35-DO	09/23/14	81.41	NM	NA	
OB-36-DO	04/21/14	75.92	14.42	61.50	
OB-37-DO	04/21/14	75.86	17.61	58.25	
OB-38-DO	04/11/14	77.45	6.40	71.05	
OB-39-DO	04/11/14	79.01	14.99	64.02	
OB-39-DO	07/22/14	79.01	18.57	60.44	
OB-39-DO	08/14/14	79.01	19.24	59.77	

Feet = Measured below surface grade

NM = Not Measured

NA = Not Applicable

## WATER LEVEL MONITORING DATA (Continued)

Former Varian Facility Site  
150 Sohier Road  
Beverly, Massachusetts

Location	Date	Reference Elevation (Feet)	Depth to Water (Feet)	Groundwater Elevation (Feet)	Notes
OB-39-DO	09/23/14	79.01	20.50	58.51	
OB-40-DO	04/11/14	80.26	15.74	64.52	
OB-41-S	04/08/14	33.26	4.11	29.15	
OB-42-S	04/09/14	51.40	5.03	46.37	
OB-43-S	04/08/14	52.58	4.35	48.23	
OB-44-S	04/21/14	81.49	6.50	74.99	
OB-44-S	07/22/14	81.49	7.08	74.41	
OB-44-S	08/14/14	81.49	7.58	73.91	
OB-44-S	09/23/14	81.49	7.31	74.18	
OB-45-DO	04/29/14	76.48	13.68	62.80	DTB = 41.10'
OB-45-DO	07/22/14	76.48	15.71	60.77	
OB-45-DO	08/14/14	76.48	16.29	60.19	
OB-45-S	04/29/14	76.57	8.77	67.80	DTB = 14.70'
OB-45-S	09/23/14	76.57	13.06	63.51	
P-09R	04/11/14	37.86	3.09	34.77	DTB = 4.54'
P-09R	04/29/14	37.86	3.54	34.32	DTB = 4.54'
P-11R	04/21/14	47.92	6.17	41.75	
P-19A	04/21/14	47.51	7.50	40.01	
P-20R	04/21/14	42.56	1.63	40.93	
RW-01_MW-18	04/09/14	63.32	7.42	55.90	
RW-01_MW-18	07/21/14	63.32	9.87	53.45	DTB = 36.68'
RW-22	04/09/14	75.15	20.54	54.61	
W-1	04/09/14	51.37	4.08	47.29	

Feet = Measured below surface grade

NM = Not Measured

NA = Not Applicable

## GROUNDWATER PHYSICAL PARAMETER DATA

**Former Varian Facility Site  
150 Sohier Road  
Beverly, Massachusetts**

Site ID	Date	Color	ORP (mV)	pH	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)
AP-13-DO	05/12/14	Clear	-48	6.77	0.001	19.24
AP-13-DO	07/21/14	Clear	--	--	--	--
AP-19	07/22/14	Clear	-17.4	7.40	0.300	0.80
AP-19	08/14/14	Dark Purple	--	--	--	--
AP-19	09/23/14	Light Purple	--	--	--	--
AP-20	07/22/14	Clear	-55.7	7.00	0.502	0.93
AP-20	08/14/14	Dark Purple	--	--	--	--
AP-20	09/23/14	Dark Purple	--	--	--	--
AP-21	08/14/14	Dark Purple	--	--	--	--
AP-21	09/23/14	Dark Purple	--	--	--	--
AP-22	07/22/14	Clear	--	--	--	--
AP-22	08/14/14	Dark Purple	--	--	--	--
AP-22	09/23/14	Dark Purple	--	--	--	--
AP-23-DO	05/12/14	Clear	-309.1	9.41	10.19	0.35
AP-23-DO	07/21/14	Clear	-130.6	6.52	5.327	0.38
AP-23-DO	09/23/14	Clear	--	--	--	--
AP-24-DO	05/12/14	Clear	-123	6.93	2.19	2.66
AP-24-DO	07/21/14	Clear	-165.7	7.28	2.152	0.44
AP-25-DO	07/21/14	Clear	-114.4	7.97	0.275	0.77
AP-26-DO	07/22/14	Clear	572.2	7.01	0.357	5.87
AP-26-DO	08/14/14	Clear	601.7	7.53	0.368	2.12
AP-26-DO	09/23/14	Clear	500.3	7.04	0.361	3.82
AP-27-DO	07/22/14	Clear	280.6	7.75	0.971	0.52
AP-27-DO	08/14/14	Clear	197.6	7.87	0.958	0.69
AP-27-DO	09/23/14	Clear	175.0	7.74	0.937	0.89
AP-30R-DO	07/21/14	Light Purple	--	--	--	--
AP-32-DO	07/22/14	Dark Purple	--	--	--	--
AP-33-DO	05/12/14	Clear	-212	6.69	4.50	1.58
AP-33-DO	07/21/14	Clear	-135.0	6.73	2.591	0.94
AP-34-DO	05/12/14	Clear	-162.9	6.55	2.62	0.54
AP-34-DO	07/21/14	Clear	-149.6	6.69	2.169	0.53
AP-35-DO	05/12/14	Clear	-215.2	6.26	2.19	29.64
AP-35-DO	07/21/14	Clear	-138.4	6.16	6.626	0.60
CL02-DO	07/22/14	Clear	234.7	5.52	2.283	1.11
CL02-DO	08/14/14	Clear	38.8	6.67	1.567	2.46
CL02-DO	09/23/14	Clear	-69.9	6.78	1.528	0.53
CL03-DO	07/22/14	Clear	246.7	6.28	0.160	0.39
CL03-DO	08/14/14	Clear	124.1	6.85	0.162	11.60
CL03-DO	09/23/14	Clear	67.3	6.92	0.164	0.82
CL10-DO	07/22/14	Clear	610.9	7.05	1.177	8.67
CL10-DO	08/14/14	Light Purple	--	--	--	--
CL10-DO	09/23/14	Light Purple	--	--	--	--

NOTES: -- = Not Analyzed  
mV=millivolts

ORP= Oxidation reduction potential  
S/m= Siemens per meter

Deg.C= Degrees Celcius

## GROUNDWATER PHYSICAL PARAMETER DATA

**Former Varian Facility Site  
150 Sohier Road  
Beverly, Massachusetts**

Site ID	Date	Color	ORP (mV)	pH	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)
MW-013	07/21/14	Clear	698.9	6.64	4.451	42.65
MW-032	07/22/14	Clear	113.8	7.01	0.042	0.58
MW-032	08/14/14	Clear	166.2	7.10	0.035	8.82
MW-032	09/23/14	Clear	-120.5	7.16	0.118	0.33
MW-2_32-TOZER	07/22/14	Clear	-72.2	6.57	3.008	0.95
MW-2_32-TOZER	08/14/14	Clear	16.3	6.31	3.430	0.12
MW-2_32-TOZER	09/23/14	Clear	19.9	6.64	3.275	0.67
OB-12-BR	07/22/14	Clear	91.0	9.60	0.097	0.89
OB-12-BR	08/14/14	Clear	62.9	9.78	0.098	0.53
OB-12-BR	09/23/14	Clear	13.6	10.19	0.100	0.95
OB-12-DO	07/22/14	Clear	221.7	7.77	0.347	35.33
OB-12-DO	08/14/14	Dark Purple	--	--	--	--
OB-12-DO	09/23/14	Dark Purple	--	--	--	--
OB-19-DO	07/22/14	Clear	-58.7	7.39	0.573	0.74
OB-19-DO	08/14/14	Clear	215.7	7.16	0.576	0.47
OB-19-DO	09/23/14	Clear	40.3	7.34	0.572	0.78
OB-25-BR	07/22/14	Clear	234.8	6.73	2.614	1.34
OB-25-BR	09/23/14	Dark Purple	--	--	--	--
OB-25-DO	07/21/14	Clear	147.0	7.84	0.482	32.64
OB-25-DO	07/22/14	Clear	147.0	7.84	0.482	32.64
OB-25-DO	08/14/14	Clear	354.6	8.21	0.468	5.86
OB-25-DO	09/23/14	Clear	367.8	7.91	0.450	26.48
OB-27-DO	07/22/14	Clear	336.0	6.29	1.328	1.67
OB-27-DO	08/14/14	Clear	129.2	6.70	1.293	0.52
OB-27-DO	09/23/14	Clear	23.5	6.40	1.246	0.80
OB-34-DO	07/22/14	Clear	502.6	7.86	0.341	3.04
OB-34-DO	08/14/14	Clear	486.8	7.77	0.365	2.42
OB-34-DO	09/23/14	Clear	462.1	8.63	0.348	4.61
OB-35-DO	07/22/14	Dark Purple	--	--	--	--
OB-35-DO	08/14/14	Dark Purple	--	--	--	--
OB-35-DO	09/23/14	Dark Purple	--	--	--	--
OB-39-DO	07/22/14	Clear	304.4	8.37	0.211	1.02
OB-39-DO	08/14/14	Clear	-91.4	7.91	0.304	0.36
OB-39-DO	09/23/14	Clear	216.3	8.05	0.531	0.49
OB-44-S	07/22/14	Clear	--	--	--	--
OB-44-S	08/14/14	Clear	--	--	--	--
OB-44-S	09/23/14	Clear	--	--	--	--
OB-45-DO	07/22/14	Clear	197.3	7.98	0.525	0.87
OB-45-DO	08/14/14	Clear	-161.4	7.88	0.527	0.30
OB-45-DO	09/23/14	Clear	223.6	7.99	0.297	0.56
RW-01_MW-18	05/12/14	Clear	-379	10.18	8.19	6.62
RW-01_MW-18	07/21/14	Clear	-401.4	9.98	5.733	0.15
UNNAMED_STREAM	07/22/14	Clear	--	--	--	--

NOTES: -- = Not Analyzed  
mV=millivolts

ORP= Oxidation reduction potential  
S/m= Siemens per meter

Deg.C= Degrees Celcius

# GROUNDWATER PHYSICAL PARAMETER DATA

Former Varian Facility Site  
150 Sohler Road  
Beverly, Massachusetts

Site ID	Date	Color	ORP (mV)	pH	Specific Conductance (mS/cm)	Dissolved Oxygen (mg/L)
UNNAMED_STREAM	08/14/14	Clear	--	--	--	--

NOTES: -- = Not Analyzed  
mV=millivolts

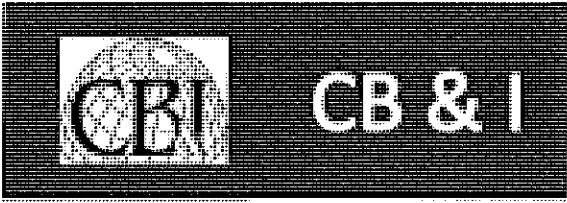
ORP= Oxidation reduction potential  
S/m= Siemens per meter

Deg.C= Degrees Celcius

**APPENDIX F**

**LABORATORY ANALYTICAL REPORTS**





**17 Princess Road**  
**Lawrenceville, NJ 08648**  
**Tel: 609/895-5370**  
**Fax: 609/895-1858**

**Reduced Deliverable Package**

**Prepared for**  
**Varian, Beverly MA**

**Lab ID**  
**9108**


**Project Number: 77150151 03000000**

**Samples Received**  
**9-Apr-14**

**Report**  
**30-Apr-14**

**NJDEP Certified Lab 11001**

---

  
**Randi K Rothmel, PhD**      **4-30-14**  
**Laboratory Director**      **Date**

## Table of Contents

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### 1.0 General Information

- Chain of custody
- Internal chains of custody
- Methodology Review
- Data Reporting Qualifiers

### 2.0 Sample Summary Results

### 3.0 QA/QC Report

---

## 1.0 General Information

---

Sample delivery Group      040914\_2

## Sample ID Table

---

Lab ID	Location ID
9108- 1	AP13-DO(51')
9108- 2	AP23-DO(48')
9108- 3	AP24-DO(47')
9108- 4	AP33-DO(36')
9108- 5	AP34-DO(36')
9108- 6	AP35-DO(35')
9108- 7	MW-9 (20')
9108- 8	OB15S (18')

---

**Chain of Custody (s)**

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## Methodology Review

### Dehalococcoides sp in groundwater

The microbial communities from the groundwater samples are screened for the presence of *Dehalococcoides* sp in groundwater by PCR-DNA methodology using a Roche Real-Time LightCycler PCR instrumentation according to internal SOP. Results are reported in units of cells/ml

Samples are filtered within 7 days of receipt using Sterivex filter cassette (mMILLIPORE SVGV010RS,0.22uM). Filters are then stored at -80°C until processed (cells lysed and DNA extracted) for performing qPCR to quantify *Dehalococcoides* sp DNA. The filter paper is placed in a bead beating tube and is extracted using the ZR Soil Microbe DNA MicroPrep (ZymoResearch) following the instructions provided by the Manufacture, and eluted in 100ul buffer. The number of *Dehalococcoides* sp in the samples is determined based on the number of chromosomes detected in 2 ul of the eluted DNA via qPCR using a RAPID Real-Time LightCycler PCR instrument. A negative control and standard curve is generated using known quantities of dehalococcoides DNA.

The standard curve is used to calculate the cells/ml in the test samples. Raw data is reported as a crossing threshold. Higher bacteria counts are associated with lower crossing thresholds



## Reporting Qualifiers

---

- U- The compound was not detected at the indicated PQL concentration.
  
  - J- Approximate concentration of the compound. Detection of compound above calculated MDL but below the PQL of the analytical method. 99% confidence that the compound is present.
  
  - D- Diluted sample
  
  - B- The analyte was observed in laboratory blank as well as the sample - for EPA SW856 8260b and EPA 624 analysis
  
  - E- Compound detected above the linear range of the curve. Value given is an estimated value.
-

## 2.0 Sample Results

---

Sample Information		
Lab ID	9108-01	Date Sampled 04/08/2014
Sample ID	AP13-DO (51')	Time Sampled 10:30
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 172.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	11	J	cells/ml	70	9	5.81	EISTLAW-ATL068
							crossing threshold= 31.1		

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameter under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

Sample Information		
Lab ID	9108-02	Date Sampled 04/08/2014
Sample ID	AP23-DO (48')	Time Sampled 9:00
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 211.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	9	J	cells/ml	57	8	4.74	EISTLAW-ATL068
						crossing threshold= 31.1			

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

Sample Information		
Lab ID	9108-03	Date Sampled 04/08/2014
Sample ID	AP24-DO (47')	Time Sampled 11:00
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 498.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	3	J	cells/ml	24	3	2.01	EISTLAW-ATL068
						crossing threshold= 31.4			

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

**Chicago Bridge and Iron**  
**Analytical and Treatability Laboratories**

17 Princess Road  
 Lawrenceville, New Jersey 08648  
 Tel; 609/895-5370  
 Fax: 609/895-1858

Sample Information		
Lab ID	9108-04	Date Sampled 04/08/2014
Sample ID	AP33-DO (36')	Time Sampled 12:00
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 131.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	92	U	cells/ml	92	12	7.63	EISTLAW-ATL068
crossing threshold= none - not detected									

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameter under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

**Chicago Bridge and Iron**  
**Analytical and Treatability Laboratories**

17 Princess Road  
 Lawrenceville, New Jersey 08648  
 Tel: 609/895-5370  
 Fax: 609/895-1858

Sample Information		
Lab ID	9108-05	Date Sampled 04/08/2014
Sample ID	AP34-DO (36')	Time Sampled 12:45
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 141.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	85	U	cells/ml	85	11	7.09	EISTLAW-ATL068
crossing threshold= >32 nondetect									

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

**Chicago Bridge and Iron**  
**Analytical and Treatability Laboratories**

17 Princess Road  
 Lawrenceville, New Jersey 08648  
 Tel: 609/895-5370  
 Fax: 609/895-1858

Sample Information		
Lab ID	9108-06	Date Sampled 04/08/2014
Sample ID	AP35-DO (35')	Time Sampled 13:30
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 130.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	92	U	cells/ml	92	12	7.69	EISTLAW-ATL068
crossing threshold= >32 nondetect									

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range



Sample Information		
Lab ID	9108-07	Date Sampled 04/08/2014
Sample ID	MW-9 (20')	Time Sampled 15:00
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 85.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	19	J	cells/ml	141	19	11.76	EISTLAW-ATL068
crossing threshold= 31.3									

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

Sample Information		
Lab ID	9108-08	Date Sampled 04/08/2014
Sample ID	OB15-S (18')	Time Sampled 14:00
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 80.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	150	U	cells/ml	150	20	12.50	EISTLAW-ATL068
crossing threshold= none- non detect									

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

## 3.0 QC Summary

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## Sample Batch:DHE

---

Lab ID	Analysis dates	QC batch
9108- 1	4/22/2014	042214-DHE
9108- 2	4/22/2014	042214-DHE
9108- 3	4/22/2014	042214-DHE
9108- 4	4/22/2014	042214-DHE
9108- 5	4/22/2014	042214-DHE
9108- 6	4/22/2014	042214-DHE
9108- 7	4/22/2014	042214-DHE
9108- 8	4/22/2014	042214-DHE

## Calibration Summary: DHE

Calibration Standard :

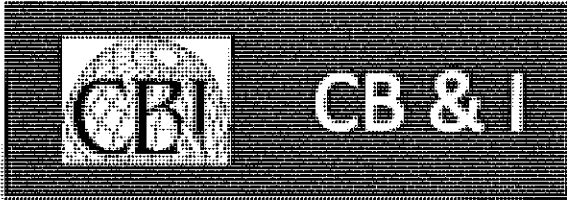
		Calibration Date:	4/22/2014	12:30
Sample:	expected copy number	Crossing Threshold	copies observed	
std 1	1.67E+08	7.6	112,000,000	
std 2	1.67E+07	10.2	19,800,000	
std 3	1.67E+06	13.1	2,870,000	
std 4	1.67E+05	16.9	229,000	
std6	1670	25.9	573	
std8	16	30.6	25	

curve =  $y=35.442-3.4597\log(x)$

$r^2=0.995$

## QC Method Blank Summary: DHE

QC Batch	Date	Time	Parameter	Result	Qualifier	Units	MDL
042214-DHE	4/22/2014	12:30	DHE	10	U	cells/ml	1.6



**17 Princess Road**  
**Lawrenceville, NJ 08648**  
**Tel: 609/895-5370**  
**Fax: 609/895-1858**

**Reduced Deliverable Package**

**Prepared for**  
**Varian, Beverly MA**

**Lab ID**  
**9187**

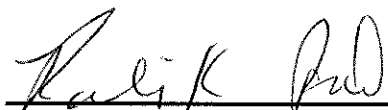
**Project Number: 77150151 03000000**

**Samples Received**  
**7-Aug-14**

**Report**  
**19-Aug-14**

**NJDEP Certified Lab 11001**

---

 *Randi K Rothmel* **8-19-14**  
**Randi K Rothmel, PhD**      **Date**  
**Laboratory Director**

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- Internal chains of custody
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---



## 1.0 General Information

---

## Sample ID Table

Lab ID	Location ID	SDG
9187- 1	AP23-DO(49')	080714_2
9187- 2	AP24-DO(46')	080714_2
9187- 3	AP33-DO(35')	080714_2
9187- 4	AP34-DO(33')	080714_2
9187- 5	AP35-DO(33')	080714_2

**Chain of Custody (s)**

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e-417080-905

Field Activity Daily Log

**DATE:** 7/27/07  
**PROJECT:** [illegible]  
**LOCATION:** [illegible]  
**TIME:** [illegible]

**ACTIVITY:** [illegible]

TIME	ACTIVITY	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
07:00	Arrive at site																								
07:30	Start work																								
08:00	Field observations																								
08:30	Sample collection																								
09:00	Equipment maintenance																								
09:30	Site cleanup																								
10:00	End of day																								

**REMARKS:** [illegible]

**TELEPHONE:** [illegible]

**WEATHER:** [illegible]

**MOON:** [illegible]

**WIND:** [illegible]

**TEMPERATURE:** [illegible]

**RELATIVE HUMIDITY:** [illegible]

**BAROMETRIC PRESSURE:** [illegible]

**WIND DIRECTION:** [illegible]

**WIND VELOCITY:** [illegible]

**WIND FORCE:** [illegible]

**WIND BURSTS:** [illegible]

**WIND GUSTS:** [illegible]

**WIND SQUALLS:** [illegible]

**WIND STRENGTH:** [illegible]

**WIND TYPE:** [illegible]

**WIND CHARACTER:** [illegible]

**WIND EFFECT:** [illegible]

**WIND DIRECTION:** [illegible]

**WIND VELOCITY:** [illegible]

**WIND FORCE:** [illegible]

**WIND BURSTS:** [illegible]

**WIND GUSTS:** [illegible]

**WIND SQUALLS:** [illegible]

**WIND STRENGTH:** [illegible]

**WIND TYPE:** [illegible]

**WIND CHARACTER:** [illegible]

**WIND EFFECT:** [illegible]

THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE

CBI -Federal Services Analytical and Treatability Laboratories Internal Chain of Custody

Lab ID 9187  
 Client Varian  
 Date Received: 8/11/14

Pg 1 of 1

Sample ID	Parameter	Bottle Type	Perservative	Date/Time Removed	Reinquishing Custodian Initials	Receiving Analyst Initials	Date/Time Returned	Receiving Custodian Initials	Reinquishing Analyst Initials
<del>1</del>	<del>Dehalocacetyl 5 L</del>	<del>IC</del>	<del>200</del>						
<del>2</del>	<del>↓</del>	<del>↓</del>	<del>↓</del>						
<del>3</del>	<del>↓</del>	<del>↓</del>	<del>↓</del>						
<del>4</del>	<del>↓</del>	<del>↓</del>	<del>↓</del>						
<del>5</del>	<del>↓</del>	<del>↓</del>	<del>↓</del>						
1	QPCR PCR	IC	—	8/11/14 9:00	PA	—	8/11/14 10:30	—	—
2	↓	↓	↓						
3	↓	↓	↓						
4	↓	↓	↓						
5	↓	↓	↓						
1	QPCR DHE	IC	—	8-13-14 10:00	QA	—	Requid. 8-13-14	QA	PA
2	↓	↓	↓						
3	↓	↓	↓						
4	↓	↓	↓						
5	↓	↓	↓						

## Methodology Review

---

### Dehalococcoides sp in groundwater

The microbial communities from the groundwater samples are screened for the presence of *Dehalococcoides* sp in groundwater by PCR-DNA methodology using a Roche Real-Time LightCycler PCR instrumentation according to internal SOP. Results are reported in units of cells/ml

Samples are filtered within 7 days of receipt using Sterivex filter cassette (mMILLIPORE SVGV010RS,0.22uM). Filters are then stored at -80°C until processed (cells lysed and DNA extracted) for performing qPCR to quantify *Dehalococcoides* sp DNA. The filter paper is placed in a bead beating tube and is extracted using the ZR Soil Microbe DNA MicroPrep (ZymoResearch) following the instructions provided by the Manufacture, and eluted in 100ul buffer. The number of *Dehalococcoides* sp in the samples is determined based on the number of chromosomes detected in 2 ul of the eluted DNA via qPCR using a RAPID Real-Time LightCycler PCR instrument. A negative control and standard curve is generated using known quantities of dehalococcoides DNA.

The standard curve is used to calculate the cells/ml in the test samples. Raw data is reported as a crossing threshold. Higher bacteria counts are associated with lower crossing thresholds

## Reporting Qualifiers

---

U- The compound was not detected at the indicated PQL concentration.

J- Approximate concentration of the compound. Detection of compound above calculated MDL but below the PQL of the analytical method. 99% confidence that the compound is present.

D- Diluted sample

B- The analyte was observed in laboratory blank as well as the sample - for EPA SW856 8260b and EPA 624 analysis

E- Compound detected above the linear range of the curve. Value given is an estimated value.

---

## 2.0 Sample Results

---



Sample Information		
Lab ID	9187-01	Date Sampled 08/06/2014
Sample ID	AP23-DO(46')	Time Sampled 10:30
		Date Received 08/07/2014
		Date Filtered 08/11/2014
Matrix	Aqueous	Amount Filtered (ml) 227.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Preparation Factor*	Method Code
DHE (1)	08/13/2014	11:00	3,170		cells/ml	10	1.6	4.41	EISTLAW-ATL068
crossing threshold= 21.7									

\* Preparaton factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified paramaters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

Sample Information		
Lab ID	9187-02	Date Sampled 08/06/2014
Sample ID	AP24-DO(46')	Time Sampled 12:00
		Date Received 08/07/2014
		Date Filtered 08/11/2014
Matrix	Aqueous	Amount Filtered (ml) 381.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Preparation Factor*	Method Code
DHE (1)	08/13/2014	11:00	5.6	J	cells/ml	10	1.6	2.62	EISTLAW-ATL068
crossing threshold= 29.2									

\* Preparaton factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified paramaters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

Sample Information		
Lab ID	9187-03	Date Sampled 08/06/2014
Sample ID	AP33-DO(35')	Time Sampled 13:00
		Date Received 08/07/2014
		Date Filtered 08/11/2014
Matrix	Aqueous	Amount Filtered (ml) 201.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Preparation Factor*	Method Code
DHE (1)	08/13/2014	11:00	10.0	U	cells/ml	10	1.6	4.98	EISTLAW-ATL068
								crossing threshold=	non detected, conc undetermined

\* Preparaton factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified paramaters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

Sample Information		
Lab ID	9187-04	Date Sampled 08/06/2014
Sample ID	AP34-DO(33')	Time Sampled 11:30
		Date Received 08/07/2014
		Date Filtered 08/11/2014
Matrix	Aqueous	Amount Filtered (ml) 190.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Preparation Factor*	Method Code
DHE (1)	08/13/2014	11:00	2.4	J	cells/ml	10	1.6	5.26	EISTLAW-ATL068
crossing threshold= 31.2									

\* Preparaton factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified paramaters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

Sample Information		
Lab ID	9187-05	Date Sampled 08/06/2014
Sample ID	AP35-DO(33')	Time Sampled 11:00
		Date Received 08/07/2014
		Date Filtered 08/11/2014
Matrix	Aqueous	Amount Filtered (ml) 274.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Preparation Factor*	Method Code
DHE (1)	08/13/2014	11:00	7.3	J	cells/ml	10	1.6	3.65	EISTLAW-ATL068
crossing threshold= 29.3									

\* Preparaton factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified paramaters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

## 3.0 QC Summary

---

## Sample Batch:DHE

---

<u>Lab ID</u>	<u>Analysis dates</u>	<u>QC batch</u>
9187- 1	8/13/2014	081314-DHE
9187- 2	8/13/2014	081314-DHE
9187- 3	8/13/2014	081314-DHE
9187- 4	8/13/2014	081314-DHE
9187- 5	8/13/2014	081314-DHE

## Calibration Summary: DHE

Calibration Standard :

Sample:	expected copy number	Crossing Threshold	copies observed
std 1	16,700,000	10.82	30400000
std 2	1670000	14.78	1440000
std 3	167000	18.06	115000
std 4	1670	20.62	15900
std6	167	28.92	26.5
std7	16.0	30.74	6.5
std8	1.6	32.19	2.1

curve =  $y=33.171-2.987\log(x)$

r2=0.9971



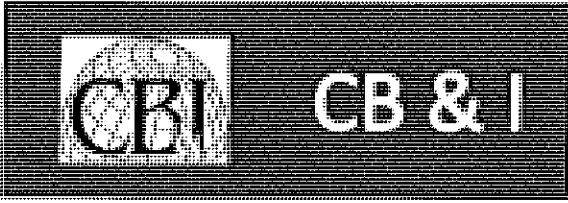
## QC Method Blank Summary: DHE

QC Batch	Date	Time	Parameter	Result	Qualifier	Units	MDL
081314-DHE	8/13/2014	13:50	DHE	10	U	cells/ml	1.6

## QC Positive Control Summary: DHE

QC Batch	Date	Time	Parameter	Result	Qualifier	Units	MDL
081314-DHE	8/13/2014	13:50	DHE	1920000		cells/ml	1.6

Positive control is SDC-9 at about OD=1



**17 Princess Road**  
**Lawrenceville, NJ 08648**  
**Tel: 609/895-5370**  
**Fax: 609/895-1858**

**Reduced Deliverable Package**

**Prepared for**  
**Varian, Beverly MA**

**Lab ID**  
**9198**


**Project Number: 77152728 05000000**

**Samples Received**  
**15-Aug-14**

**Report**  
**22-Aug-14**

**NJDEP Certified Lab 11001**

---

 8-22-14  
**Randi K Rothmel, PhD**      **Date**  
**Laboratory Director**

## Table of Contents

---

### 1.0 General Information

- Chain of custody
- Internal chains of custody
- Methodology Review
- Data Reporting Qualifiers

### 2.0 Sample Summary Results

### 3.0 QA/QC Report

---

## **1.0 General Information**

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## Sample ID Table

---

Lab ID	Location ID	SDG
9198- 1	AP13-DO(49)	081514_3

---

## **Chain of Custody (s)**

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# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

7186 SDG-081514-3

565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name <i>Varian</i>		Project Number <i>150151</i>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)													
Project Manager <i>Raymond Endornate</i>		Report CC		PRESERVATIVE		NUMBER OF CONTAINERS								REMARKS/ ALTERNATE DESCRIPTION			
Company/Address <i>CB: I 150 Royal St. Canton, MA 02021</i>		Email <i>Raymond.Endornate@alsonline.com</i>		METALS, TOTAL (List in comments below)		METALS, DISSOLVED (List in comments below)		PCBS 8082 & 608		PESTICIDES 8081 & 608		GC VOAS 8270 & 625		GC/MS SVOAS 8260 & 624 & CLP		Preservative Key 0. NONE 1. HCL 2. HNO3 3. H2SO4 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO4 8. Other	
Sample # <i>617-589-6102</i>		Sampler's Printed Name <i>Raymond Endornate</i>		FOR OFFICE USE ONLY LAB ID		DATE <i>8/16/14</i>		SAMPLING TIME <i>12:00</i>		MATRIX <i>GLW</i>		X					
CLIENT SAMPLE ID <i>AP13-DOL(49)</i>																	
SPECIAL INSTRUCTIONS/COMMENTS <i>Metals Missed Sample from 8/16/14 Contact Permille Haley for more info</i>		TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day _____ 2 day _____ 3 day _____ 4 day _____ 5 day _____ <i>Standard</i>		REPORT REQUIREMENTS I. Results Only _____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required) _____ III. Results + QC and Calibration Summaries _____ IV. Data Validation Report with Raw Data _____		INVOICE INFORMATION PO # _____ BILL TO: _____											
STATE WHERE SAMPLES WERE COLLECTED		RECEIVED BY <i>[Signature]</i>		RECEIVED BY		RECEIVED BY		RECEIVED BY		RECEIVED BY		RECEIVED BY		RECEIVED BY		RECEIVED BY	
Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>	
Printed Name <i>[Name]</i>		Printed Name <i>[Name]</i>		Printed Name <i>[Name]</i>		Printed Name <i>[Name]</i>		Printed Name <i>[Name]</i>		Printed Name <i>[Name]</i>		Printed Name <i>[Name]</i>		Printed Name <i>[Name]</i>		Printed Name <i>[Name]</i>	
Firm <i>[Firm]</i>		Firm <i>[Firm]</i>		Firm <i>[Firm]</i>		Firm <i>[Firm]</i>		Firm <i>[Firm]</i>		Firm <i>[Firm]</i>		Firm <i>[Firm]</i>		Firm <i>[Firm]</i>		Firm <i>[Firm]</i>	
Date/Time <i>[Date/Time]</i>		Date/Time <i>[Date/Time]</i>		Date/Time <i>[Date/Time]</i>		Date/Time <i>[Date/Time]</i>		Date/Time <i>[Date/Time]</i>		Date/Time <i>[Date/Time]</i>		Date/Time <i>[Date/Time]</i>		Date/Time <i>[Date/Time]</i>		Date/Time <i>[Date/Time]</i>	





## Methodology Review

### Dehalococcoides sp in groundwater

The microbial communities from the groundwater samples are screened for the presence of *Dehalococcoides* sp in groundwater by PCR-DNA methodology using a Roche Real-Time LightCycler PCR instrumentation according to internal SOP. Results are reported in units of cells/ml

Samples are filtered within 7 days of receipt using Sterivex filter cassette (mMILLIPORE SVGV010RS,0.22uM). Filters are then stored at -80°C until processed (cells lysed and DNA extracted) for performing qPCR to quantify *Dehalococcoides* sp DNA. The filter paper is placed in a bead beating tube and is extracted using the ZR Soil Microbe DNA MicroPrep (ZymoResearch) following the instructions provided by the Manufacture, and eluted in 100ul buffer. The number of *Dehalococcoides* sp in the samples is determined based on the number of chromosomes detected in 2 ul of the eluted DNA via qPCR using a RAPID Real-Time LightCycler PCR instrument. A negative control and standard curve is generated using known quantities of dehalococcoides DNA.

The standard curve is used to calculate the cells/ml in the test samples. Raw data is reported as a crossing threshold. Higher bacteria counts are associated with lower crossing thresholds

## Reporting Qualifiers

---

U- The compound was not detected at the indicated PQL concentration.

J- Approximate concentration of the compound. Detection of compound above calculated MDL but below the PQL of the analytical method. 99% confidence that the compound is present.

D- Diluted sample

B- The analyte was observed in laboratory blank as well as the sample - for EPA SW856 8260b and EPA 624 analysis

E- Compound detected above the linear range of the curve. Value given is an estimated value.

---

## 2.0 Sample Results

---

Sample Information		
Lab ID	9198-01	Date Sampled 08/14/2014
Sample ID	AP13-DO(49)	Time Sampled 12:00
		Date Received 08/15/2014
		Date Filtered 08/18/2014
Matrix	Aqueous	Amount Filtered (ml) 214.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Preparation Factor*	Method Code
DHE (1)	08/18/2014	14:03	42.0		cells/ml	10	1.6	4.67	EISTLAW-ATL068
crossing threshold= 28.5									

\* Preparaton factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified paramaters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

## 3.0 QC Summary

---

## Sample Batch:DHE

---

<u>Lab ID</u>	<u>Analysis dates</u>	<u>QC batch</u>
9198- 1	8/18/2014	081814-2DHE

## Calibration Summary: DHE

Calibration Standard :

Sample:	expected copy number	Crossing Threshold	copies observed
std 1	167,000,000	5.518	219000000
std 2	16,700,000	9.659	15400000
std 3	1670000	12.65	2280000
std 4	167000	16.78	162000
std 5	16700	20.94	11300
std6	1670	25.03	823
std7	167	27.88	133
std8	16.0	29.84	38

curve =  $y=35.516-36389\log(x)$

$r^2=0.9964$



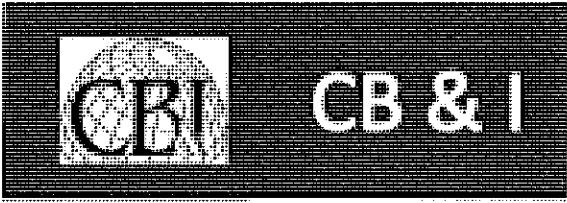
## QC Method Blank Summary: DHE

QC Batch	Date	Time	Parameter	Result	Qualifier	Units	MDL
081814-2DHE	8/18/2014	14:03	DHE	10	U	cells/ml	1.6

## QC Positive Control Summary: DHE

QC Batch	Date	Time	Parameter	Result	Qualifier	Units	MDL
081814-2DHE	8/18/2014	14:03	DHE	1260000		cells/ml	1.6

Positive control is SDC-9 at about OD=1



**17 Princess Road**  
**Lawrenceville, NJ 08648**  
**Tel: 609/895-5370**  
**Fax: 609/895-1858**

**Reduced Deliverable Package**

**Prepared for**  
**Varian, Beverly MA**

**Lab ID**  
**9108**


**Project Number: 77150151 03000000**

**Samples Received**  
**9-Apr-14**

**Report**  
**30-Apr-14**

**NJDEP Certified Lab 11001**

---

  
**Randi K Rothmel, PhD**      **4-30-14**  
**Laboratory Director**      **Date**

## Table of Contents

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### 1.0 General Information

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- Internal chains of custody
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### 2.0 Sample Summary Results

### 3.0 QA/QC Report

---

## 1.0 General Information

---

Sample delivery Group      040914\_2

## Sample ID Table

---

Lab ID	Location ID
9108- 1	AP13-DO(51')
9108- 2	AP23-DO(48')
9108- 3	AP24-DO(47')
9108- 4	AP33-DO(36')
9108- 5	AP34-DO(36')
9108- 6	AP35-DO(35')
9108- 7	MW-9 (20')
9108- 8	OB15S (18')

---

## **Chain of Custody (s)**

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## Methodology Review

### Dehalococcoides sp in groundwater

The microbial communities from the groundwater samples are screened for the presence of *Dehalococcoides* sp in groundwater by PCR-DNA methodology using a Roche Real-Time LightCycler PCR instrumentation according to internal SOP. Results are reported in units of cells/ml

Samples are filtered within 7 days of receipt using Sterivex filter cassette (mMILLIPORE SVGV010RS,0.22uM). Filters are then stored at -80°C until processed (cells lysed and DNA extracted) for performing qPCR to quantify *Dehalococcoides* sp DNA. The filter paper is placed in a bead beating tube and is extracted using the ZR Soil Microbe DNA MicroPrep (ZymoResearch) following the instructions provided by the Manufacture, and eluted in 100ul buffer. The number of *Dehalococcoides* sp in the samples is determined based on the number of chromosomes detected in 2 ul of the eluted DNA via qPCR using a RAPID Real-Time LightCycler PCR instrument. A negative control and standard curve is generated using known quantities of dehalococcoides DNA.

The standard curve is used to calculate the cells/ml in the test samples. Raw data is reported as a crossing threshold. Higher bacteria counts are associated with lower crossing thresholds

## Reporting Qualifiers

---

U- The compound was not detected at the indicated PQL concentration.

J- Approximate concentration of the compound. Detection of compound above calculated MDL but below the PQL of the analytical method. 99% confidence that the compound is present.

D- Diluted sample

B- The analyte was observed in laboratory blank as well as the sample - for EPA SW856 8260b and EPA 624 analysis

E- Compound detected above the linear range of the curve. Value given is an estimated value.

---

## 2.0 Sample Results

---

Sample Information		
Lab ID	9108-01	Date Sampled 04/08/2014
Sample ID	AP13-DO (51')	Time Sampled 10:30
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 172.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	11	J	cells/ml	70	9	5.81	EISTLAW-ATL068
							crossing threshold= 31.1		

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

Sample Information		
Lab ID	9108-02	Date Sampled 04/08/2014
Sample ID	AP23-DO (48')	Time Sampled 9:00
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 211.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	9	J	cells/ml	57	8	4.74	EISTLAW-ATL068
						crossing threshold= 31.1			

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

Sample Information		
Lab ID	9108-03	Date Sampled 04/08/2014
Sample ID	AP24-DO (47')	Time Sampled 11:00
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 498.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	3	J	cells/ml	24	3	2.01	EISTLAW-ATL068
						crossing threshold= 31.4			

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

- (1) Not listed as a Certified parameters under the NJDEP lab certification program.
- (2) Not available as a certified parameter under the NJDEP lab certification program.
- ( ) no qualification - sample run undiluted
- (U) Compound not detected above method practical quantitation limit.
- (D) Sample analyzed at indicated dilution
- (J) Estimated value above MDL and less than PQL
- (E) Estimated value beyond linear range

**Chicago Bridge and Iron**  
**Analytical and Treatability Laboratories**

17 Princess Road  
 Lawrenceville, New Jersey 08648  
 Tel; 609/895-5370  
 Fax: 609/895-1858

Sample Information		
Lab ID	9108-04	Date Sampled 04/08/2014
Sample ID	AP33-DO (36')	Time Sampled 12:00
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 131.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	92	U	cells/ml	92	12	7.63	EISTLAW-ATL068
crossing threshold= none - not detected									

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range



Sample Information		
Lab ID	9108-05	Date Sampled 04/08/2014
Sample ID	AP34-DO (36')	Time Sampled 12:45
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 141.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	85	U	cells/ml	85	11	7.09	EISTLAW-ATL068
crossing threshold= >32 nondetect									

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

- (1) Not listed as a Certified parameters under the NJDEP lab certification program.
- (2) Not available as a certified parameter under the NJDEP lab certification program.
- ( ) no qualification - sample run undiluted
- (U) Compound not detected above method practical quantitation limit.
- (D) Sample analyzed at indicated dilution
- (J) Estimated value above MDL and less than PQL
- (E) Estimated value beyond linear range

Sample Information		
Lab ID	9108-06	Date Sampled 04/08/2014
Sample ID	AP35-DO (35')	Time Sampled 13:30
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 130.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	92	U	cells/ml	92	12	7.69	EISTLAW-ATL068
crossing threshold= >32 nondetect									

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

- (1) Not listed as a Certified parameters under the NJDEP lab certification program.
- (2) Not available as a certified parameter under the NJDEP lab certification program.
- ( ) no qualification - sample run undiluted
- (U) Compound not detected above method practical quantitation limit.
- (D) Sample analyzed at indicated dilution
- (J) Estimated value above MDL and less than PQL
- (E) Estimated value beyond linear range

Sample Information		
Lab ID	9108-07	Date Sampled 04/08/2014
Sample ID	MW-9 (20')	Time Sampled 15:00
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 85.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	19	J	cells/ml	141	19	11.76	EISTLAW-ATL068
crossing threshold= 31.3									

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

Sample Information		
Lab ID	9108-08	Date Sampled 04/08/2014
Sample ID	OB15-S (18')	Time Sampled 14:00
		Date Received 04/09/2014
		Date Filtered 04/14/2014
Matrix	Aqueous	Amount Filtered (ml) 80.0

Analysis									
Parameter	Date Analyzed	Time analyze	Concentration	Qual (see below)	Units	PQL	MDL	Prep Factor*	Method Code
DHE (1)	04/22/2014	12:30	150	U	cells/ml	150	20	12.50	EISTLAW-ATL068
crossing threshold= none- non detect									

\* Preparation factor is based on volume actually filtered compared to maximum volume of 1,000 ml

NJDEP certified Lab ID 11001.

(1) Not listed as a Certified parameters under the NJDEP lab certification program.

(2) Not available as a certified parameter under the NJDEP lab certification program.

( ) no qualification - sample run undiluted

(U) Compound not detected above method practical quantitation limit.

(D) Sample analyzed at indicated dilution

(J) Estimated value above MDL and less than PQL

(E) Estimated value beyond linear range

## 3.0 QC Summary

---

## Sample Batch:DHE

---

Lab ID	Analysis dates	QC batch
9108- 1	4/22/2014	042214-DHE
9108- 2	4/22/2014	042214-DHE
9108- 3	4/22/2014	042214-DHE
9108- 4	4/22/2014	042214-DHE
9108- 5	4/22/2014	042214-DHE
9108- 6	4/22/2014	042214-DHE
9108- 7	4/22/2014	042214-DHE
9108- 8	4/22/2014	042214-DHE

## Calibration Summary: DHE

---

Calibration Standard :

---

Sample:	Calibration Date:		Crossing Threshold	copies observed
	expected copy number	4/22/2014 12:30		
std 1	1.67E+08	7.6	112,000,000	
std 2	1.67E+07	10.2	19,800,000	
std 3	1.67E+06	13.1	2,870,000	
std 4	1.67E+05	16.9	229,000	
std6	1670	25.9	573	
std8	16	30.6	25	

curve =  $y=35.442-3.4597\log(x)$

$r^2=0.995$

---

## QC Method Blank Summary: DHE

QC Batch	Date	Time	Parameter	Result	Qualifier	Units	MDL
042214-DHE	4/22/2014	12:30	DHE	10	U	cells/ml	1.6





September 25, 2014

Mr. Ray Cadorette  
CB& I - Canton - MA  
150 Royall Street  
Canton, MA 02021

## Certificate of Analysis

Revised Report - 9/25/2014 4:22:56 PM - See workorder comment section for explanation

Project Name: <b>Varian Air Samples</b>	Workorder: <b>2027489</b>
Purchase Order: <b>915904</b>	Workorder ID: <b>AER064 Varian - 152725</b>

Dear Mr. Cadorette:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, September 3, 2014.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vicki A. Forney (Project Coordinator) at (717) 944-5541.

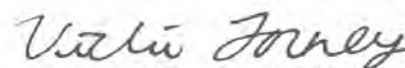
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Accounts Payable

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

Mrs. Vicki A. Forney  
Project Coordinator

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### SAMPLE SUMMARY

Workorder: 2027489 AER064|Varian - 152725

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2027489001	Bldg 5 - SVE Influent	Air	9/3/2014 11:15	9/3/2014 15:00	Collected by Client
2027489002	Bldg 5 - SVE 1	Air	9/3/2014 11:30	9/3/2014 15:00	Collected by Client
2027489003	Bldg 5 - SVE 2	Air	9/3/2014 12:00	9/3/2014 15:00	Collected by Client
2027489004	Bldg 5 - SVE 4	Air	9/3/2014 11:45	9/3/2014 15:00	Collected by Client

**Notes**

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".

**Standard Acronyms/Flags**

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit

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## PROJECT SUMMARY

Workorder: 2027489 AER064|Varian - 152725

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### Workorder Comments

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This report was modified to include the following statement. The samples were analyzed for a site list of Volatile Organics by EPA Method TO-15. No changes were made to the results. JSL 9/25/14

### Sample Comments

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**Lab ID:** 2027489002

**Sample ID:** Bldg 5 - SVE 1

**Sample Type:** SAMPLE

The reporting limits for the TO15 analytes were raised due to the dilution of the sample caused by the level of target compounds.

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### ANALYTICAL RESULTS

Workorder: 2027489 AER064|Varian - 152725

Lab ID: **2027489001**  
Sample ID: **Bldg 5 - SVE Influent**

Date Collected: 9/3/2014 11:15 Matrix: Air  
Date Received: 9/3/2014 15:00

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	13		ug/m3	0.5	TO-15		9/15/14 23:35	ECB	A
Benzene	ND		ug/m3	0.6	TO-15		9/15/14 23:35	ECB	A
Bromodichloromethane	ND		ug/m3	1	TO-15		9/15/14 23:35	ECB	A
Bromoform	ND		ug/m3	2	TO-15		9/15/14 23:35	ECB	A
Bromomethane	ND		ug/m3	0.8	TO-15		9/15/14 23:35	ECB	A
2-Butanone	5		ug/m3	0.6	TO-15		9/15/14 23:35	ECB	A
Carbon Disulfide	ND		ug/m3	0.6	TO-15		9/15/14 23:35	ECB	A
Carbon Tetrachloride	ND		ug/m3	1	TO-15		9/15/14 23:35	ECB	A
Chlorobenzene	ND		ug/m3	0.9	TO-15		9/15/14 23:35	ECB	A
Chlorodibromomethane	ND		ug/m3	2	TO-15		9/15/14 23:35	ECB	A
Chloroethane	ND		ug/m3	0.5	TO-15		9/15/14 23:35	ECB	A
Chloroform	ND		ug/m3	1	TO-15		9/15/14 23:35	ECB	A
Chloromethane	ND		ug/m3	0.4	TO-15		9/15/14 23:35	ECB	A
1,2-Dibromoethane	ND		ug/m3	2	TO-15		9/15/14 23:35	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	1	TO-15		9/15/14 23:35	ECB	A
1,3-Dichlorobenzene	ND		ug/m3	1	TO-15		9/15/14 23:35	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	1	TO-15		9/15/14 23:35	ECB	A
1,1-Dichloroethane	ND		ug/m3	0.8	TO-15		9/15/14 23:35	ECB	A
1,2-Dichloroethane	ND		ug/m3	0.8	TO-15		9/15/14 23:35	ECB	A
1,1-Dichloroethene	ND		ug/m3	0.8	TO-15		9/15/14 23:35	ECB	A
cis-1,2-Dichloroethene	14		ug/m3	0.8	TO-15		9/15/14 23:35	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		9/15/14 23:35	ECB	A
1,2-Dichloropropane	ND		ug/m3	0.9	TO-15		9/15/14 23:35	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		9/15/14 23:35	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		9/15/14 23:35	ECB	A
Ethylbenzene	ND		ug/m3	0.9	TO-15		9/15/14 23:35	ECB	A
Freon 113	2		ug/m3	2	TO-15		9/15/14 23:35	ECB	A
2-Hexanone	ND		ug/m3	0.8	TO-15		9/15/14 23:35	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	0.7	TO-15		9/15/14 23:35	ECB	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/m3	0.8	TO-15		9/15/14 23:35	ECB	A
Methylene Chloride	6	2	ug/m3	0.7	TO-15		9/15/14 23:35	ECB	A
Styrene	ND		ug/m3	0.8	TO-15		9/15/14 23:35	ECB	A
1,1,1,2-Tetrachloroethane	ND		ug/m3	1	TO-15		9/15/14 23:35	ECB	A
Tetrachloroethene	140		ug/m3	1	TO-15		9/15/14 23:35	ECB	A
Toluene	ND		ug/m3	0.8	TO-15		9/15/14 23:35	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	1	TO-15		9/15/14 23:35	ECB	A

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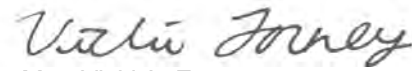
**ANALYTICAL RESULTS**

Workorder: 2027489 AER064|Varian - 152725

Lab ID: **2027489001**  
Sample ID: **Bldg 5 - SVE Influent**

Date Collected: 9/3/2014 11:15 Matrix: Air  
Date Received: 9/3/2014 15:00

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,2-Trichloroethane	ND		ug/m3	1	TO-15		9/15/14 23:35	ECB	A
Trichloroethene	390		ug/m3	11	TO-15		9/12/14 02:45	ECB	A
Trichlorofluoromethane	2	1	ug/m3	1	TO-15		9/15/14 23:35	ECB	A
Vinyl Acetate	ND		ug/m3	0.7	TO-15		9/15/14 23:35	ECB	A
Vinyl Chloride	ND		ug/m3	0.5	TO-15		9/15/14 23:35	ECB	A
o-Xylene	ND		ug/m3	0.9	TO-15		9/15/14 23:35	ECB	A
mp-Xylene	ND		ug/m3	2	TO-15		9/15/14 23:35	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	104		%	70 - 130	TO-15		9/15/14 23:35	ECB	A
4-Bromofluorobenzene (S)	105		%	70 - 130	TO-15		9/12/14 02:45	ECB	A

  
Mrs. Vicki A. Forney  
Project Coordinator

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### ANALYTICAL RESULTS

Workorder: 2027489 AER064|Varian - 152725

Lab ID: **2027489002**  
Sample ID: **Bldg 5 - SVE 1**

Date Collected: 9/3/2014 11:30 Matrix: Air  
Date Received: 9/3/2014 15:00

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	73		ug/m3	5	TO-15		9/15/14 20:49	ECB	A
Benzene	ND		ug/m3	6	TO-15		9/15/14 20:49	ECB	A
Bromodichloromethane	ND		ug/m3	13	TO-15		9/15/14 20:49	ECB	A
Bromoform	ND		ug/m3	21	TO-15		9/15/14 20:49	ECB	A
Bromomethane	ND		ug/m3	8	TO-15		9/15/14 20:49	ECB	A
2-Butanone	21		ug/m3	6	TO-15		9/15/14 20:49	ECB	A
Carbon Disulfide	ND		ug/m3	6	TO-15		9/15/14 20:49	ECB	A
Carbon Tetrachloride	ND		ug/m3	13	TO-15		9/15/14 20:49	ECB	A
Chlorobenzene	ND		ug/m3	9	TO-15		9/15/14 20:49	ECB	A
Chlorodibromomethane	ND		ug/m3	17	TO-15		9/15/14 20:49	ECB	A
Chloroethane	ND		ug/m3	5	TO-15		9/15/14 20:49	ECB	A
Chloroform	ND		ug/m3	10	TO-15		9/15/14 20:49	ECB	A
Chloromethane	ND		ug/m3	4	TO-15		9/15/14 20:49	ECB	A
1,2-Dibromoethane	ND		ug/m3	15	TO-15		9/15/14 20:49	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	12	TO-15		9/15/14 20:49	ECB	A
1,3-Dichlorobenzene	ND		ug/m3	12	TO-15		9/15/14 20:49	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	12	TO-15		9/15/14 20:49	ECB	A
1,1-Dichloroethane	ND		ug/m3	8	TO-15		9/15/14 20:49	ECB	A
1,2-Dichloroethane	ND		ug/m3	8	TO-15		9/15/14 20:49	ECB	A
1,1-Dichloroethene	ND		ug/m3	8	TO-15		9/15/14 20:49	ECB	A
cis-1,2-Dichloroethene	300		ug/m3	8	TO-15		9/15/14 20:49	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	8	TO-15		9/15/14 20:49	ECB	A
1,2-Dichloropropane	ND		ug/m3	9	TO-15		9/15/14 20:49	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	9	TO-15		9/15/14 20:49	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	9	TO-15		9/15/14 20:49	ECB	A
Ethylbenzene	ND		ug/m3	9	TO-15		9/15/14 20:49	ECB	A
Freon 113	40		ug/m3	15	TO-15		9/15/14 20:49	ECB	A
2-Hexanone	ND		ug/m3	8	TO-15		9/15/14 20:49	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	7	TO-15		9/15/14 20:49	ECB	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/m3	8	TO-15		9/15/14 20:49	ECB	A
Methylene Chloride	27	1	ug/m3	7	TO-15		9/15/14 20:49	ECB	A
Styrene	ND		ug/m3	8	TO-15		9/15/14 20:49	ECB	A
1,1,1,2-Tetrachloroethane	ND		ug/m3	14	TO-15		9/15/14 20:49	ECB	A
Tetrachloroethene	3000		ug/m3	320	TO-15		9/16/14 23:38	ECB	A
Toluene	ND		ug/m3	8	TO-15		9/15/14 20:49	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	11	TO-15		9/15/14 20:49	ECB	A

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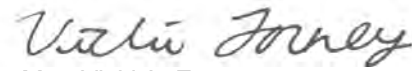
### ANALYTICAL RESULTS

Workorder: 2027489 AER064|Varian - 152725

Lab ID: **2027489002**  
Sample ID: **Bldg 5 - SVE 1**

Date Collected: 9/3/2014 11:30 Matrix: Air  
Date Received: 9/3/2014 15:00

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,2-Trichloroethane	ND		ug/m3	11	TO-15		9/15/14 20:49	ECB	A
Trichloroethene	30000		ug/m3	250	TO-15		9/16/14 23:38	ECB	A
Trichlorofluoromethane	ND		ug/m3	11	TO-15		9/15/14 20:49	ECB	A
Vinyl Acetate	ND		ug/m3	7	TO-15		9/15/14 20:49	ECB	A
Vinyl Chloride	ND		ug/m3	5	TO-15		9/15/14 20:49	ECB	A
o-Xylene	ND		ug/m3	9	TO-15		9/15/14 20:49	ECB	A
mp-Xylene	ND		ug/m3	17	TO-15		9/15/14 20:49	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	99		%	70 - 130	TO-15		9/16/14 23:38	ECB	A
4-Bromofluorobenzene (S)	113		%	70 - 130	TO-15		9/15/14 20:49	ECB	A



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Project Coordinator

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### ANALYTICAL RESULTS

Workorder: 2027489 AER064|Varian - 152725

Lab ID: **2027489003**  
Sample ID: **Bldg 5 - SVE 2**

Date Collected: 9/3/2014 12:00 Matrix: Air  
Date Received: 9/3/2014 15:00

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	15		ug/m3	0.5	TO-15		9/17/14 00:19	ECB	A
Benzene	ND		ug/m3	0.6	TO-15		9/17/14 00:19	ECB	A
Bromodichloromethane	ND		ug/m3	1	TO-15		9/17/14 00:19	ECB	A
Bromoform	ND		ug/m3	2	TO-15		9/17/14 00:19	ECB	A
Bromomethane	ND		ug/m3	0.8	TO-15		9/17/14 00:19	ECB	A
2-Butanone	10		ug/m3	0.6	TO-15		9/17/14 00:19	ECB	A
Carbon Disulfide	ND		ug/m3	0.6	TO-15		9/17/14 00:19	ECB	A
Carbon Tetrachloride	ND		ug/m3	1	TO-15		9/17/14 00:19	ECB	A
Chlorobenzene	ND		ug/m3	0.9	TO-15		9/17/14 00:19	ECB	A
Chlorodibromomethane	ND		ug/m3	2	TO-15		9/17/14 00:19	ECB	A
Chloroethane	ND		ug/m3	0.5	TO-15		9/17/14 00:19	ECB	A
Chloroform	ND		ug/m3	1	TO-15		9/17/14 00:19	ECB	A
Chloromethane	ND		ug/m3	0.4	TO-15		9/17/14 00:19	ECB	A
1,2-Dibromoethane	ND		ug/m3	2	TO-15		9/17/14 00:19	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	1	TO-15		9/17/14 00:19	ECB	A
1,3-Dichlorobenzene	ND		ug/m3	1	TO-15		9/17/14 00:19	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	1	TO-15		9/17/14 00:19	ECB	A
1,1-Dichloroethane	ND		ug/m3	0.8	TO-15		9/17/14 00:19	ECB	A
1,2-Dichloroethane	ND		ug/m3	0.8	TO-15		9/17/14 00:19	ECB	A
1,1-Dichloroethene	ND		ug/m3	0.8	TO-15		9/17/14 00:19	ECB	A
cis-1,2-Dichloroethene	9		ug/m3	0.8	TO-15		9/17/14 00:19	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		9/17/14 00:19	ECB	A
1,2-Dichloropropane	ND		ug/m3	0.9	TO-15		9/17/14 00:19	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		9/17/14 00:19	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		9/17/14 00:19	ECB	A
Ethylbenzene	ND		ug/m3	0.9	TO-15		9/17/14 00:19	ECB	A
Freon 113	ND		ug/m3	2	TO-15		9/17/14 00:19	ECB	A
2-Hexanone	ND		ug/m3	0.8	TO-15		9/17/14 00:19	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	0.7	TO-15		9/17/14 00:19	ECB	A
4-Methyl-2-Pentanone(MIBK)	2		ug/m3	0.8	TO-15		9/17/14 00:19	ECB	A
Methylene Chloride	5	1	ug/m3	0.7	TO-15		9/17/14 00:19	ECB	A
Styrene	ND		ug/m3	0.8	TO-15		9/17/14 00:19	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	1	TO-15		9/17/14 00:19	ECB	A
Tetrachloroethene	86		ug/m3	1	TO-15		9/17/14 00:19	ECB	A
Toluene	ND		ug/m3	0.8	TO-15		9/17/14 00:19	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	1	TO-15		9/17/14 00:19	ECB	A

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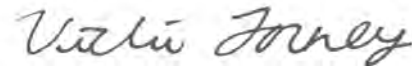
**ANALYTICAL RESULTS**

Workorder: 2027489 AER064|Varian - 152725

Lab ID: **2027489003**  
Sample ID: **Bldg 5 - SVE 2**

Date Collected: 9/3/2014 12:00 Matrix: Air  
Date Received: 9/3/2014 15:00

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,2-Trichloroethane	ND		ug/m3	1	TO-15		9/17/14 00:19	ECB	A
Trichloroethene	40		ug/m3	1	TO-15		9/17/14 00:19	ECB	A
Trichlorofluoromethane	2		ug/m3	1	TO-15		9/17/14 00:19	ECB	A
Vinyl Acetate	0.9		ug/m3	0.7	TO-15		9/17/14 00:19	ECB	A
Vinyl Chloride	ND		ug/m3	0.5	TO-15		9/17/14 00:19	ECB	A
o-Xylene	ND		ug/m3	0.9	TO-15		9/17/14 00:19	ECB	A
mp-Xylene	ND		ug/m3	2	TO-15		9/17/14 00:19	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	97		%	70 - 130	TO-15		9/17/14 00:19	ECB	A

  
Mrs. Vicki A. Forney  
Project Coordinator

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### ANALYTICAL RESULTS

Workorder: 2027489 AER064|Varian - 152725

Lab ID: **2027489004**  
Sample ID: **Bldg 5 - SVE 4**

Date Collected: 9/3/2014 11:45 Matrix: Air  
Date Received: 9/3/2014 15:00

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	40		ug/m3	0.5	TO-15		9/17/14 03:00	ECB	A
Benzene	ND		ug/m3	0.6	TO-15		9/17/14 03:00	ECB	A
Bromodichloromethane	ND		ug/m3	1	TO-15		9/17/14 03:00	ECB	A
Bromoform	ND		ug/m3	2	TO-15		9/17/14 03:00	ECB	A
Bromomethane	ND		ug/m3	0.8	TO-15		9/17/14 03:00	ECB	A
2-Butanone	16		ug/m3	0.6	TO-15		9/17/14 03:00	ECB	A
Carbon Disulfide	ND		ug/m3	0.6	TO-15		9/17/14 03:00	ECB	A
Carbon Tetrachloride	ND		ug/m3	1	TO-15		9/17/14 03:00	ECB	A
Chlorobenzene	ND		ug/m3	0.9	TO-15		9/17/14 03:00	ECB	A
Chlorodibromomethane	ND		ug/m3	2	TO-15		9/17/14 03:00	ECB	A
Chloroethane	ND		ug/m3	0.5	TO-15		9/17/14 03:00	ECB	A
Chloroform	ND		ug/m3	1	TO-15		9/17/14 03:00	ECB	A
Chloromethane	ND		ug/m3	0.4	TO-15		9/17/14 03:00	ECB	A
1,2-Dibromoethane	ND		ug/m3	2	TO-15		9/17/14 03:00	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	1	TO-15		9/17/14 03:00	ECB	A
1,3-Dichlorobenzene	ND		ug/m3	1	TO-15		9/17/14 03:00	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	1	TO-15		9/17/14 03:00	ECB	A
1,1-Dichloroethane	ND		ug/m3	0.8	TO-15		9/17/14 03:00	ECB	A
1,2-Dichloroethane	ND		ug/m3	0.8	TO-15		9/17/14 03:00	ECB	A
1,1-Dichloroethene	ND		ug/m3	0.8	TO-15		9/17/14 03:00	ECB	A
cis-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		9/17/14 03:00	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		9/17/14 03:00	ECB	A
1,2-Dichloropropane	ND		ug/m3	0.9	TO-15		9/17/14 03:00	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		9/17/14 03:00	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		9/17/14 03:00	ECB	A
Ethylbenzene	ND		ug/m3	0.9	TO-15		9/17/14 03:00	ECB	A
Freon 113	ND		ug/m3	2	TO-15		9/17/14 03:00	ECB	A
2-Hexanone	ND		ug/m3	0.8	TO-15		9/17/14 03:00	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	0.7	TO-15		9/17/14 03:00	ECB	A
4-Methyl-2-Pentanone(MIBK)	2		ug/m3	0.8	TO-15		9/17/14 03:00	ECB	A
Methylene Chloride	5	1	ug/m3	0.7	TO-15		9/17/14 03:00	ECB	A
Styrene	ND		ug/m3	0.8	TO-15		9/17/14 03:00	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	1	TO-15		9/17/14 03:00	ECB	A
Tetrachloroethene	59		ug/m3	1	TO-15		9/17/14 03:00	ECB	A
Toluene	ND		ug/m3	0.8	TO-15		9/17/14 03:00	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	1	TO-15		9/17/14 03:00	ECB	A

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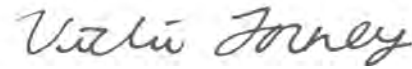
**ANALYTICAL RESULTS**

Workorder: 2027489 AER064|Varian - 152725

Lab ID: **2027489004**  
Sample ID: **Bldg 5 - SVE 4**

Date Collected: 9/3/2014 11:45 Matrix: Air  
Date Received: 9/3/2014 15:00

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,2-Trichloroethane	ND		ug/m3	1	TO-15		9/17/14 03:00	ECB	A
Trichloroethene	7		ug/m3	1	TO-15		9/17/14 03:00	ECB	A
Trichlorofluoromethane	2		ug/m3	1	TO-15		9/17/14 03:00	ECB	A
Vinyl Acetate	ND		ug/m3	0.7	TO-15		9/17/14 03:00	ECB	A
Vinyl Chloride	ND		ug/m3	0.5	TO-15		9/17/14 03:00	ECB	A
o-Xylene	ND		ug/m3	0.9	TO-15		9/17/14 03:00	ECB	A
mp-Xylene	ND		ug/m3	2	TO-15		9/17/14 03:00	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	100		%	70 - 130	TO-15		9/17/14 03:00	ECB	A

  
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**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
<b>2027489001</b>	1	Bldg 5 - SVE Influent	TO-15	Trichlorofluoromethane
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Trichlorofluoromethane. The % Recovery was reported as 148 and the control limits were 60 to 140.				
<b>2027489001</b>	2	Bldg 5 - SVE Influent	TO-15	Methylene Chloride
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 168 and the control limits were 60 to 140.				
<b>2027489002</b>	1	Bldg 5 - SVE 1	TO-15	Methylene Chloride
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 168 and the control limits were 60 to 140.				
<b>2027489003</b>	1	Bldg 5 - SVE 2	TO-15	Methylene Chloride
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 156 and the control limits were 60 to 140.				
<b>2027489004</b>	1	Bldg 5 - SVE 4	TO-15	Methylene Chloride
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 156 and the control limits were 60 to 140.				

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### MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 152725

Project Location: Varian

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**

2027489-001 to -004

Matrices: Groundwater/Surface Water    Soil/Sediment    Drinking Water    Air  Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC <input checked="" type="checkbox"/> CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="radio"/> Yes	<input type="radio"/> No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes	<input type="radio"/> No <input checked="" type="radio"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No <sup>1</sup>
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**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="radio"/> Yes	<input type="radio"/> No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes	<input checked="" type="radio"/> No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature: Jennifer M. Stanhope Lamoreux

Position: Reporting Manager

Printed Name: Jennifer M. Stanhope Lamoreux

Date: 09/24/2014



**ALS Environmental**



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**QUALITY CONTROL DATA**

**Workorder** 2027489 **Project Name** Varian - 152725

**QC Batch** TO15 / 2562

**QC Batch Method** TO-15 **Analysis Method** TO-15

**Associated Lab Samples** 2027489001

Parameter	Original Result	Qualifiers	Units	Spike Conc.
Trichloroethene		U	ug/m3	
Surrogate Recoveries				
4-Bromofluorobenzene				
<b>METHOD BLANK</b>				
Parameter	Blank Result	Qualifiers	Units	Reporting Limit
Trichloroethene	ND	U	ug/m3	1
Surrogate Recoveries				
4-Bromofluorobenzene			%	100
				70-130
<b>LABORATORY CONTROL SAMPLE</b>				
Parameter	LCS Result	Qualifiers	Units	Spike Conc.
Trichloroethene	1		ug/m3	1
Surrogate Recoveries				
4-Bromofluorobenzene			%	106
				70-130



QC Batch TO15 / 2563

QC Batch Method TO-15 Analysis Method TO-15

Associated Lab Samples 2027489001 2027489002

2071831

Parameter	Original Result	Qualifiers	Units	Spike Conc.
1,1,1-Trichloroethane		U	ug/m3	
1,1,1,2-Tetrachloroethane		U	ug/m3	
1,1,2-Trichloroethane		U	ug/m3	
1,1-Dichloroethane		U	ug/m3	
1,1-Dichloroethene		U	ug/m3	
1,2-Dibromoethane		U	ug/m3	
1,2-Dichlorobenzene		U	ug/m3	
1,2-Dichloroethane		U	ug/m3	
1,2-Dichloropropane		U	ug/m3	
1,3-Dichlorobenzene		U	ug/m3	
1,4-Dichlorobenzene		U	ug/m3	
2-Butanone		U	ug/m3	
2-Hexanone		U	ug/m3	
4-Methyl-2-Pentanone(MIBK)		U	ug/m3	
Acetone		U	ug/m3	
Benzene		U	ug/m3	
Bromodichloromethane		U	ug/m3	
Bromoform		U	ug/m3	
Bromomethane		U	ug/m3	
Carbon Disulfide		U	ug/m3	
Carbon Tetrachloride		U	ug/m3	
Chlorobenzene		U	ug/m3	
Chlorodibromomethane		U	ug/m3	
Chloroethane		U	ug/m3	
Chloroform		U	ug/m3	
Chloromethane		U	ug/m3	
cis-1,2-Dichloroethene		U	ug/m3	
cis-1,3-Dichloropropene		U	ug/m3	
Ethylbenzene		U	ug/m3	
Freon 113		U	ug/m3	
Methyl t-Butyl Ether		U	ug/m3	
Methylene Chloride		U	ug/m3	
mip-Xylene		U	ug/m3	
o-Xylene		U	ug/m3	

Styrene	U	ug/m3
Tetrachloroethene	U	ug/m3
Toluene	U	ug/m3
trans-1,2-Dichloroethene	U	ug/m3
trans-1,3-Dichloropropene	U	ug/m3
Trichloroethene	U	ug/m3
Trichlorofluoromethane	U	ug/m3
Vinyl Acetate	U	ug/m3
Vinyl Chloride	U	ug/m3

*Surrogate Recoveries*

4-Bromofluorobenzene

**METHOD BLANK**

2071829

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
1,1,1-Trichloroethane	ND	U	ug/m3	1		
1,1,2,2-Tetrachloroethane	ND	U	ug/m3	1		
1,1,2-Trichloroethane	ND	U	ug/m3	1		
1,1-Dichloroethane	ND	U	ug/m3	0.8		
1,1-Dichloroethene	ND	U	ug/m3	0.8		
1,2-Dibromoethane	ND	U	ug/m3	2		
1,2-Dichlorobenzene	ND	U	ug/m3	1		
1,2-Dichloroethane	ND	U	ug/m3	0.8		
1,2-Dichloropropane	ND	U	ug/m3	0.9		
1,3-Dichlorobenzene	ND	U	ug/m3	1		
1,4-Dichlorobenzene	ND	U	ug/m3	1		
2-Butanone	ND	U	ug/m3	0.6		
2-Hexanone	ND	U	ug/m3	0.8		
4-Methyl-2-Pentanone(MIBK)	ND	U	ug/m3	0.8		
Acetone	ND	U	ug/m3	0.5		
Benzene	ND	U	ug/m3	0.6		
Bromodichloromethane	ND	U	ug/m3	1		
Bromoform	ND	U	ug/m3	2		
Bromomethane	ND	U	ug/m3	0.8		
Carbon Disulfide	ND	U	ug/m3	0.6		
Carbon Tetrachloride	ND	U	ug/m3	1		
Chlorobenzene	ND	U	ug/m3	0.9		
Chlorodibromomethane	ND	U	ug/m3	2		
Chloroethane	ND	U	ug/m3	0.5		
Chloroform	ND	U	ug/m3	1		
Chloromethane	ND	U	ug/m3	0.4		
cis-1,2-Dichloroethane	ND	U	ug/m3	0.8		

Compound	Unit	Value	Rec Limits
cis-1,3-Dichloropropene	ug/m3	0.9	70-130
Ethylbenzene	ug/m3	0.9	
Freon 113	ug/m3	2	
Methyl t-Butyl Ether	ug/m3	0.7	
Methylene Chloride	ug/m3	0.7	
mp-Xylene	ug/m3	2	
o-Xylene	ug/m3	0.9	
Styrene	ug/m3	0.8	
Tetrachloroethene	ug/m3	1	
Toluene	ug/m3	0.8	
trans-1,2-Dichloroethene	ug/m3	0.8	
trans-1,3-Dichloropropene	ug/m3	0.9	
Trichloroethene	ug/m3	1	
Trichlorofluoromethane	ug/m3	1	
Vinyl Acetate	ug/m3	0.7	
Vinyl Chloride	ug/m3	0.5	
Surrogate Recoveries	%	100	
4-Bromofluorobenzene	%	100	

LABORATORY CONTROL SAMPLE 2071830

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
1,1,1-Trichloroethane	1		ug/m3	1	131	60-140
1,1,2,2-Tetrachloroethane	2		ug/m3	1	150*	60-140
1,1,2-Trichloroethane	1		ug/m3	1	135	60-140
1,1-Dichloroethane	1		ug/m3	0.8	139	60-140
1,1-Dichloroethene	1		ug/m3	0.8	124	60-140
1,2-Dibromoethane	2		ug/m3	2	128	60-140
1,2-Dichlorobenzene	2		ug/m3	1	158*	60-140
1,2-Dichloroethane	1		ug/m3	0.8	137	60-140
1,2-Dichloropropene	1		ug/m3	0.9	136	60-140
1,3-Dichlorobenzene	2		ug/m3	1	153*	60-140
1,4-Dichlorobenzene	2		ug/m3	1	154*	60-140
2-Butanone	0.7		ug/m3	0.6	123	60-140
2-Hexanone	1		ug/m3	0.8	119	60-140
4-Methyl-2-Pentanone(MIBK)	1		ug/m3	0.8	120	60-140
Acetone	0.6		ug/m3	0.5	122	60-140
Benzene	0.9		ug/m3	0.6	136	60-140
Bromodichloromethane	2		ug/m3	1	136	60-140
Bromoform	3		ug/m3	2	126	60-140
Bromomethane	1		ug/m3	0.8	147*	60-140
Carbon Disulfide	0.9		ug/m3	0.6	144*	60-140



This is an addendum to the Certificate of Analysis.

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Carbon Tetrachloride	2		ug/m3	1	145*	60-140
Chlorobenzene	1		ug/m3	0.9	137	60-140
Chlorodibromomethane	2		ug/m3	2	131	60-140
Chloroethane	0.7		ug/m3	0.5	132	60-140
Chloroform	1		ug/m3	1	140	60-140
Chloromethane	0.6		ug/m3	0.4	150*	60-140
cis-1,2-Dichloroethene	1		ug/m3	0.8	125	60-140
cis-1,3-Dichloropropene	1		ug/m3	0.9	121	60-140
Ethylbenzene	1		ug/m3	0.9	123	60-140
Freon 113	2		ug/m3	2	137	60-140
Methyl t-Butyl Ether	0.8		ug/m3	0.7	115	60-140
Methylene Chloride	1		ug/m3	0.7	168*	60-140
m-p-Xylene	2		ug/m3	2	125	60-140
o-Xylene	1		ug/m3	0.9	124	60-140
Styrene	1		ug/m3	0.9	117	60-140
Tetrachloroethene	2		ug/m3	1	126	60-140
Toluene	0.9		ug/m3	0.8	123	60-140
trans-1,2-Dichloroethene	1		ug/m3	0.8	125	60-140
trans-1,3-Dichloropropene	1		ug/m3	0.9	117	60-140
Trichloroethene	1		ug/m3	1	123	60-140
Trichlorofluoromethane	2		ug/m3	1	148*	60-140
Vinyl Acetate	0.9		ug/m3	0.7	123	60-140
Vinyl Chloride	0.8		ug/m3	0.5	149*	60-140
Surrogate Recoveries						
4-Bromofluorobenzene			%		103	70-130

QC Batch TO15 / 2564

QC Batch Method TO-15 Analysis Method TO-15

Associated Lab Samples 2027489002 2027489003 2027489004

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
METHOD BLANK						
1,1,1-Trichloroethane	ND	U	ug/m3	1		
1,1,2,2-Tetrachloroethane	ND	U	ug/m3	1		
1,1,2-Trichloroethane	ND	U	ug/m3	1		
1,1-Dichloroethane	ND	U	ug/m3	0.8		
1,1-Dichloroethene	ND	U	ug/m3	0.8		
1,2-Dibromoethane	ND	U	ug/m3	2		
1,2-Dichlorobenzene	ND	U	ug/m3	1		
1,2-Dichloroethane	ND	U	ug/m3	0.8		





Workorder	Project Name	Units	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
1,2-Dichloropropane	U	ug/m3	ND			0.9		
1,3-Dichlorobenzene	U	ug/m3	ND			1		
1,4-Dichlorobenzene	U	ug/m3	ND			1		
2-Butanone	U	ug/m3	ND			0.6		
2-Hexanone	U	ug/m3	ND			0.8		
4-Methyl-2-Pentanone(MIBK)	U	ug/m3	ND			0.8		
Acetone	U	ug/m3	ND			0.5		
Benzene	U	ug/m3	ND			0.6		
Bromodichloromethane	U	ug/m3	ND			1		
Bromoform	U	ug/m3	ND			2		
Bromomethane	U	ug/m3	ND			0.8		
Carbon Disulfide	U	ug/m3	ND			0.6		
Carbon Tetrachloride	U	ug/m3	ND			1		
Chlorobenzene	U	ug/m3	ND			0.9		
Chlorodibromomethane	U	ug/m3	ND			2		
Chloroethane	U	ug/m3	ND			0.5		
Chloroform	U	ug/m3	ND			1		
Chloromethane	U	ug/m3	ND			0.4		
cis-1,2-Dichloroethene	U	ug/m3	ND			0.8		
cis-1,3-Dichloropropene	U	ug/m3	ND			0.9		
Ethylbenzene	U	ug/m3	ND			0.9		
Freon 113	U	ug/m3	ND			2		
Methyl t-Butyl Ether	U	ug/m3	ND			0.7		
Methylene Chloride	U	ug/m3	ND			0.7		
m,p-Xylene	U	ug/m3	ND			2		
o-Xylene	U	ug/m3	ND			0.9		
Styrene	U	ug/m3	ND			0.8		
Tetrachloroethene	U	ug/m3	ND			1		
Toluene	U	ug/m3	ND			0.8		
trans-1,2-Dichloroethene	U	ug/m3	ND			0.8		
trans-1,3-Dichloropropene	U	ug/m3	ND			0.9		
Trichloroethene	U	ug/m3	ND			1		
Trichlorofluoromethane	U	ug/m3	ND			1		
Vinyl Acetate	U	ug/m3	ND			0.7		
Vinyl Chloride	U	ug/m3	ND			0.5		
Surragate Recoveries								
4-Bromofluorobenzene		%					98	70-130

LABORATORY CONTROL SAMPLE	2072448					
Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
1,1,1-Trichloroethane	1		ug/m3	1	113	60-140

Chemical Name	Quantity	Unit	Concentration	Limit
1,1,2,2-Tetrachloroethane	2	ug/m3	1	118
1,1,2-Trichloroethane	1	ug/m3	1	117
1,1-Dichloroethane	1	ug/m3	0.8	124
1,1-Dichloroethene	0.8	ug/m3	0.8	106
1,2-Dibromoethane	2	ug/m3	2	110
1,2-Dichlorobenzene	1	ug/m3	1	120
1,2-Dichloroethane	0.9	ug/m3	0.8	116
1,2-Dichloropropane	1	ug/m3	0.9	119
1,3-Dichlorobenzene	1	ug/m3	1	115
1,4-Dichlorobenzene	1	ug/m3	1	114
2-Butanone	0.7	ug/m3	0.5	114
2-Hexanone	0.8	ug/m3	0.8	98
4-Methyl-2-Pentanone(MIBK)	0.8	ug/m3	0.8	93
Acetone	0.4	ug/m3	0.5	94
Benzene	0.7	ug/m3	0.6	117
Bromodichloromethane	2	ug/m3	1	113
Bromoform	2	ug/m3	2	110
Bromomethane	0.9	ug/m3	0.8	117
Carbon Disulfide	0.7	ug/m3	0.6	119
Carbon Tetrachloride	1	ug/m3	1	112
Chlorobenzene	1	ug/m3	0.9	122
Chlorodibromomethane	2	ug/m3	2	113
Chloroethane	0.5	ug/m3	0.5	97
Chloroform	1	ug/m3	1	119
Chloromethane	0.5	ug/m3	0.4	114
cis-1,2-Dichloroethene	0.9	ug/m3	0.8	117
cis-1,3-Dichloropropene	0.9	ug/m3	0.9	102
Ethylbenzene	1	ug/m3	0.9	111
Freon 113	2	ug/m3	2	113
Methyl t-Butyl Ether	0.8	ug/m3	0.7	110
Methylene Chloride	1	ug/m3	0.7	156*
m,p-Xylene	2	ug/m3	2	107
o-Xylene	0.9	ug/m3	0.9	109
Styrene	0.9	ug/m3	0.9	101
Tetrachloroethene	1	ug/m3	1	105
Toluene	0.8	ug/m3	0.8	110
trans-1,2-Dichloroethene	0.9	ug/m3	0.8	111
trans-1,3-Dichloropropene	0.9	ug/m3	0.9	102
Trichloroethene	1	ug/m3	1	104
Trichlorofluoromethane	1	ug/m3	1	116
Vinyl Acetate	0.8	ug/m3	0.7	110
Vinyl Chloride	0.6	ug/m3	0.5	115



This is an addendum to the Certificate of Analysis.

Workorder

2027489

Project Name

Varian - 152725

Surrogate Recoveries  
4-Bromofluorobenzene

%

100

70-130

Standard Acronyms/Flags	Description
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPO	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
NC	Not Calculated
*	Result outside of QC limits
DIL	Dilution Factor

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2027489001	Bldg 5 - SVE Influent	TO-15	TO15 / 2562	TO-15	TO15 / 2562
2027489001	Bldg 5 - SVE Influent	TO-15	TO15 / 2563	TO-15	TO15 / 2563
2027489002	Bldg 5 - SVE 1	TO-15	TO15 / 2563	TO-15	TO15 / 2563
2027489002	Bldg 5 - SVE 1	TO-15	TO15 / 2564	TO-15	TO15 / 2564
2027489003	Bldg 5 - SVE 2	TO-15	TO15 / 2564	TO-15	TO15 / 2564
2027489004	Bldg 5 - SVE 4	TO-15	TO15 / 2564	TO-15	TO15 / 2564



October 24, 2014

Mr. Ray Cadorette  
CB& I - Canton - MA  
150 Royall Street  
Canton, MA 02021

## Certificate of Analysis

Revised Report - 10/24/2014 12:11:18 PM - See workorder comment section for explanation

Project Name:	<b>Varian Air Samples</b>	Workorder:	<b>2031370</b>
Purchase Order:	<b>915904</b>	Workorder ID:	<b>CVC001 Varian/152728</b>

Dear Mr. Cadorette:

Enclosed are the analytical results for samples received by the laboratory on Friday, September 26, 2014.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vicki A. Forney (Project Coordinator) at (717) 944-5541.

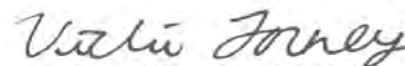
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Cathy Mainville

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

Mrs. Vicki A. Forney  
Project Coordinator

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### SAMPLE SUMMARY

Workorder: 2031370 CVC001|Varian/152728

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2031370001	Bldg 5-1	Air	9/24/2014 16:13	9/26/2014 09:30	Collected by Client
2031370002	Bldg 5-2	Air	9/24/2014 16:21	9/26/2014 09:30	Collected by Client
2031370003	Bldg 5-3	Air	9/24/2014 12:50	9/26/2014 09:30	Collected by Client
2031370004	Bldg 5-6	Air	9/24/2014 16:11	9/26/2014 09:30	Collected by Client
2031370005	Bldg 5-SV2	Air	9/24/2014 13:57	9/26/2014 09:30	Collected by Client
2031370006	Bldg 5-SV3	Air	9/24/2014 13:56	9/26/2014 09:30	Collected by Client
2031370007	Bldg 5-SV4	Air	9/24/2014 13:56	9/26/2014 09:30	Collected by Client
2031370008	Bldg 5-SV5	Air	9/24/2014 14:08	9/26/2014 09:30	Collected by Client
2031370009	Bldg 5-SV6	Air	9/24/2014 13:57	9/26/2014 09:30	Collected by Client

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## SAMPLE SUMMARY

Workorder: 2031370 CVC001|Varian/152728

### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".

### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit

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## PROJECT SUMMARY

Workorder: 2031370 CVC001|Varian/152728

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### Workorder Comments

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These reports were modified on 10/13/14 to change the analyte list. VLF  
This report was modified on 10/24/14 to add the QA/QC reports. BWK

### Sample Comments

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**Lab ID:** 2031370009

**Sample ID:** Bldg 5-SV6

**Sample Type:** SAMPLE

The reporting limits for the TO15 analytes were raised due to the dilution of the sample caused by the level of target compounds.

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370001**

Date Collected: 9/24/2014 16:13 Matrix: Air

Sample ID: **Bldg 5-1**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	310		ug/m3	5	TO-15		10/2/14 05:55	ECB	A
Benzene	ND		ug/m3	0.6	TO-15		10/2/14 18:18	ECB	A
Bromodichloromethane	ND		ug/m3	1	TO-15		10/2/14 18:18	ECB	A
Bromoform	ND		ug/m3	2	TO-15		10/2/14 18:18	ECB	A
Bromomethane	ND		ug/m3	0.8	TO-15		10/2/14 18:18	ECB	A
2-Butanone	340		ug/m3	6	TO-15		10/2/14 05:55	ECB	A
Carbon Tetrachloride	ND		ug/m3	1	TO-15		10/2/14 18:18	ECB	A
Chlorobenzene	ND		ug/m3	0.9	TO-15		10/2/14 18:18	ECB	A
Chlorodibromomethane	ND		ug/m3	2	TO-15		10/2/14 18:18	ECB	A
Chloroform	ND		ug/m3	1	TO-15		10/2/14 18:18	ECB	A
1,2-Dibromoethane	ND		ug/m3	2	TO-15		10/2/14 18:18	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	1	TO-15		10/2/14 18:18	ECB	A
1,3-Dichlorobenzene	ND		ug/m3	1	TO-15		10/2/14 18:18	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	1	TO-15		10/2/14 18:18	ECB	A
1,1-Dichloroethane	ND		ug/m3	0.8	TO-15		10/2/14 18:18	ECB	A
1,2-Dichloroethane	ND		ug/m3	0.8	TO-15		10/2/14 18:18	ECB	A
1,1-Dichloroethene	ND		ug/m3	0.8	TO-15		10/2/14 18:18	ECB	A
cis-1,2-Dichloroethene	1		ug/m3	0.8	TO-15		10/2/14 18:18	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/2/14 18:18	ECB	A
1,2-Dichloropropane	ND		ug/m3	0.9	TO-15		10/2/14 18:18	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/2/14 18:18	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/2/14 18:18	ECB	A
1,4-Dioxane	ND		ug/m3	0.7	TO-15		10/2/14 18:18	ECB	A
Ethylbenzene	2		ug/m3	0.9	TO-15		10/2/14 18:18	ECB	A
Hexachlorobutadiene	ND		ug/m3	2	TO-15		10/2/14 18:18	ECB	A
2-Hexanone	ND		ug/m3	0.8	TO-15		10/2/14 18:18	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	0.7	TO-15		10/2/14 18:18	ECB	A
4-Methyl-2-Pentanone(MIBK)	100		ug/m3	0.8	TO-15		10/2/14 18:18	ECB	A
Methylene Chloride	28	8	ug/m3	0.7	TO-15		10/2/14 18:18	ECB	A
Naphthalene	ND		ug/m3	1	TO-15		10/2/14 18:18	ECB	A
Styrene	ND		ug/m3	0.8	TO-15		10/2/14 18:18	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	1	TO-15		10/2/14 18:18	ECB	A
Tetrachloroethene	8		ug/m3	1	TO-15		10/2/14 18:18	ECB	A
Toluene	2		ug/m3	0.8	TO-15		10/2/14 18:18	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	1	TO-15		10/2/14 18:18	ECB	A
1,1,2-Trichloroethane	ND		ug/m3	1	TO-15		10/2/14 18:18	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370001**

Date Collected: 9/24/2014 16:13 Matrix: Air

Sample ID: **Bldg 5-1**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Trichloroethene	9		ug/m3	1	TO-15		10/2/14 18:18	ECB	A
Vinyl Chloride	ND		ug/m3	0.5	TO-15		10/2/14 18:18	ECB	A
o-Xylene	2		ug/m3	0.9	TO-15		10/2/14 18:18	ECB	A
mp-Xylene	8		ug/m3	2	TO-15		10/2/14 18:18	ECB	A
Acetone	130		ppbv	2.0	TO-15		10/2/14 05:55	ECB	A
Benzene	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Bromodichloromethane	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Bromoform	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Bromomethane	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
2-Butanone	120		ppbv	2.0	TO-15		10/2/14 05:55	ECB	A
tert-Butyl Alcohol	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Carbon Tetrachloride	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Chlorobenzene	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Chlorodibromomethane	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Chloroform	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
1,2-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
1,3-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
1,4-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
1,1-Dichloroethane	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
1,2-Dichloroethane	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
1,1-Dichloroethene	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
cis-1,2-Dichloroethene	0.26		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
trans-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
1,2-Dichloropropane	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
cis-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
trans-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
1,4-Dioxane	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Ethylbenzene	0.42		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Hexachlorobutadiene	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
2-Hexanone	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Methyl t-Butyl Ether	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
4-Methyl-2-Pentanone(MIBK)	25		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Methylene Chloride	7.9	7	ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Naphthalene	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Styrene	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
1,1,2,2-Tetrachloroethane	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Tetrachloroethene	1.2		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Toluene	0.53		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

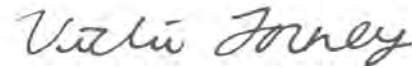
Lab ID: **2031370001**

Date Collected: 9/24/2014 16:13 Matrix: Air

Sample ID: **Bldg 5-1**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,1-Trichloroethane	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
1,1,2-Trichloroethane	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Trichloroethene	1.7		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
Vinyl Chloride	ND		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
o-Xylene	0.53		ppbv	0.20	TO-15		10/2/14 18:18	ECB	A
mp-Xylene	1.8		ppbv	0.40	TO-15		10/2/14 18:18	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	103		%	70 - 130	TO-15		10/2/14 05:55	ECB	A
4-Bromofluorobenzene (S)	106		%	70 - 130	TO-15		10/2/14 18:18	ECB	A



Mrs. Vicki A. Forney  
Project Coordinator

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370002**

Date Collected: 9/24/2014 16:21 Matrix: Air

Sample ID: **Bldg 5-2**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	110		ug/m3	5	TO-15		10/2/14 06:35	ECB	A
Benzene	ND		ug/m3	0.6	TO-15		10/2/14 19:00	ECB	A
Bromodichloromethane	ND		ug/m3	1	TO-15		10/2/14 19:00	ECB	A
Bromoform	ND		ug/m3	2	TO-15		10/2/14 19:00	ECB	A
Bromomethane	ND		ug/m3	0.8	TO-15		10/2/14 19:00	ECB	A
2-Butanone	220		ug/m3	6	TO-15		10/2/14 06:35	ECB	A
Carbon Tetrachloride	ND		ug/m3	1	TO-15		10/2/14 19:00	ECB	A
Chlorobenzene	ND		ug/m3	0.9	TO-15		10/2/14 19:00	ECB	A
Chlorodibromomethane	ND		ug/m3	2	TO-15		10/2/14 19:00	ECB	A
Chloroform	ND		ug/m3	1	TO-15		10/2/14 19:00	ECB	A
1,2-Dibromoethane	ND		ug/m3	2	TO-15		10/2/14 19:00	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	1	TO-15		10/2/14 19:00	ECB	A
1,3-Dichlorobenzene	ND		ug/m3	1	TO-15		10/2/14 19:00	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	1	TO-15		10/2/14 19:00	ECB	A
1,1-Dichloroethane	ND		ug/m3	0.8	TO-15		10/2/14 19:00	ECB	A
1,2-Dichloroethane	ND		ug/m3	0.8	TO-15		10/2/14 19:00	ECB	A
1,1-Dichloroethene	ND		ug/m3	0.8	TO-15		10/2/14 19:00	ECB	A
cis-1,2-Dichloroethene	0.9		ug/m3	0.8	TO-15		10/2/14 19:00	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/2/14 19:00	ECB	A
1,2-Dichloropropane	ND		ug/m3	0.9	TO-15		10/2/14 19:00	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/2/14 19:00	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/2/14 19:00	ECB	A
1,4-Dioxane	ND		ug/m3	0.7	TO-15		10/2/14 19:00	ECB	A
Ethylbenzene	1		ug/m3	0.9	TO-15		10/2/14 19:00	ECB	A
Hexachlorobutadiene	ND		ug/m3	2	TO-15		10/2/14 19:00	ECB	A
2-Hexanone	ND		ug/m3	0.8	TO-15		10/2/14 19:00	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	0.7	TO-15		10/2/14 19:00	ECB	A
4-Methyl-2-Pentanone(MIBK)	68		ug/m3	0.8	TO-15		10/2/14 19:00	ECB	A
Methylene Chloride	6	6	ug/m3	0.7	TO-15		10/2/14 19:00	ECB	A
Naphthalene	ND		ug/m3	1	TO-15		10/2/14 19:00	ECB	A
Styrene	ND		ug/m3	0.8	TO-15		10/2/14 19:00	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	1	TO-15		10/2/14 19:00	ECB	A
Tetrachloroethene	5		ug/m3	1	TO-15		10/2/14 19:00	ECB	A
Toluene	2		ug/m3	0.8	TO-15		10/2/14 19:00	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	1	TO-15		10/2/14 19:00	ECB	A
1,1,2-Trichloroethane	ND		ug/m3	1	TO-15		10/2/14 19:00	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370002**

Date Collected: 9/24/2014 16:21 Matrix: Air

Sample ID: **Bldg 5-2**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Trichloroethene	6		ug/m3	1	TO-15		10/2/14 19:00	ECB	A
Vinyl Chloride	ND		ug/m3	0.5	TO-15		10/2/14 19:00	ECB	A
o-Xylene	1		ug/m3	0.9	TO-15		10/2/14 19:00	ECB	A
mp-Xylene	5		ug/m3	2	TO-15		10/2/14 19:00	ECB	A
Acetone	46		ppbv	2.0	TO-15		10/2/14 06:35	ECB	A
Benzene	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Bromodichloromethane	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Bromoform	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Bromomethane	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
2-Butanone	75		ppbv	2.0	TO-15		10/2/14 06:35	ECB	A
Carbon Tetrachloride	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Chlorobenzene	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Chlorodibromomethane	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Chloroform	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
1,2-Dibromoethane	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
1,2-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
1,3-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
1,4-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
1,1-Dichloroethane	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
1,2-Dichloroethane	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
1,1-Dichloroethene	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
cis-1,2-Dichloroethene	0.23		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
trans-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
1,2-Dichloropropane	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
cis-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
trans-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
1,4-Dioxane	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Ethylbenzene	0.28		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Hexachlorobutadiene	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
2-Hexanone	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Methyl t-Butyl Ether	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
4-Methyl-2-Pentanone(MIBK)	17		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Methylene Chloride	1.6	5	ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Naphthalene	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Styrene	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
1,1,2,2-Tetrachloroethane	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Tetrachloroethene	0.80		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Toluene	0.58		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

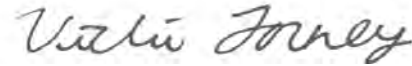
Lab ID: **2031370002**

Date Collected: 9/24/2014 16:21 Matrix: Air

Sample ID: **Bldg 5-2**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,1-Trichloroethane	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
1,1,2-Trichloroethane	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Trichloroethene	1.1		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
Vinyl Chloride	ND		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
o-Xylene	0.33		ppbv	0.20	TO-15		10/2/14 19:00	ECB	A
mp-Xylene	1.1		ppbv	0.40	TO-15		10/2/14 19:00	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	104		%	70 - 130	TO-15		10/2/14 19:00	ECB	A
4-Bromofluorobenzene (S)	107		%	70 - 130	TO-15		10/2/14 06:35	ECB	A



Mrs. Vicki A. Forney  
Project Coordinator

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**ANALYTICAL RESULTS**

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370003**

Date Collected: 9/24/2014 12:50 Matrix: Air

Sample ID: **Bldg 5-3**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	570		ug/m3	5	TO-15		10/2/14 13:26	ECB	A
Benzene	ND		ug/m3	0.6	TO-15		10/6/14 19:22	ECB	A
Bromodichloromethane	ND		ug/m3	1	TO-15		10/6/14 19:22	ECB	A
Bromoform	ND		ug/m3	2	TO-15		10/6/14 19:22	ECB	A
Bromomethane	ND		ug/m3	0.8	TO-15		10/6/14 19:22	ECB	A
2-Butanone	18		ug/m3	0.6	TO-15		10/6/14 19:22	ECB	A
Carbon Tetrachloride	ND		ug/m3	1	TO-15		10/6/14 19:22	ECB	A
Chlorobenzene	ND		ug/m3	0.9	TO-15		10/6/14 19:22	ECB	A
Chlorodibromomethane	ND		ug/m3	2	TO-15		10/6/14 19:22	ECB	A
Chloroform	ND		ug/m3	1	TO-15		10/6/14 19:22	ECB	A
1,2-Dibromoethane	ND		ug/m3	2	TO-15		10/6/14 19:22	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	1	TO-15		10/6/14 19:22	ECB	A
1,3-Dichlorobenzene	ND		ug/m3	1	TO-15		10/6/14 19:22	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	1	TO-15		10/6/14 19:22	ECB	A
1,1-Dichloroethane	ND		ug/m3	0.8	TO-15		10/6/14 19:22	ECB	A
1,2-Dichloroethane	ND		ug/m3	0.8	TO-15		10/6/14 19:22	ECB	A
1,1-Dichloroethene	ND		ug/m3	0.8	TO-15		10/6/14 19:22	ECB	A
cis-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/6/14 19:22	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/6/14 19:22	ECB	A
1,2-Dichloropropane	ND		ug/m3	0.9	TO-15		10/6/14 19:22	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/6/14 19:22	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/6/14 19:22	ECB	A
1,4-Dioxane	ND		ug/m3	0.7	TO-15		10/6/14 19:22	ECB	A
Ethylbenzene	ND		ug/m3	0.9	TO-15		10/6/14 19:22	ECB	A
Hexachlorobutadiene	ND		ug/m3	2	TO-15		10/6/14 19:22	ECB	A
2-Hexanone	ND		ug/m3	0.8	TO-15		10/6/14 19:22	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	0.7	TO-15		10/6/14 19:22	ECB	A
4-Methyl-2-Pentanone(MIBK)	5		ug/m3	0.8	TO-15		10/6/14 19:22	ECB	A
Methylene Chloride	57		ug/m3	0.7	TO-15		10/6/14 19:22	ECB	A
Naphthalene	ND		ug/m3	1	TO-15		10/6/14 19:22	ECB	A
Styrene	ND		ug/m3	0.8	TO-15		10/6/14 19:22	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	1	TO-15		10/6/14 19:22	ECB	A
Tetrachloroethene	ND		ug/m3	1	TO-15		10/6/14 19:22	ECB	A
Toluene	2		ug/m3	0.8	TO-15		10/6/14 19:22	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	1	TO-15		10/6/14 19:22	ECB	A
1,1,2-Trichloroethane	ND		ug/m3	1	TO-15		10/6/14 19:22	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370003**

Date Collected: 9/24/2014 12:50 Matrix: Air

Sample ID: **Bldg 5-3**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Trichloroethene	ND		ug/m3	1	TO-15		10/6/14 19:22	ECB	A
Vinyl Chloride	ND		ug/m3	0.5	TO-15		10/6/14 19:22	ECB	A
o-Xylene	ND		ug/m3	0.9	TO-15		10/6/14 19:22	ECB	A
mp-Xylene	2		ug/m3	2	TO-15		10/6/14 19:22	ECB	A
Acetone	240		ppbv	2.0	TO-15		10/2/14 13:26	ECB	A
Benzene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Bromodichloromethane	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Bromoform	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Bromomethane	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
2-Butanone	6.1		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Carbon Tetrachloride	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Chlorobenzene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Chlorodibromomethane	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Chloroform	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
1,2-Dibromoethane	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
1,2-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
1,3-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
1,4-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
1,1-Dichloroethane	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
1,2-Dichloroethane	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
1,1-Dichloroethene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
cis-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
trans-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
1,2-Dichloropropane	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
cis-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
trans-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
1,4-Dioxane	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Ethylbenzene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Hexachlorobutadiene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
2-Hexanone	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Methyl t-Butyl Ether	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
4-Methyl-2-Pentanone(MIBK)	1.1		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Methylene Chloride	17		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Naphthalene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Styrene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
1,1,2,2-Tetrachloroethane	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Tetrachloroethene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Toluene	0.65		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

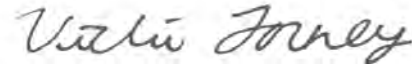
Lab ID: **2031370003**

Date Collected: 9/24/2014 12:50 Matrix: Air

Sample ID: **Bldg 5-3**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,1-Trichloroethane	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
1,1,2-Trichloroethane	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Trichloroethene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
Vinyl Chloride	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
o-Xylene	ND		ppbv	0.20	TO-15		10/6/14 19:22	ECB	A
mp-Xylene	0.47		ppbv	0.40	TO-15		10/6/14 19:22	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	98		%	70 - 130	TO-15		10/6/14 19:22	ECB	A
4-Bromofluorobenzene (S)	107		%	70 - 130	TO-15		10/2/14 13:26	ECB	A



Mrs. Vicki A. Forney  
Project Coordinator

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370004**

Date Collected: 9/24/2014 16:11 Matrix: Air

Sample ID: **Bldg 5-6**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	620		ug/m3	5	TO-15		10/2/14 17:38	ECB	A
Benzene	ND		ug/m3	0.6	TO-15		10/6/14 23:24	ECB	A
Bromodichloromethane	ND		ug/m3	1	TO-15		10/6/14 23:24	ECB	A
Bromoform	ND		ug/m3	2	TO-15		10/6/14 23:24	ECB	A
Bromomethane	ND		ug/m3	0.8	TO-15		10/6/14 23:24	ECB	A
2-Butanone	14		ug/m3	0.6	TO-15		10/6/14 23:24	ECB	A
Carbon Tetrachloride	ND		ug/m3	1	TO-15		10/6/14 23:24	ECB	A
Chlorobenzene	ND		ug/m3	0.9	TO-15		10/6/14 23:24	ECB	A
Chlorodibromomethane	ND		ug/m3	2	TO-15		10/6/14 23:24	ECB	A
Chloroform	ND		ug/m3	1	TO-15		10/6/14 23:24	ECB	A
1,2-Dibromoethane	ND		ug/m3	2	TO-15		10/6/14 23:24	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	1	TO-15		10/6/14 23:24	ECB	A
1,3-Dichlorobenzene	ND		ug/m3	1	TO-15		10/6/14 23:24	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	1	TO-15		10/6/14 23:24	ECB	A
1,1-Dichloroethane	ND		ug/m3	0.8	TO-15		10/6/14 23:24	ECB	A
1,2-Dichloroethane	ND		ug/m3	0.8	TO-15		10/6/14 23:24	ECB	A
1,1-Dichloroethene	ND		ug/m3	0.8	TO-15		10/6/14 23:24	ECB	A
cis-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/6/14 23:24	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/6/14 23:24	ECB	A
1,2-Dichloropropane	ND		ug/m3	0.9	TO-15		10/6/14 23:24	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/6/14 23:24	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/6/14 23:24	ECB	A
1,4-Dioxane	ND		ug/m3	0.7	TO-15		10/6/14 23:24	ECB	A
Ethylbenzene	1		ug/m3	0.9	TO-15		10/6/14 23:24	ECB	A
Hexachlorobutadiene	ND		ug/m3	2	TO-15		10/6/14 23:24	ECB	A
2-Hexanone	ND		ug/m3	0.8	TO-15		10/6/14 23:24	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	0.7	TO-15		10/6/14 23:24	ECB	A
4-Methyl-2-Pentanone(MIBK)	2		ug/m3	0.8	TO-15		10/6/14 23:24	ECB	A
Methylene Chloride	5		ug/m3	0.7	TO-15		10/6/14 23:24	ECB	A
Naphthalene	ND		ug/m3	1	TO-15		10/6/14 23:24	ECB	A
Styrene	ND		ug/m3	0.8	TO-15		10/6/14 23:24	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	1	TO-15		10/6/14 23:24	ECB	A
Tetrachloroethene	ND		ug/m3	1	TO-15		10/6/14 23:24	ECB	A
Toluene	4		ug/m3	0.8	TO-15		10/6/14 23:24	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	1	TO-15		10/6/14 23:24	ECB	A
1,1,2-Trichloroethane	ND		ug/m3	1	TO-15		10/6/14 23:24	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370004**

Date Collected: 9/24/2014 16:11 Matrix: Air

Sample ID: **Bldg 5-6**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Trichloroethene	ND		ug/m3	1	TO-15		10/6/14 23:24	ECB	A
Vinyl Chloride	ND		ug/m3	0.5	TO-15		10/6/14 23:24	ECB	A
o-Xylene	0.9		ug/m3	0.9	TO-15		10/6/14 23:24	ECB	A
mp-Xylene	4		ug/m3	2	TO-15		10/6/14 23:24	ECB	A
Acetone	260		ppbv	2.0	TO-15		10/2/14 17:38	ECB	A
Benzene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Bromodichloromethane	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Bromoform	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Bromomethane	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
2-Butanone	4.8		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Carbon Tetrachloride	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Chlorobenzene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Chlorodibromomethane	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Chloroform	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
1,2-Dibromoethane	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
1,2-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
1,3-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
1,4-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
1,1-Dichloroethane	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
1,2-Dichloroethane	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
1,1-Dichloroethene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
cis-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
trans-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
1,2-Dichloropropane	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
cis-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
trans-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
1,4-Dioxane	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Ethylbenzene	0.24		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Hexachlorobutadiene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
2-Hexanone	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Methyl t-Butyl Ether	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
4-Methyl-2-Pentanone(MIBK)	0.57		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Methylene Chloride	1.3		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Naphthalene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Styrene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
1,1,2,2-Tetrachloroethane	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Tetrachloroethene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Toluene	0.95		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

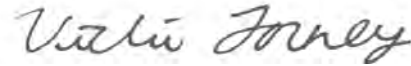
Lab ID: **2031370004**

Date Collected: 9/24/2014 16:11 Matrix: Air

Sample ID: **Bldg 5-6**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,1-Trichloroethane	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
1,1,2-Trichloroethane	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Trichloroethene	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
Vinyl Chloride	ND		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
o-Xylene	0.20		ppbv	0.20	TO-15		10/6/14 23:24	ECB	A
mp-Xylene	0.97		ppbv	0.40	TO-15		10/6/14 23:24	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	95		%	70 - 130	TO-15		10/6/14 23:24	ECB	A
4-Bromofluorobenzene (S)	106		%	70 - 130	TO-15		10/2/14 17:38	ECB	A



Mrs. Vicki A. Forney  
Project Coordinator

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370005**

Date Collected: 9/24/2014 13:57 Matrix: Air

Sample ID: **Bldg 5-SV2**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	190		ug/m3	5	TO-15		10/2/14 19:42	ECB	A
Benzene	1		ug/m3	0.6	TO-15		10/7/14 01:25	ECB	A
Bromodichloromethane	ND		ug/m3	1	TO-15		10/7/14 01:25	ECB	A
Bromoform	ND		ug/m3	2	TO-15		10/7/14 01:25	ECB	A
Bromomethane	ND		ug/m3	0.8	TO-15		10/7/14 01:25	ECB	A
2-Butanone	230		ug/m3	6	TO-15		10/2/14 19:42	ECB	A
Carbon Tetrachloride	ND		ug/m3	1	TO-15		10/7/14 01:25	ECB	A
Chlorobenzene	ND		ug/m3	0.9	TO-15		10/7/14 01:25	ECB	A
Chlorodibromomethane	ND		ug/m3	2	TO-15		10/7/14 01:25	ECB	A
Chloroform	ND		ug/m3	1	TO-15		10/7/14 01:25	ECB	A
1,2-Dibromoethane	ND		ug/m3	2	TO-15		10/7/14 01:25	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	1	TO-15		10/7/14 01:25	ECB	A
1,3-Dichlorobenzene	6		ug/m3	1	TO-15		10/7/14 01:25	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	1	TO-15		10/7/14 01:25	ECB	A
1,1-Dichloroethane	ND		ug/m3	0.8	TO-15		10/7/14 01:25	ECB	A
1,2-Dichloroethane	ND		ug/m3	0.8	TO-15		10/7/14 01:25	ECB	A
1,1-Dichloroethene	ND		ug/m3	0.8	TO-15		10/7/14 01:25	ECB	A
cis-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/7/14 01:25	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/7/14 01:25	ECB	A
1,2-Dichloropropane	ND		ug/m3	0.9	TO-15		10/7/14 01:25	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/7/14 01:25	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/7/14 01:25	ECB	A
1,4-Dioxane	ND		ug/m3	0.7	TO-15		10/7/14 01:25	ECB	A
Ethylbenzene	10		ug/m3	0.9	TO-15		10/7/14 01:25	ECB	A
Hexachlorobutadiene	ND		ug/m3	2	TO-15		10/7/14 01:25	ECB	A
2-Hexanone	3		ug/m3	0.8	TO-15		10/7/14 01:25	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	0.7	TO-15		10/7/14 01:25	ECB	A
4-Methyl-2-Pentanone(MIBK)	62		ug/m3	0.8	TO-15		10/7/14 01:25	ECB	A
Methylene Chloride	5		ug/m3	0.7	TO-15		10/7/14 01:25	ECB	A
Naphthalene	ND		ug/m3	1	TO-15		10/7/14 01:25	ECB	A
Styrene	ND		ug/m3	0.8	TO-15		10/7/14 01:25	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	1	TO-15		10/7/14 01:25	ECB	A
Tetrachloroethene	4		ug/m3	1	TO-15		10/7/14 01:25	ECB	A
Toluene	27		ug/m3	0.8	TO-15		10/7/14 01:25	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	1	TO-15		10/7/14 01:25	ECB	A
1,1,2-Trichloroethane	ND		ug/m3	1	TO-15		10/7/14 01:25	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370005**

Date Collected: 9/24/2014 13:57 Matrix: Air

Sample ID: **Bldg 5-SV2**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Trichloroethene	13		ug/m3	1	TO-15		10/7/14 01:25	ECB	A
Vinyl Chloride	ND		ug/m3	0.5	TO-15		10/7/14 01:25	ECB	A
o-Xylene	15		ug/m3	0.9	TO-15		10/7/14 01:25	ECB	A
mp-Xylene	39		ug/m3	2	TO-15		10/7/14 01:25	ECB	A
Acetone	82		ppbv	2.0	TO-15		10/2/14 19:42	ECB	A
Benzene	0.39		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Bromodichloromethane	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Bromoform	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Bromomethane	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
2-Butanone	79		ppbv	2.0	TO-15		10/2/14 19:42	ECB	A
Carbon Tetrachloride	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Chlorobenzene	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Chlorodibromomethane	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Chloroform	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
1,2-Dibromoethane	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
1,2-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
1,3-Dichlorobenzene	0.96		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
1,4-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
1,1-Dichloroethane	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
1,2-Dichloroethane	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
1,1-Dichloroethene	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
cis-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
trans-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
1,2-Dichloropropane	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
cis-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
trans-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
1,4-Dioxane	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Ethylbenzene	2.3		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Hexachlorobutadiene	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
2-Hexanone	0.77		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Methyl t-Butyl Ether	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
4-Methyl-2-Pentanone(MIBK)	15		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Methylene Chloride	1.6		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Naphthalene	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Styrene	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
1,1,2,2-Tetrachloroethane	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Tetrachloroethene	0.53		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Toluene	7.1		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

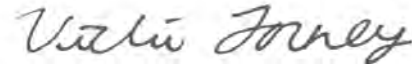
Lab ID: **2031370005**

Date Collected: 9/24/2014 13:57 Matrix: Air

Sample ID: **Bldg 5-SV2**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,1-Trichloroethane	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
1,1,2-Trichloroethane	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Trichloroethene	2.5		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
Vinyl Chloride	ND		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
o-Xylene	3.4		ppbv	0.20	TO-15		10/7/14 01:25	ECB	A
mp-Xylene	9.0		ppbv	0.40	TO-15		10/7/14 01:25	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	106		%	70 - 130	TO-15		10/7/14 01:25	ECB	A
4-Bromofluorobenzene (S)	106		%	70 - 130	TO-15		10/2/14 19:42	ECB	A



Mrs. Vicki A. Forney  
Project Coordinator

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370006**

Date Collected: 9/24/2014 13:56 Matrix: Air

Sample ID: **Bldg 5-SV3**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	300		ug/m3	5	TO-15		10/2/14 20:22	ECB	A
Benzene	2		ug/m3	0.6	TO-15		10/7/14 02:06	ECB	A
Bromodichloromethane	ND		ug/m3	1	TO-15		10/7/14 02:06	ECB	A
Bromoform	ND		ug/m3	2	TO-15		10/7/14 02:06	ECB	A
Bromomethane	ND		ug/m3	0.8	TO-15		10/7/14 02:06	ECB	A
2-Butanone	46		ug/m3	0.6	TO-15		10/7/14 02:06	ECB	A
Carbon Tetrachloride	ND		ug/m3	1	TO-15		10/7/14 02:06	ECB	A
Chlorobenzene	ND		ug/m3	0.9	TO-15		10/7/14 02:06	ECB	A
Chlorodibromomethane	ND		ug/m3	2	TO-15		10/7/14 02:06	ECB	A
Chloroform	ND		ug/m3	1	TO-15		10/7/14 02:06	ECB	A
1,2-Dibromoethane	ND		ug/m3	2	TO-15		10/7/14 02:06	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	1	TO-15		10/7/14 02:06	ECB	A
1,3-Dichlorobenzene	13		ug/m3	1	TO-15		10/7/14 02:06	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	1	TO-15		10/7/14 02:06	ECB	A
1,1-Dichloroethane	ND		ug/m3	0.8	TO-15		10/7/14 02:06	ECB	A
1,2-Dichloroethane	ND		ug/m3	0.8	TO-15		10/7/14 02:06	ECB	A
1,1-Dichloroethene	ND		ug/m3	0.8	TO-15		10/7/14 02:06	ECB	A
cis-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/7/14 02:06	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/7/14 02:06	ECB	A
1,2-Dichloropropane	ND		ug/m3	0.9	TO-15		10/7/14 02:06	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/7/14 02:06	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/7/14 02:06	ECB	A
1,4-Dioxane	ND		ug/m3	0.7	TO-15		10/7/14 02:06	ECB	A
Ethylbenzene	10		ug/m3	0.9	TO-15		10/7/14 02:06	ECB	A
Hexachlorobutadiene	ND		ug/m3	2	TO-15		10/7/14 02:06	ECB	A
2-Hexanone	5		ug/m3	0.8	TO-15		10/7/14 02:06	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	0.7	TO-15		10/7/14 02:06	ECB	A
4-Methyl-2-Pentanone(MIBK)	6		ug/m3	0.8	TO-15		10/7/14 02:06	ECB	A
Methylene Chloride	5		ug/m3	0.7	TO-15		10/7/14 02:06	ECB	A
Naphthalene	ND		ug/m3	1	TO-15		10/7/14 02:06	ECB	A
Styrene	ND		ug/m3	0.8	TO-15		10/7/14 02:06	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	1	TO-15		10/7/14 02:06	ECB	A
Tetrachloroethene	36		ug/m3	1	TO-15		10/7/14 02:06	ECB	A
Toluene	29		ug/m3	0.8	TO-15		10/7/14 02:06	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	1	TO-15		10/7/14 02:06	ECB	A
1,1,2-Trichloroethane	ND		ug/m3	1	TO-15		10/7/14 02:06	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370006**

Date Collected: 9/24/2014 13:56 Matrix: Air

Sample ID: **Bldg 5-SV3**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Trichloroethene	220		ug/m3	11	TO-15		10/2/14 20:22	ECB	A
Vinyl Chloride	ND		ug/m3	0.5	TO-15		10/7/14 02:06	ECB	A
o-Xylene	15		ug/m3	0.9	TO-15		10/7/14 02:06	ECB	A
mp-Xylene	38		ug/m3	2	TO-15		10/7/14 02:06	ECB	A
Acetone	130		ppbv	2.0	TO-15		10/2/14 20:22	ECB	A
Benzene	0.58		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Bromodichloromethane	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Bromoform	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Bromomethane	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
2-Butanone	16		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Carbon Tetrachloride	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Chlorobenzene	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Chlorodibromomethane	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Chloroform	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
1,2-Dibromoethane	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
1,2-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
1,3-Dichlorobenzene	2.2		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
1,4-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
1,1-Dichloroethane	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
1,2-Dichloroethane	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
1,1-Dichloroethene	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
cis-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
trans-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
1,2-Dichloropropane	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
cis-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
trans-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
1,4-Dioxane	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Ethylbenzene	2.3		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Hexachlorobutadiene	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
2-Hexanone	1.2		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Methyl t-Butyl Ether	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
4-Methyl-2-Pentanone(MIBK)	1.4		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Methylene Chloride	1.5		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Naphthalene	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Styrene	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
1,1,2,2-Tetrachloroethane	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Tetrachloroethene	5.3		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Toluene	7.8		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

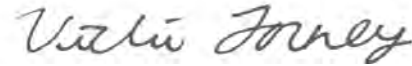
Lab ID: **2031370006**

Date Collected: 9/24/2014 13:56 Matrix: Air

Sample ID: **Bldg 5-SV3**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,1-Trichloroethane	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
1,1,2-Trichloroethane	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
Trichloroethene	41		ppbv	2.0	TO-15		10/2/14 20:22	ECB	A
Vinyl Chloride	ND		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
o-Xylene	3.5		ppbv	0.20	TO-15		10/7/14 02:06	ECB	A
mp-Xylene	8.7		ppbv	0.40	TO-15		10/7/14 02:06	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	108		%	70 - 130	TO-15		10/2/14 20:22	ECB	A
4-Bromofluorobenzene (S)	102		%	70 - 130	TO-15		10/7/14 02:06	ECB	A



Mrs. Vicki A. Forney

Project Coordinator

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370007**

Date Collected: 9/24/2014 13:56 Matrix: Air

Sample ID: **Bldg 5-SV4**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	52	4	ug/m3	0.5	TO-15		10/7/14 03:27	ECB	A
Benzene	ND		ug/m3	0.6	TO-15		10/7/14 03:27	ECB	A
Bromodichloromethane	ND		ug/m3	1	TO-15		10/7/14 03:27	ECB	A
Bromoform	ND		ug/m3	2	TO-15		10/7/14 03:27	ECB	A
Bromomethane	ND		ug/m3	0.8	TO-15		10/7/14 03:27	ECB	A
2-Butanone	17		ug/m3	0.6	TO-15		10/7/14 03:27	ECB	A
Carbon Tetrachloride	ND		ug/m3	1	TO-15		10/7/14 03:27	ECB	A
Chlorobenzene	ND		ug/m3	0.9	TO-15		10/7/14 03:27	ECB	A
Chlorodibromomethane	ND		ug/m3	2	TO-15		10/7/14 03:27	ECB	A
Chloroform	ND		ug/m3	1	TO-15		10/7/14 03:27	ECB	A
1,2-Dibromoethane	ND		ug/m3	2	TO-15		10/7/14 03:27	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	1	TO-15		10/7/14 03:27	ECB	A
1,3-Dichlorobenzene	2		ug/m3	1	TO-15		10/7/14 03:27	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	1	TO-15		10/7/14 03:27	ECB	A
1,1-Dichloroethane	ND		ug/m3	0.8	TO-15		10/7/14 03:27	ECB	A
1,2-Dichloroethane	ND		ug/m3	0.8	TO-15		10/7/14 03:27	ECB	A
1,1-Dichloroethene	ND		ug/m3	0.8	TO-15		10/7/14 03:27	ECB	A
cis-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/7/14 03:27	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/7/14 03:27	ECB	A
1,2-Dichloropropane	ND		ug/m3	0.9	TO-15		10/7/14 03:27	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/7/14 03:27	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/7/14 03:27	ECB	A
1,4-Dioxane	ND		ug/m3	0.7	TO-15		10/7/14 03:27	ECB	A
Ethylbenzene	3		ug/m3	0.9	TO-15		10/7/14 03:27	ECB	A
Hexachlorobutadiene	ND		ug/m3	2	TO-15		10/7/14 03:27	ECB	A
2-Hexanone	ND		ug/m3	0.8	TO-15		10/7/14 03:27	ECB	A
Methyl t-Butyl Ether	6		ug/m3	0.7	TO-15		10/7/14 03:27	ECB	A
4-Methyl-2-Pentanone(MIBK)	2		ug/m3	0.8	TO-15		10/7/14 03:27	ECB	A
Methylene Chloride	350	2	ug/m3	7	TO-15		10/2/14 21:42	ECB	A
Naphthalene	ND		ug/m3	1	TO-15		10/7/14 03:27	ECB	A
Styrene	ND		ug/m3	0.8	TO-15		10/7/14 03:27	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	1	TO-15		10/7/14 03:27	ECB	A
Tetrachloroethene	ND		ug/m3	1	TO-15		10/7/14 03:27	ECB	A
Toluene	9		ug/m3	0.8	TO-15		10/7/14 03:27	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	1	TO-15		10/7/14 03:27	ECB	A
1,1,2-Trichloroethane	ND		ug/m3	1	TO-15		10/7/14 03:27	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370007**

Date Collected: 9/24/2014 13:56 Matrix: Air

Sample ID: **Bldg 5-SV4**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Trichloroethene	7		ug/m3	1	TO-15		10/7/14 03:27	ECB	A
Vinyl Chloride	ND		ug/m3	0.5	TO-15		10/7/14 03:27	ECB	A
o-Xylene	4		ug/m3	0.9	TO-15		10/7/14 03:27	ECB	A
mp-Xylene	11		ug/m3	2	TO-15		10/7/14 03:27	ECB	A
Acetone	22	3	ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Benzene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Bromodichloromethane	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Bromoform	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Bromomethane	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
2-Butanone	5.8		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Carbon Tetrachloride	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Chlorobenzene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Chlorodibromomethane	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Chloroform	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
1,2-Dibromoethane	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
1,2-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
1,3-Dichlorobenzene	0.41		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
1,4-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
1,1-Dichloroethane	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
1,2-Dichloroethane	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
1,1-Dichloroethene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
cis-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
trans-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
1,2-Dichloropropane	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
cis-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
trans-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
1,4-Dioxane	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Ethylbenzene	0.66		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Hexachlorobutadiene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
2-Hexanone	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Methyl t-Butyl Ether	1.7		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
4-Methyl-2-Pentanone(MIBK)	0.50		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Methylene Chloride	100	1	ppbv	2.0	TO-15		10/2/14 21:42	ECB	A
Naphthalene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Styrene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
1,1,2,2-Tetrachloroethane	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Tetrachloroethene	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Toluene	2.4		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

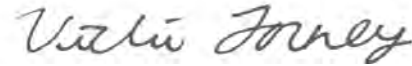
Lab ID: **2031370007**

Date Collected: 9/24/2014 13:56 Matrix: Air

Sample ID: **Bldg 5-SV4**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,1-Trichloroethane	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
1,1,2-Trichloroethane	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Trichloroethene	1.4		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
Vinyl Chloride	ND		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
o-Xylene	0.93		ppbv	0.20	TO-15		10/7/14 03:27	ECB	A
mp-Xylene	2.5		ppbv	0.40	TO-15		10/7/14 03:27	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	106		%	70 - 130	TO-15		10/2/14 21:42	ECB	A
4-Bromofluorobenzene (S)	99		%	70 - 130	TO-15		10/7/14 03:27	ECB	A



Mrs. Vicki A. Forney  
Project Coordinator

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370008**

Date Collected: 9/24/2014 14:08 Matrix: Air

Sample ID: **Bldg 5-SV5**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	140		ug/m3	5	TO-15		10/2/14 22:22	ECB	A
Benzene	2		ug/m3	0.6	TO-15		10/7/14 04:08	ECB	A
Bromodichloromethane	ND		ug/m3	1	TO-15		10/7/14 04:08	ECB	A
Bromoform	ND		ug/m3	2	TO-15		10/7/14 04:08	ECB	A
Bromomethane	ND		ug/m3	0.8	TO-15		10/7/14 04:08	ECB	A
2-Butanone	150		ug/m3	6	TO-15		10/2/14 22:22	ECB	A
Carbon Tetrachloride	ND		ug/m3	1	TO-15		10/7/14 04:08	ECB	A
Chlorobenzene	ND		ug/m3	0.9	TO-15		10/7/14 04:08	ECB	A
Chlorodibromomethane	ND		ug/m3	2	TO-15		10/7/14 04:08	ECB	A
Chloroform	ND		ug/m3	1	TO-15		10/7/14 04:08	ECB	A
1,2-Dibromoethane	ND		ug/m3	2	TO-15		10/7/14 04:08	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	1	TO-15		10/7/14 04:08	ECB	A
1,3-Dichlorobenzene	5		ug/m3	1	TO-15		10/7/14 04:08	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	1	TO-15		10/7/14 04:08	ECB	A
1,1-Dichloroethane	ND		ug/m3	0.8	TO-15		10/7/14 04:08	ECB	A
1,2-Dichloroethane	ND		ug/m3	0.8	TO-15		10/7/14 04:08	ECB	A
1,1-Dichloroethene	ND		ug/m3	0.8	TO-15		10/7/14 04:08	ECB	A
cis-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/7/14 04:08	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/7/14 04:08	ECB	A
1,2-Dichloropropane	ND		ug/m3	0.9	TO-15		10/7/14 04:08	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/7/14 04:08	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/7/14 04:08	ECB	A
1,4-Dioxane	ND		ug/m3	0.7	TO-15		10/7/14 04:08	ECB	A
Ethylbenzene	7		ug/m3	0.9	TO-15		10/7/14 04:08	ECB	A
Hexachlorobutadiene	ND		ug/m3	2	TO-15		10/7/14 04:08	ECB	A
2-Hexanone	3		ug/m3	0.8	TO-15		10/7/14 04:08	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	0.7	TO-15		10/7/14 04:08	ECB	A
4-Methyl-2-Pentanone(MIBK)	46		ug/m3	0.8	TO-15		10/7/14 04:08	ECB	A
Methylene Chloride	3		ug/m3	0.7	TO-15		10/7/14 04:08	ECB	A
Naphthalene	ND		ug/m3	1	TO-15		10/7/14 04:08	ECB	A
Styrene	ND		ug/m3	0.8	TO-15		10/7/14 04:08	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	1	TO-15		10/7/14 04:08	ECB	A
Tetrachloroethene	11		ug/m3	1	TO-15		10/7/14 04:08	ECB	A
Toluene	23		ug/m3	0.8	TO-15		10/7/14 04:08	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	1	TO-15		10/7/14 04:08	ECB	A
1,1,2-Trichloroethane	ND		ug/m3	1	TO-15		10/7/14 04:08	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370008**

Date Collected: 9/24/2014 14:08 Matrix: Air

Sample ID: **Bldg 5-SV5**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Trichloroethene	4		ug/m3	1	TO-15		10/7/14 04:08	ECB	A
Vinyl Chloride	ND		ug/m3	0.5	TO-15		10/7/14 04:08	ECB	A
o-Xylene	10		ug/m3	0.9	TO-15		10/7/14 04:08	ECB	A
mp-Xylene	25		ug/m3	2	TO-15		10/7/14 04:08	ECB	A
Acetone	57		ppbv	2.0	TO-15		10/2/14 22:22	ECB	A
Benzene	0.52		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Bromodichloromethane	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Bromoform	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Bromomethane	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
2-Butanone	49		ppbv	2.0	TO-15		10/2/14 22:22	ECB	A
Carbon Tetrachloride	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Chlorobenzene	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Chlorodibromomethane	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Chloroform	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
1,2-Dibromoethane	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
1,2-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
1,3-Dichlorobenzene	0.85		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
1,4-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
1,1-Dichloroethane	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
1,2-Dichloroethane	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
1,1-Dichloroethene	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
cis-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
trans-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
1,2-Dichloropropane	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
cis-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
trans-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
1,4-Dioxane	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Ethylbenzene	1.5		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Hexachlorobutadiene	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
2-Hexanone	0.71		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Methyl t-Butyl Ether	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
4-Methyl-2-Pentanone(MIBK)	11		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Methylene Chloride	0.74		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Naphthalene	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Styrene	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
1,1,2,2-Tetrachloroethane	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Tetrachloroethene	1.6		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Toluene	6.1		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

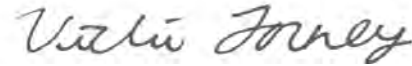
Lab ID: **2031370008**

Date Collected: 9/24/2014 14:08 Matrix: Air

Sample ID: **Bldg 5-SV5**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,1-Trichloroethane	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
1,1,2-Trichloroethane	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Trichloroethene	0.75		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
Vinyl Chloride	ND		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
o-Xylene	2.2		ppbv	0.20	TO-15		10/7/14 04:08	ECB	A
mp-Xylene	5.7		ppbv	0.40	TO-15		10/7/14 04:08	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	108		%	70 - 130	TO-15		10/2/14 22:22	ECB	A
4-Bromofluorobenzene (S)	106		%	70 - 130	TO-15		10/7/14 04:08	ECB	A



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Project Coordinator

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370009**

Date Collected: 9/24/2014 13:57 Matrix: Air

Sample ID: **Bldg 5-SV6**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	68	2	ug/m3	5	TO-15		10/6/14 20:45	ECB	A
Benzene	ND		ug/m3	6	TO-15		10/6/14 20:45	ECB	A
Bromodichloromethane	ND		ug/m3	13	TO-15		10/6/14 20:45	ECB	A
Bromoform	ND		ug/m3	21	TO-15		10/6/14 20:45	ECB	A
Bromomethane	ND		ug/m3	8	TO-15		10/6/14 20:45	ECB	A
2-Butanone	30		ug/m3	6	TO-15		10/6/14 20:45	ECB	A
Carbon Tetrachloride	ND		ug/m3	13	TO-15		10/6/14 20:45	ECB	A
Chlorobenzene	ND		ug/m3	9	TO-15		10/6/14 20:45	ECB	A
Chlorodibromomethane	ND		ug/m3	17	TO-15		10/6/14 20:45	ECB	A
Chloroform	ND		ug/m3	10	TO-15		10/6/14 20:45	ECB	A
1,2-Dibromoethane	ND		ug/m3	15	TO-15		10/6/14 20:45	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	12	TO-15		10/6/14 20:45	ECB	A
1,3-Dichlorobenzene	ND		ug/m3	12	TO-15		10/6/14 20:45	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	12	TO-15		10/6/14 20:45	ECB	A
1,1-Dichloroethane	1800		ug/m3	16	TO-15		10/7/14 22:12	ECB	A
1,2-Dichloroethane	ND		ug/m3	8	TO-15		10/6/14 20:45	ECB	A
1,1-Dichloroethene	350		ug/m3	8	TO-15		10/6/14 20:45	ECB	A
cis-1,2-Dichloroethene	590		ug/m3	8	TO-15		10/6/14 20:45	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	8	TO-15		10/6/14 20:45	ECB	A
1,2-Dichloropropane	ND		ug/m3	9	TO-15		10/6/14 20:45	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	9	TO-15		10/6/14 20:45	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	9	TO-15		10/6/14 20:45	ECB	A
1,4-Dioxane	96		ug/m3	7	TO-15		10/6/14 20:45	ECB	A
Ethylbenzene	ND		ug/m3	9	TO-15		10/6/14 20:45	ECB	A
Hexachlorobutadiene	ND		ug/m3	21	TO-15		10/6/14 20:45	ECB	A
2-Hexanone	ND		ug/m3	8	TO-15		10/6/14 20:45	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	7	TO-15		10/6/14 20:45	ECB	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/m3	8	TO-15		10/6/14 20:45	ECB	A
Methylene Chloride	8		ug/m3	7	TO-15		10/6/14 20:45	ECB	A
Naphthalene	ND		ug/m3	10	TO-15		10/6/14 20:45	ECB	A
Styrene	ND		ug/m3	8	TO-15		10/6/14 20:45	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	14	TO-15		10/6/14 20:45	ECB	A
Tetrachloroethene	97		ug/m3	14	TO-15		10/6/14 20:45	ECB	A
Toluene	19		ug/m3	8	TO-15		10/6/14 20:45	ECB	A
1,1,1-Trichloroethane	490		ug/m3	11	TO-15		10/6/14 20:45	ECB	A
1,1,2-Trichloroethane	ND		ug/m3	11	TO-15		10/6/14 20:45	ECB	A

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**Mexico:** Monterrey

### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

Lab ID: **2031370009**

Date Collected: 9/24/2014 13:57 Matrix: Air

Sample ID: **Bldg 5-SV6**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Trichloroethene	390		ug/m3	11	TO-15		10/6/14 20:45	ECB	A
Vinyl Chloride	ND		ug/m3	5	TO-15		10/6/14 20:45	ECB	A
o-Xylene	9		ug/m3	9	TO-15		10/6/14 20:45	ECB	A
mp-Xylene	23		ug/m3	17	TO-15		10/6/14 20:45	ECB	A
Acetone	29	1	ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Benzene	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Bromodichloromethane	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Bromoform	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Bromomethane	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
2-Butanone	10		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Carbon Tetrachloride	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Chlorobenzene	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Chlorodibromomethane	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Chloroform	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
1,2-Dibromoethane	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
1,2-Dichlorobenzene	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
1,3-Dichlorobenzene	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
1,4-Dichlorobenzene	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
1,1-Dichloroethane	450		ppbv	4.0	TO-15		10/7/14 22:12	ECB	A
1,2-Dichloroethane	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
1,1-Dichloroethene	88		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
cis-1,2-Dichloroethene	150		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
trans-1,2-Dichloroethene	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
1,2-Dichloropropane	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
cis-1,3-Dichloropropene	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
trans-1,3-Dichloropropene	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
1,4-Dioxane	27		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Ethylbenzene	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Hexachlorobutadiene	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
2-Hexanone	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Methyl t-Butyl Ether	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
4-Methyl-2-Pentanone(MIBK)	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Methylene Chloride	2.4		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Naphthalene	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Styrene	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
1,1,2,2-Tetrachloroethane	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Tetrachloroethene	14		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Toluene	5.1		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031370 CVC001|Varian/152728

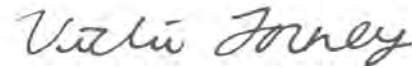
Lab ID: **2031370009**

Date Collected: 9/24/2014 13:57 Matrix: Air

Sample ID: **Bldg 5-SV6**

Date Received: 9/26/2014 09:30

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,1-Trichloroethane	89		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
1,1,2-Trichloroethane	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Trichloroethene	73		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
Vinyl Chloride	ND		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
o-Xylene	2.1		ppbv	2.0	TO-15		10/6/14 20:45	ECB	A
mp-Xylene	5.4		ppbv	4.0	TO-15		10/6/14 20:45	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	103		%	70 - 130	TO-15		10/6/14 20:45	ECB	A
4-Bromofluorobenzene (S)	98		%	70 - 130	TO-15		10/7/14 22:12	ECB	A



Mrs. Vicki A. Forney  
Project Coordinator

#### ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay  
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
<b>2031370001</b>	7	Bldg 5-1	TO-15	Methylene Chloride
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 178 and the control limits were 60 to 140.				
<b>2031370001</b>	8	Bldg 5-1	TO-15	Methylene Chloride
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 178 and the control limits were 60 to 140.				
<b>2031370002</b>	5	Bldg 5-2	TO-15	Methylene Chloride
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 178 and the control limits were 60 to 140.				
<b>2031370002</b>	6	Bldg 5-2	TO-15	Methylene Chloride
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 178 and the control limits were 60 to 140.				
<b>2031370007</b>	1	Bldg 5-SV4	TO-15	Methylene Chloride
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 178 and the control limits were 60 to 140.				
<b>2031370007</b>	2	Bldg 5-SV4	TO-15	Methylene Chloride
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 178 and the control limits were 60 to 140.				
<b>2031370007</b>	3	Bldg 5-SV4	TO-15	Acetone
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Acetone. The % Recovery was reported as 59 and the control limits were 60 to 140.				
<b>2031370007</b>	4	Bldg 5-SV4	TO-15	Acetone
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Acetone. The % Recovery was reported as 59 and the control limits were 60 to 140.				
<b>2031370009</b>	1	Bldg 5-SV6	TO-15	Acetone
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Acetone. The % Recovery was reported as 59 and the control limits were 60 to 140.				
<b>2031370009</b>	2	Bldg 5-SV6	TO-15	Acetone
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Acetone. The % Recovery was reported as 59 and the control limits were 60 to 140.				

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Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey



COC #:   
 ALS Quote

# AIR ANALYSIS CHAIN-OF-CUSTODY/FIELD TEST DATA SHEET

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/SAMPLER.

34 Dogwood Lane  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430



INSTRUCTIONS ON THE BACK.

1. CLIENT INFORMATION		2. ANALYSES/METHOD REQUESTED		3. LABORATORY		RECEIVING INFORMATION:	
NO.	TO-15 ANALYSES	STD LIST	LIST LIST	OTHER	LABORATORY CANISTER CERTIFIED BY:	Y	N
1	<input checked="" type="checkbox"/>				Site List		
2	<input checked="" type="checkbox"/>						
3	<input checked="" type="checkbox"/>						
4	<input checked="" type="checkbox"/>						
5	<input checked="" type="checkbox"/>						
6	<input checked="" type="checkbox"/>						
7	<input checked="" type="checkbox"/>						
8	<input checked="" type="checkbox"/>						
9	<input checked="" type="checkbox"/>						
10	<input checked="" type="checkbox"/>						

Client Name/Address: <b>CB/I, 150 Royal St Lebanon, MA 02021</b>		LABORATORY ANALYST SIGNATURE: <b>[Signature]</b>		COC Complete/Accurate? <input checked="" type="checkbox"/>		Initial: <b>AV</b>	
Contact: <b>Ray Coberth</b>		CANISTERS PREPARED BY: <b>EVAN CHAND</b>		Labels Complete/Accurate? <input checked="" type="checkbox"/>			
Phone#: <b>617-589-6102</b>		Name: <b>EVAN CHAND</b>		Cont. In Good Cond.? <input checked="" type="checkbox"/>			
Project Name/#: <b>Verian / 152728</b>		Title: <b>STELIMS ANALYST</b>		Custody Seals Present? <input checked="" type="checkbox"/>			
Bill To: <b>CB/I</b>		Custody Sealed Date/Time: <b>9/15/14 10:26</b>		(if present) Seals Intact? <input checked="" type="checkbox"/>			
TAT <input checked="" type="checkbox"/>		Date Shipped to Client: <b>9/15/14</b>		Returned In ≤ 15 days? <input checked="" type="checkbox"/>			
Email: <b>[Blank]</b>		Custody Seal # (s): <b># 1389 + 1390</b>		Custody Seal # (s): <b>[Blank]</b>			
Fax: <b>[Blank]</b>		Approved By: <b>[Signature]</b>		Courier/Tracking #: <b>260-870-202 10004552</b>			
		Y - Y Normal - Standard TAT is 10-12 business days.		Z - Z Rush TAT subject to ALS approval and surcharges.			
		Y - Y Normal - Standard TAT is 10-12 business days.		Z - Z Rush TAT subject to ALS approval and surcharges.			

SAMPLE INFORMATION FOR TO-15		TO-15 FIELD DATA				LABORATORY RECORD					
Sample Description/Location (as it will appear on the lab report)	Sample Date	Start Time	Stop Time	Temp Deg C	Flow Controller No.	Canister Pressure (Hq) Start	Canister Pressure (Hq) Stop	Canister Certification File	Canister Pressure (Hq) Out	Canister Pressure (Hq) In	Setpoint (ml./min)
1 Bldg 5-1	9/24	8:47	16:13		512	30	5	13090815	19.7	-3.3	10.32
2 Bldg 5-2		8:48	16:21		10060	30	5	13090815	19.7	-1.6	10.22
3 Bldg 5-3		8:49	12:50		1367	28.5	5	13090815	21.2	-4.5	10.35
4 Bldg 5-6		8:50	16:11		4028	29	5	13090815	19.7	-4.8	10.21
5 Bldg 5-SV2		10:05	13:57		1796	28	4	13090815	21.7	-2.9	20.60
6 Bldg 5-SV3		10:05	13:56		5639	30	4	13090815	19.7	-0.9	20.63
7 Bldg 5-SV4		10:02	13:56		1830	-	-	13090815	19.7	-0.1	80.50
8 Bldg 5-SV5		10:01	14:08		1129	30	8	13090815	20.8	40.5	20.62
9 Bldg 5-SV6		10:00	15:57		1265	30	4	13090815	20.8	-1.2	20.48
10											

5. SAMPLED BY (Please Print):		LOGGED BY (signature):		6. PROJECT INFORMATION	
Relinquished By / Company Name	Date	Received By / Company Name	Date	Standard	CLP-like
<b>Val Peirley</b>		<b>[Signature]</b>	9/26-14	<input type="checkbox"/>	<input type="checkbox"/>
	9/25 12:00	<b>CB/I Signering</b>	9/25 12:00	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<b>[Signature]</b>	9/25 14:30	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>

DELIVERABLES		EODS: TYPE:		ALS FIELD SERVICES:	
NO.	DATE	PICKUP	LABOR	OTHER	STATE SAMPLES COLLECTED IN
1		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	NY
2		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NJ
3		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PA
4		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NC
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other
6		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other
10		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other







**RECORD OF**  
Shaw Environmental, Inc.

Teleconference

Meeting

Date:	Time:	<input type="checkbox"/> Call From	<input type="checkbox"/> Call To	Name:
Other Participants:		Telephone Number:		
		Company Name:		
Topic:	Address:			
	City:	State:	Zip Code:	

Summary (Decision and Specific Action Required by Named Persons):

Attention: Bldg 5-SV4: Regulator did not have pressure gauge, could not verify starting or ending pressure

Bldg 5-3: Regulator/Cannister dropped to 15 Hg within 60 minutes of starting sample. Verified that regulator was tight and can set up correctly. Had to stop sample @ 12:50, which is 4 hours ahead of schedule.

Please contact Jernilla Haley (jernilla.haley@cbi.com) with any questions

Required Action:

Distribution: Original to Project File Copy to Project Manager Copy to Preparer	<input type="checkbox"/> Other Distribution by Preparer:	Prepared by (Signature):	PAGE _____ OF _____
--	--	--------------------------	---------------------

Form Number: 014\_2  
Rev. 05-12-09

ALS-Middletown

TO-15 Sample Receipt Checklist

Client ID: CB+I +so Canton
Horizon WO#: 203370
Sample Delivery Group ID:
Log In By/Date: BUL 9-26-14
(signature)
Number of Shipping containers received:

Project Name/ #: VARIAN/1527258
Date/Time received: 9/26/14 0930
Received By: A TRVINGER
Project Manager Review (date) 9/29/14
(signature)
Courier: UPS

Circle the response below as appropriate.

1. Did kit(s) come with a shipping slip (airbill, etc.)? YES NO NA
If YES, enter airbill numbers: See COC

Shipping Container Information:

2. Were shipping containers received without signs of tampering? YES NO NA
Comments
3. Were custody seals present and intact? YES NO NA
4. Were custody seals numbers present? YES NO NA
List Custody Seal Numbers:

Sample Condition:

5. Were sample containers received intact without signs of tampering? YES NO NA
Comments

Chain of Custody:

6. Did COC arrive with the samples? YES NO NA
7. Do sample ID/Sample Description(s) match samples submitted? YES NO NA
8. Is date and time of collection listed on the COC for all samples? YES NO NA
9. Is identification of sampler on COC? YES NO NA
10. Are requested test method(s) on COC? YES NO NA
11. Are necessary signatures on COC? YES NO NA
12. Was Internal COC initiated? (should always be YES) YES NO NA

Sample Integrity Usability:

13. Do sample containers match the COC? YES NO NA
14. Were sample canisters received within 15 days of shipment to client? YES NO NA

Anomalies or Non-Conformances:



## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 152728

Project Location: Varian

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**

2031370-001 to -009

 Matrices: Groundwater/Surface Water Soil/Sediment Drinking Water Air  Other:

**CAM Protocol (check all that apply below):**

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC <input checked="" type="checkbox"/> CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="radio"/> Yes <input type="radio"/> No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="radio"/> Yes <input type="radio"/> No <sup>1</sup>
<b>Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.</b>		
<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="radio"/> Yes <input type="radio"/> No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes <input type="radio"/> No <sup>1</sup> <input checked="" type="radio"/>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

 Signature: Jennifer M. Stanhope Lamoreux

 Position: Reporting Manager

 Printed Name: Jennifer M. Stanhope Lamoreux

 Date: 10/9/2014



34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010, NY 11759, PA 22-293 DoD ELAP: AZLA 0818.01  
 State Certification: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343

**QUALITY CONTROL DATA**

Workorder **2031370** Project Name **Varian/152728**

QC Batch **TO15 / 2575**

QC Batch Method **TO-15** Analysis Method **TO-15**

Associated Lab Samples **2031370001 2031370002**

Parameter	Original Result	Qualifiers	Units	Spike Conc.
2-Butanone		U	ug/m3	
2-Butanone		U	ppbv	
Acetone		U	ug/m3	
Acetone		U	ppbv	
<i>Surrogate Recoveries</i>				
4-Bromofluorobenzene				
<b>METHOD BLANK</b>				
Parameter	Blank Result	Qualifiers	Units	Reporting Limit
2-Butanone	ND	U	ug/m3	0.6
2-Butanone	ND	U	ppbv	0.20
Acetone	ND	U	ug/m3	0.5
Acetone	ND	U	ppbv	0.20
<i>Surrogate Recoveries</i>				
4-Bromofluorobenzene			%	101
				70-130



LABORATORY CONTROL SAMPLE 2079958

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
2-Butanone	0.5		ug/m3	0.6	91	60-140
2-Butanone	0.18		ppbv	0.2	91	60-140
Acetone	0.3		ug/m3	0.5	64	60-140
Acetone	0.13		ppbv	0.2	64	60-140
Surrogate Recoveries			%		105	70-130

QC Batch TO15 / 2576

QC Batch Method TO-15 Analysis Method TO-15

Associated Lab Samples	2031370001	2031370002	2031370003	2031370004	2031370005	2031370006	2031370007	2031370008
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2080548

Parameter	Original Result	Qualifiers	Units	Spike Conc.
1,1,1-Trichloroethane		U	ppbv	
1,1,1-Trichloroethane		U	ug/m3	
1,1,2,2-Tetrachloroethane		U	ppbv	
1,1,2,2-Tetrachloroethane		U	ug/m3	
1,1,2-Trichloroethane		U	ppbv	
1,1,2-Trichloroethane		U	ug/m3	
1,1-Dichloroethane		U	ppbv	
1,1-Dichloroethane		U	ug/m3	
1,1-Dichloroethene		U	ppbv	
1,1-Dichloroethene		U	ug/m3	
1,2-Dibromoethane		U	ug/m3	
1,2-Dibromoethane		U	ppbv	
1,2-Dichlorobenzene		U	ug/m3	
1,2-Dichlorobenzene		U	ppbv	
1,2-Dichloroethane		U	ppbv	
1,2-Dichloroethane		U	ug/m3	
1,2-Dichloropropane		U	ppbv	
1,2-Dichloropropane		U	ug/m3	
1,3-Dichlorobenzene		U	ppbv	
1,3-Dichlorobenzene		U	ug/m3	
1,4-Dichlorobenzene		U	ppbv	
1,4-Dichlorobenzene		U	ug/m3	
1,4-Dioxane		U	ppbv	

ALS - Middletown, PA

Thursday, October 23, 2014

This is an addendum to the Certificate of Analysis.





1,4-Dioxane	U	ug/m3
2-Butanone	U	ug/m3
2-Butanone	U	ppbv
2-Hexanone	U	ug/m3
2-Hexanone	U	ppbv
4-Methyl-2-Pentanone(MIBK)	U	ug/m3
4-Methyl-2-Pentanone(MIBK)	U	ppbv
Acetone	U	ug/m3
Acetone	U	ppbv
Benzene	U	ppbv
Benzene	U	ug/m3
Bromodichloromethane	U	ug/m3
Bromodichloromethane	U	ppbv
Bromoform	U	ppbv
Bromoform	U	ug/m3
Bromomethane	U	ug/m3
Bromomethane	U	ppbv
Carbon Tetrachloride	U	ppbv
Carbon Tetrachloride	U	ug/m3
Chlorobenzene	U	ug/m3
Chlorobenzene	U	ppbv
Chlorodibromomethane	U	ppbv
Chlorodibromomethane	U	ug/m3
Chloroform	U	ppbv
Chloroform	U	ug/m3
cis-1,2-Dichloroethene	U	ppbv
cis-1,2-Dichloroethene	U	ug/m3
cis-1,3-Dichloropropene	U	ppbv
cis-1,3-Dichloropropene	U	ug/m3
Ethylbenzene	U	ug/m3
Ethylbenzene	U	ppbv
Hexachlorobutadiene	U	ppbv
Hexachlorobutadiene	U	ug/m3
Methyl t-Butyl Ether	U	ppbv
Methyl t-Butyl Ether	U	ug/m3
Methylene Chloride	U	ppbv
Methylene Chloride	U	ug/m3
mp-Xylene	U	ppbv
mp-Xylene	U	ug/m3
Naphthalene	U	ppbv
Naphthalene	U	ug/m3
o-Xylene	U	ppbv
o-Xylene	U	ug/m3
Styrene	U	ppbv

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Styrene	U		ug/m3			
tert-Butyl Alcohol	U		ppbv			
Tetrachloroethene	U		ppbv			
Tetrachloroethene	U		ug/m3			
Toluene	U		ug/m3			
Toluene	U		ppbv			
trans-1,2-Dichloroethene	U		ppbv			
trans-1,2-Dichloroethene	U		ug/m3			
trans-1,3-Dichloropropene	U		ppbv			
trans-1,3-Dichloropropene	U		ug/m3			
Trichloroethene	U		ug/m3			
Trichloroethene	U		ppbv			
Vinyl Chloride	U		ug/m3			
Vinyl Chloride	U		ppbv			

Surrogate Recoveries

4-Bromofluorobenzene

METHOD BLANK

2080546

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
1,1,1-Trichloroethane	ND	U	ppbv	0.20		
1,1,1-Trichloroethane	ND	U	ug/m3	1		
1,1,2,2-Tetrachloroethane	ND	U	ppbv	0.20		
1,1,2,2-Tetrachloroethane	ND	U	ug/m3	1		
1,1,2-Trichloroethane	ND	U	ppbv	0.20		
1,1,2-Trichloroethane	ND	U	ug/m3	1		
1,1-Dichloroethane	ND	U	ppbv	0.20		
1,1-Dichloroethane	ND	U	ug/m3	0.8		
1,1-Dichloroethane	ND	U	ppbv	0.20		
1,1-Dichloroethane	ND	U	ug/m3	0.8		
1,2-Dibromoethane	ND	U	ug/m3	2		
1,2-Dibromoethane	ND	U	ppbv	0.20		
1,2-Dichlorobenzene	ND	U	ppbv	0.20		
1,2-Dichlorobenzene	ND	U	ug/m3	1		
1,2-Dichloroethane	ND	U	ppbv	0.20		
1,2-Dichloroethane	ND	U	ug/m3	0.8		
1,2-Dichloropropane	ND	U	ppbv	0.20		
1,2-Dichloropropane	ND	U	ug/m3	0.9		
1,3-Dichlorobenzene	ND	U	ppbv	0.20		
1,3-Dichlorobenzene	ND	U	ug/m3	1		
1,4-Dichlorobenzene	ND	U	ppbv	0.20		
1,4-Dichlorobenzene	ND	U	ug/m3	1		

This is an addendum to the Certificate of Analysis.



1,4-Dioxane	ND	U	ppbv	0.20
1,4-Dioxane	ND	U	ug/m3	0.7
2-Butanone	ND	U	ppbv	0.20
2-Butanone	ND	U	ug/m3	0.6
2-Hexanone	ND	U	ppbv	0.20
2-Hexanone	ND	U	ug/m3	0.8
4-Methyl-2-Pentanone(MIBK)	ND	U	ppbv	0.20
4-Methyl-2-Pentanone(MIBK)	ND	U	ug/m3	0.8
Acetone	ND	U	ug/m3	0.5
Acetone	ND	U	ppbv	0.20
Benzene	ND	U	ppbv	0.20
Benzene	ND	U	ug/m3	0.6
Bromodichloromethane	ND	U	ppbv	0.20
Bromodichloromethane	ND	U	ug/m3	1
Bromoform	ND	U	ppbv	0.20
Bromoform	ND	U	ug/m3	2
Bromomethane	ND	U	ppbv	0.20
Bromomethane	ND	U	ug/m3	0.8
Carbon Tetrachloride	ND	U	ppbv	0.20
Carbon Tetrachloride	ND	U	ug/m3	1
Chlorobenzene	ND	U	ug/m3	0.9
Chlorobenzene	ND	U	ppbv	0.20
Chlorodibromomethane	ND	U	ppbv	0.20
Chlorodibromomethane	ND	U	ug/m3	2
Chloroform	ND	U	ug/m3	1
Chloroform	ND	U	ppbv	0.20
cis-1,2-Dichloroethene	ND	U	ug/m3	0.8
cis-1,2-Dichloroethene	ND	U	ppbv	0.20
cis-1,3-Dichloropropene	ND	U	ppbv	0.20
cis-1,3-Dichloropropene	ND	U	ug/m3	0.9
Ethylbenzene	ND	U	ug/m3	0.9
Ethylbenzene	ND	U	ppbv	0.20
Hexachlorobutadiene	ND	U	ug/m3	2
Hexachlorobutadiene	ND	U	ppbv	0.20
Methyl t-Butyl Ether	ND	U	ppbv	0.20
Methyl t-Butyl Ether	ND	U	ug/m3	0.7
Methylene Chloride	ND	U	ppbv	0.20
Methylene Chloride	ND	U	ug/m3	0.7
m-p-Xylene	ND	U	ppbv	0.40
m-p-Xylene	ND	U	ug/m3	2
Naphthalene	ND	U	ug/m3	1
Naphthalene	ND	U	ppbv	0.20
o-Xylene	ND	U	ppbv	0.20
o-Xylene	ND	U	ug/m3	0.9

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Styrene	ND	U	ppbv	0.20		
Styrene	ND	U	ug/m3	0.8		
tert-Butyl Alcohol	ND	U	ppbv	0.20		
Tetrachloroethene	ND	U	ug/m3	1		
Tetrachloroethene	ND	U	ppbv	0.20		
Toluene	ND	U	ug/m3	0.8		
Toluene	ND	U	ppbv	0.20		
trans-1,2-Dichloroethene	ND	U	ppbv	0.20		
trans-1,2-Dichloroethene	ND	U	ug/m3	0.8		
trans-1,3-Dichloropropene	ND	U	ppbv	0.20		
trans-1,3-Dichloropropene	ND	U	ug/m3	0.9		
Trichloroethene	ND	U	ug/m3	1		
Trichloroethene	ND	U	ppbv	0.20		
Vinyl Chloride	ND	U	ppbv	0.20		
Vinyl Chloride	ND	U	ug/m3	0.5		
Surrogate Recoveries						
4-Bromofluorobenzene			%		103	70-130

LABORATORY CONTROL SAMPLE

2080547

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
1,1,1-Trichloroethane	0.21		ppbv	0.2	104	60-140
1,1,1-Trichloroethane	1		ug/m3	1	104	60-140
1,1,2,2-Tetrachloroethane	0.24		ppbv	0.2	119	60-140
1,1,2,2-Tetrachloroethane	2		ug/m3	1	119	60-140
1,1,2-Trichloroethane	0.21		ppbv	0.2	107	60-140
1,1,2-Trichloroethane	1		ug/m3	1	107	60-140
1,1-Dichloroethane	0.22		ppbv	0.2	108	60-140
1,1-Dichloroethane	0.9		ug/m3	0.8	108	60-140
1,1-Dichloroethane	0.18		ppbv	0.2	91	60-140
1,1-Dichloroethane	0.7		ug/m3	0.8	91	60-140
1,2-Dibromoethane	0.2		ppbv	0.2	102	60-140
1,2-Dibromoethane	2		ug/m3	2	102	60-140
1,2-Dichlorobenzene	1		ug/m3	1	107	60-140
1,2-Dichlorobenzene	0.21		ppbv	0.2	107	60-140
1,2-Dichloroethane	0.21		ppbv	0.2	107	60-140
1,2-Dichloroethane	0.9		ug/m3	0.8	107	60-140
1,2-Dichloropropane	0.21		ppbv	0.2	104	60-140
1,2-Dichloropropane	1		ug/m3	0.9	104	60-140
1,3-Dichlorobenzene	0.22		ppbv	0.2	108	60-140
1,3-Dichlorobenzene	1		ug/m3	1	108	60-140
1,4-Dichlorobenzene	0.21		ppbv	0.2	106	60-140



1,4-Dichlorobenzene	1	ug/m3	106	60-140
1,4-Dioxane	0.5	ug/m3	64	60-140
1,4-Dioxane	0.13	ppbv	64	60-140
2-Butanone	0.2	ppbv	102	60-140
2-Butanone	0.6	ug/m3	102	60-140
2-Hexanone	0.16	ppbv	78	60-140
2-Hexanone	0.6	ug/m3	78	60-140
4-Methyl-2-Pentanone(MIBK)	0.16	ppbv	81	60-140
4-Methyl-2-Pentanone(MIBK)	0.7	ug/m3	81	60-140
Acetone	0.3	ug/m3	68	60-140
Acetone	0.14	ppbv	68	60-140
Benzene	0.22	ppbv	108	60-140
Benzene	0.7	ug/m3	108	60-140
Bromodichloromethane	0.22	ppbv	110	60-140
Bromodichloromethane	1	ug/m3	110	60-140
Bromoform	0.18	ppbv	88	60-140
Bromoform	2	ug/m3	88	60-140
Bromomethane	0.22	ppbv	112	60-140
Bromomethane	0.9	ug/m3	112	60-140
Carbon Tetrachloride	1	ug/m3	95	60-140
Carbon Tetrachloride	0.19	ppbv	95	60-140
Chlorobenzene	0.21	ppbv	107	60-140
Chlorobenzene	1	ug/m3	107	60-140
Chlorodibromomethane	0.19	ppbv	97	60-140
Chlorodibromomethane	2	ug/m3	97	60-140
Chloroform	0.23	ppbv	115	60-140
Chloroform	1	ug/m3	115	60-140
cis-1,2-Dichloroethene	0.17	ppbv	87	60-140
cis-1,2-Dichloroethene	0.7	ug/m3	87	60-140
cis-1,3-Dichloropropene	0.19	ppbv	95	60-140
cis-1,3-Dichloropropene	0.9	ug/m3	95	60-140
Ethylbenzene	0.8	ug/m3	96	60-140
Ethylbenzene	0.19	ppbv	96	60-140
Hexachlorobutadiene	0.17	ppbv	84	60-140
Hexachlorobutadiene	2	ug/m3	84	60-140
Methyl t-Butyl Ether	0.17	ppbv	86	60-140
Methyl t-Butyl Ether	0.6	ug/m3	86	60-140
Methylene Chloride	0.36	ppbv	178*	60-140
Methylene Chloride	1	ug/m3	178*	60-140
m-p-Xylene	0.38	ppbv	95	60-140
m-p-Xylene	2	ug/m3	95	60-140
Naphthalene	1	ug/m3	104	60-140
Naphthalene	0.21	ppbv	104	60-140
o-Xylene	0.18	ppbv	92	60-140

Parameter	Original Result	Qualifiers	Units	Spike Conc.	109	70-130
o-Xylene	0.8		ug/m3	0.9	92	60-140
Styrene	0.17		ppbv	0.2	87	60-140
Styrene	0.7		ug/m3	0.9	87	60-140
tert-Butyl Alcohol	0.16		ppbv	0.2	82	60-140
Tetrachloroethane	0.16		ppbv	0.2	80	60-140
Tetrachloroethene	1		ug/m3	1	80	60-140
Toluene	0.19		ppbv	0.2	93	60-140
Toluene	0.7		ug/m3	0.8	93	60-140
trans-1,2-Dichloroethene	0.7		ug/m3	0.8	93	60-140
trans-1,2-Dichloroethane	0.19		ppbv	0.2	93	60-140
trans-1,3-Dichloropropene	0.19		ppbv	0.2	93	60-140
trans-1,3-Dichloropropene	0.8		ug/m3	0.9	93	60-140
Trichloroethene	0.18		ppbv	0.2	88	60-140
Trichloroethane	0.9		ug/m3	1	88	60-140
Vinyl Chloride	0.27		ppbv	0.2	134	60-140
Vinyl Chloride	0.7		ug/m3	0.5	134	60-140
Surrogate Recoveries						
4-Bromofluorobenzene			%		109	70-130

QC Batch TO15 / 2577  
 QC Batch Method TO-15 Analysis Method TO-15  
 Associated Lab Samples 2031370003 2031370004 2031370005 2031370006 2031370007 2031370008 2031370009

Parameter	Original Result	Qualifiers	Units	Spike Conc.
1,1,1-Trichloroethane		U	ppbv	
1,1,1-Trichloroethane		U	ug/m3	
1,1,2-Tetrachloroethane		U	ppbv	
1,1,2-Tetrachloroethane		U	ug/m3	
1,1,2-Trichloroethane		U	ppbv	
1,1,2-Trichloroethane		U	ug/m3	
1,1-Dichloroethane		U	ppbv	
1,1-Dichloroethane		U	ug/m3	
1,1-Dichloroethene		U	ppbv	
1,1-Dichloroethene		U	ug/m3	
1,2-Dibromoethane		U	ug/m3	
1,2-Dibromoethane		U	ppbv	
1,2-Dichlorobenzene		U	ug/m3	
1,2-Dichlorobenzene		U	ppbv	
1,2-Dichloroethane		U	ppbv	



1,2-Dichloroethane	U	ug/m3
1,2-Dichloropropane	U	ppbv
1,2-Dichloropropane	U	ug/m3
1,3-Dichlorobenzene	U	ug/m3
1,3-Dichlorobenzene	U	ppbv
1,4-Dichlorobenzene	U	ppbv
1,4-Dichlorobenzene	U	ug/m3
1,4-Dioxane	U	ug/m3
1,4-Dioxane	U	ppbv
2-Butanone	U	ug/m3
2-Butanone	U	ppbv
2-Hexanone	U	ug/m3
2-Hexanone	U	ppbv
4-Methyl-2-Pentanone(MIBK)	U	ug/m3
4-Methyl-2-Pentanone(MIBK)	U	ppbv
Acetone	U	ppbv
Acetone	U	ug/m3
Benzene	U	ppbv
Benzene	U	ug/m3
Bromodichloromethane	U	ug/m3
Bromodichloromethane	U	ppbv
Bromoform	U	ppbv
Bromoform	U	ug/m3
Bromomethane	U	ppbv
Bromomethane	U	ug/m3
Carbon Tetrachloride	U	ug/m3
Carbon Tetrachloride	U	ppbv
Chlorobenzene	U	ppbv
Chlorobenzene	U	ug/m3
Chlorodibromomethane	U	ppbv
Chlorodibromomethane	U	ug/m3
Chloroform	U	ug/m3
Chloroform	U	ppbv
cis-1,2-Dichloroethene	U	ppbv
cis-1,2-Dichloroethene	U	ug/m3
cis-1,3-Dichloropropene	U	ppbv
cis-1,3-Dichloropropene	U	ug/m3
Ethylbenzene	U	ug/m3
Ethylbenzene	U	ppbv
Hexachlorobutadiene	U	ppbv
Hexachlorobutadiene	U	ug/m3
Methyl t-Butyl Ether	U	ppbv
Methyl t-Butyl Ether	U	ug/m3
Methylene Chloride	U	ppbv

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Methylene Chloride		U	ug/m3			
mp-Xylene		U	ug/m3			
mp-Xylene		U	ppbv			
Naphthalene		U	ug/m3			
Naphthalene		U	ppbv			
o-Xylene		U	ug/m3			
p-Xylene		U	ppbv			
Styrene		U	ppbv			
Styrene		U	ug/m3			
Tetrachloroethene		U	ppbv			
Tetrachloroethene		U	ug/m3			
Toluene		U	ug/m3			
Toluene		U	ppbv			
trans-1,2-Dichloroethene		U	ppbv			
trans-1,2-Dichloroethene		U	ug/m3			
trans-1,3-Dichloropropene		U	ppbv			
trans-1,3-Dichloropropene		U	ug/m3			
Trichloroethene		U	ppbv			
Trichloroethene		U	ug/m3			
Vinyl Chloride		U	ppbv			
Vinyl Chloride		U	ug/m3			
Surrogate Recoveries						
4-Bromofluorobenzene						

METHOD BLANK 2081634

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
1,1,1-Trichloroethane	ND	U	ppbv	0.20		
1,1,1-Trichloroethane	ND	U	ug/m3	1		
1,1,2,2-Tetrachloroethane	ND	U	ug/m3	1		
1,1,2,2-Tetrachloroethane	ND	U	ppbv	0.20		
1,1,2-Trichloroethane	ND	U	ppbv	0.20		
1,1,2-Trichloroethane	ND	U	ug/m3	1		
1,1-Dichloroethane	ND	U	ug/m3	0.8		
1,1-Dichloroethane	ND	U	ppbv	0.20		
1,1-Dichloroethene	ND	U	ppbv	0.20		
1,1-Dichloroethene	ND	U	ug/m3	0.8		
1,2-Dibromoethane	ND	U	ppbv	0.20		
1,2-Dibromoethane	ND	U	ug/m3	2		
1,2-Dichlorobenzene	ND	U	ug/m3	1		
1,2-Dichlorobenzene	ND	U	ppbv	0.20		
1,2-Dichloroethane	ND	U	ppbv	0.20		





1,2-Dichloroethane	ND	U	ug/m3	0.8
1,2-Dichloropropane	ND	U	ppbv	0.20
1,2-Dichloropropane	ND	U	ug/m3	0.9
1,3-Dichlorobenzene	ND	U	ppbv	0.20
1,3-Dichlorobenzene	ND	U	ug/m3	1
1,4-Dichlorobenzene	ND	U	ug/m3	1
1,4-Dichlorobenzene	ND	U	ppbv	0.20
1,4-Dioxane	ND	U	ug/m3	0.7
1,4-Dioxane	ND	U	ppbv	0.20
2-Butanone	ND	U	ppbv	0.20
2-Butanone	ND	U	ug/m3	0.6
2-Hexanone	ND	U	ppbv	0.20
2-Hexanone	ND	U	ug/m3	0.8
4-Methyl-2-Pentanone(MIBK)	ND	U	ppbv	0.20
4-Methyl-2-Pentanone(MIBK)	ND	U	ug/m3	0.8
Acetone	ND	U	ppbv	0.20
Acetone	ND	U	ug/m3	0.5
Benzene	ND	U	ug/m3	0.6
Benzene	ND	U	ppbv	0.20
Bromodichloromethane	ND	U	ppbv	0.20
Bromodichloromethane	ND	U	ug/m3	1
Bromoform	ND	U	ug/m3	2
Bromoform	ND	U	ppbv	0.20
Bromomethane	ND	U	ppbv	0.20
Bromomethane	ND	U	ug/m3	0.8
Carbon Tetrachloride	ND	U	ug/m3	1
Carbon Tetrachloride	ND	U	ppbv	0.20
Chlorobenzene	ND	U	ppbv	0.20
Chlorobenzene	ND	U	ug/m3	0.9
Chlorodibromomethane	ND	U	ug/m3	2
Chlorodibromomethane	ND	U	ppbv	0.20
Chloroform	ND	U	ug/m3	1
Chloroform	ND	U	ppbv	0.20
cis-1,2-Dichloroethene	ND	U	ug/m3	0.8
cis-1,2-Dichloroethene	ND	U	ppbv	0.20
cis-1,3-Dichloropropene	ND	U	ppbv	0.20
cis-1,3-Dichloropropene	ND	U	ug/m3	0.9
Ethylbenzene	ND	U	ug/m3	0.9
Ethylbenzene	ND	U	ppbv	0.20
Hexachlorobutadiene	ND	U	ug/m3	2
Hexachlorobutadiene	ND	U	ppbv	0.20
Methyl t-Butyl Ether	ND	U	ug/m3	0.7
Methyl t-Butyl Ether	ND	U	ppbv	0.20
Methylene Chloride	ND	U	ug/m3	0.7



Methylene Chloride	ND	U	ppbv	0.20
mp-Xylene	ND	U	ug/m3	2
mp-Xylene	ND	U	ppbv	0.40
Naphthalene	ND	U	ppbv	0.20
Naphthalene	ND	U	ug/m3	1
o-Xylene	ND	U	ppbv	0.20
o-Xylene	ND	U	ug/m3	0.9
Styrene	ND	U	ug/m3	0.8
Styrene	ND	U	ppbv	0.20
Tetrachloroethene	ND	U	ug/m3	1
Tetrachloroethene	ND	U	ppbv	0.20
Toluene	ND	U	ug/m3	0.8
Toluene	ND	U	ppbv	0.20
trans-1,2-Dichloroethene	ND	U	ug/m3	0.8
trans-1,2-Dichloroethene	ND	U	ppbv	0.20
trans-1,3-Dichloropropene	ND	U	ppbv	0.20
trans-1,3-Dichloropropene	ND	U	ug/m3	0.9
Trichloroethene	ND	U	ppbv	0.20
Trichloroethene	ND	U	ug/m3	1
Vinyl Chloride	ND	U	ppbv	0.20
Vinyl Chloride	ND	U	ug/m3	0.5

Surrogate Recoveries

98

%

70-130

LABORATORY CONTROL SAMPLE

2081635

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
1,1,1-Trichloroethane	1		ug/m3	1	94	60-140
1,1,1-Trichloroethane	0.19		ppbv	0.2	94	60-140
1,1,2,2-Tetrachloroethane	0.21		ppbv	0.2	106	60-140
1,1,2,2-Tetrachloroethane	1		ug/m3	1	106	60-140
1,1,2-Trichloroethane	0.2		ppbv	0.2	99	60-140
1,1,2-Trichloroethane	1		ug/m3	1	99	60-140
1,1-Dichloroethane	0.2		ppbv	0.2	102	60-140
1,1-Dichloroethane	0.8		ug/m3	0.8	102	60-140
1,1-Dichloroethane	0.18		ppbv	0.2	89	60-140
1,1-Dichloroethane	0.7		ug/m3	0.8	89	60-140
1,2-Dibromoethane	0.2		ppbv	0.2	98	60-140
1,2-Dibromoethane	2		ug/m3	2	98	60-140
1,2-Dichlorobenzene	1		ug/m3	1	104	60-140
1,2-Dichlorobenzene	0.21		ppbv	0.2	104	60-140
1,2-Dichloroethane	0.19		ppbv	0.2	97	60-140

1,2-Dichloroethane	0.8	ug/m3	0.8	97	60-140
1,2-Dichloropropane	0.19	ppbv	0.2	97	60-140
1,2-Dichloropropane	0.9	ug/m3	0.9	97	60-140
1,3-Dichlorobenzene	0.23	ppbv	0.2	114	60-140
1,3-Dichlorobenzene	1	ug/m3	1	114	60-140
1,4-Dichlorobenzene	1	ug/m3	1	109	60-140
1,4-Dichlorobenzene	0.22	ppbv	0.2	109	60-140
1,4-Dioxane	0.12	ppbv	0.2	60	60-140
1,4-Dioxane	0.4	ug/m3	0.7	60	60-140
2-Butanone	0.19	ppbv	0.2	97	60-140
2-Butanone	0.6	ug/m3	0.6	97	60-140
2-Hexanone	0.16	ppbv	0.2	79	60-140
2-Hexanone	0.6	ug/m3	0.8	79	60-140
4-Methyl-2-Pentanone(MIBK)	0.7	ug/m3	0.8	80	60-140
4-Methyl-2-Pentanone(MIBK)	0.16	ppbv	0.2	80	60-140
Acetone	0.12	ppbv	0.2	59*	60-140
Acetone	0.3	ug/m3	0.5	59*	60-140
Benzene	0.21	ppbv	0.2	104	60-140
Benzene	0.7	ug/m3	0.6	104	60-140
Bromodichloromethane	0.19	ppbv	0.2	97	60-140
Bromodichloromethane	1	ug/m3	1	97	60-140
Bromoform	0.18	ppbv	0.2	89	60-140
Bromoform	2	ug/m3	2	89	60-140
Bromomethane	0.7	ug/m3	0.8	95	60-140
Bromomethane	0.19	ppbv	0.2	95	60-140
Carbon Tetrachloride	1	ug/m3	1	101	60-140
Carbon Tetrachloride	0.2	ppbv	0.2	101	60-140
Chlorobenzene	0.2	ppbv	0.2	100	60-140
Chlorobenzene	0.9	ug/m3	0.9	100	60-140
Chlorodibromomethane	0.19	ppbv	0.2	96	60-140
Chlorodibromomethane	2	ug/m3	2	96	60-140
Chloroform	0.22	ppbv	0.2	108	60-140
Chloroform	1	ug/m3	1	108	60-140
cis-1,2-Dichloroethene	0.8	ug/m3	0.8	103	60-140
cis-1,2-Dichloroethene	0.21	ppbv	0.2	103	60-140
cis-1,3-Dichloropropene	0.18	ppbv	0.2	89	60-140
cis-1,3-Dichloropropene	0.8	ug/m3	0.9	89	60-140
Ethylbenzene	0.18	ppbv	0.2	91	60-140
Ethylbenzene	0.8	ug/m3	0.9	91	60-140
Hexachlorobutadiene	0.17	ppbv	0.2	87	60-140
Hexachlorobutadiene	2	ug/m3	2	87	60-140
Methyl t-Butyl Ether	0.18	ppbv	0.2	90	60-140
Methyl t-Butyl Ether	0.6	ug/m3	0.7	90	60-140
Methylene Chloride	0.26	ppbv	0.2	132	60-140



This is an addendum to the Certificate of Analysis.

Parameter	Original Result	Qualifiers	Units	Spike Conc.
Methylene Chloride	0.9		ug/m3	0.7
mp-Xylene	0.38		ppbv	0.4
mp-Xylene	2		ug/m3	2
Naphthalene	0.16		ppbv	0.2
Naphthalene	0.8		ug/m3	1
o-Xylene	0.18		ppbv	0.2
o-Xylene	0.8		ug/m3	0.9
Styrene	0.17		ppbv	0.2
Styrene	0.7		ug/m3	0.9
Tetrachloroethene	0.17		ppbv	0.2
Tetrachloroethene	1		ug/m3	1
Toluene	0.18		ppbv	0.2
Toluene	0.7		ug/m3	0.8
trans-1,2-Dichloroethene	0.7		ug/m3	0.8
trans-1,2-Dichloroethene	0.17		ppbv	0.2
trans-1,3-Dichloropropene	0.17		ppbv	0.2
trans-1,3-Dichloropropene	0.8		ug/m3	0.9
Trichloroethene	0.19		ppbv	0.2
Trichloroethene	1		ug/m3	1
Vinyl Chloride	0.19		ppbv	0.2
Vinyl Chloride	0.5		ug/m3	0.5
Surrogate Recoveries				
4-Bromofluorobenzene			%	104

QC Batch TO15 / 2579  
 QC Batch Method TO-15 Analysis Method TO-15  
 Associated Lab Samples 2031370009

Parameter	Original Result	Qualifiers	Units	Spike Conc.
1,1,1-Trichloroethane		U	ppbv	
1,1,1-Trichloroethane		U	ug/m3	
1,1,2,2-Tetrachloroethane		U	ppbv	
1,1,2,2-Tetrachloroethane		U	ug/m3	
1,1,2-Trichloroethane		U	ppbv	
1,1,2-Trichloroethane		U	ug/m3	
1,1-Dichloroethane		U	ppbv	
1,1-Dichloroethane		U	ug/m3	
1,1-Dichloroethane		U	ppbv	
1,1-Dichloroethane		U	ug/m3	





1,2-Dibromoethane	U	ug/m3
1,2-Dibromoethane	U	ppbv
1,2-Dichlorobenzene	U	ug/m3
1,2-Dichlorobenzene	U	ppbv
1,2-Dichloroethane	U	ppbv
1,2-Dichloroethane	U	ug/m3
1,2-Dichloropropane	U	ppbv
1,2-Dichloropropane	U	ug/m3
1,3-Dichlorobenzene	U	ug/m3
1,3-Dichlorobenzene	U	ppbv
1,4-Dichlorobenzene	U	ppbv
1,4-Dichlorobenzene	U	ug/m3
1,4-Dioxane	U	ug/m3
1,4-Dioxane	U	ppbv
2-Butanone	U	ug/m3
2-Butanone	U	ppbv
2-Hexanone	U	ug/m3
2-Hexanone	U	ppbv
4-Methyl-2-Pentanone(MIBK)	U	ug/m3
4-Methyl-2-Pentanone(MIBK)	U	ppbv
Acetone	U	ppbv
Acetone	U	ug/m3
Benzene	U	ppbv
Benzene	U	ug/m3
Bromodichloromethane	U	ug/m3
Bromodichloromethane	U	ppbv
Bromoform	U	ppbv
Bromoform	U	ug/m3
Bromomethane	U	ppbv
Bromomethane	U	ug/m3
Carbon Tetrachloride	U	ug/m3
Carbon Tetrachloride	U	ug/m3
Chlorobenzene	U	ppbv
Chlorobenzene	U	ug/m3
Chlorodibromomethane	U	ppbv
Chlorodibromomethane	U	ug/m3
Chloroform	U	ug/m3
Chloroform	U	ug/m3
cis-1,2-Dichloroethene	U	ppbv
cis-1,2-Dichloroethene	U	ppbv
cis-1,3-Dichloropropene	U	ug/m3
cis-1,3-Dichloropropene	U	ppbv
Ethylbenzene	U	ug/m3
Ethylbenzene	U	ppbv



This is an addendum to the Certificate of Analysis.

Hexachlorobutadiene	U	ppbv
Hexachlorobutadiene	U	ug/m3
Methyl t-Butyl Ether	U	ppbv
Methyl t-Butyl Ether	U	ug/m3
Methylene Chloride	U	ppbv
Methylene Chloride	U	ug/m3
m-p-Xylene	U	ug/m3
m-p-Xylene	U	ppbv
Naphthalene	U	ug/m3
Naphthalene	U	ppbv
o-Xylene	U	ug/m3
o-Xylene	U	ppbv
Styrene	U	ppbv
Styrene	U	ug/m3
Tetrachloroethene	U	ppbv
Tetrachloroethene	U	ug/m3
Toluene	U	ug/m3
Toluene	U	ppbv
trans-1,2-Dichloroethene	U	ppbv
trans-1,2-Dichloroethene	U	ug/m3
trans-1,3-Dichloropropene	U	ppbv
trans-1,3-Dichloropropene	U	ug/m3
Trichloroethene	U	ppbv
Trichloroethene	U	ug/m3
Vinyl Chloride	U	ug/m3
Vinyl Chloride	U	ppbv
Surrogate Recoveries	U	ug/m3

4-Bromofluorobenzene

METHOD BLANK

2082168

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
1,1,1-Trichloroethane	ND	U	ppbv	0.20		
1,1,1-Trichloroethane	ND	U	ug/m3	1		
1,1,2,2-Tetrachloroethane	ND	U	ug/m3	1		
1,1,2,2-Tetrachloroethane	ND	U	ppbv	0.20		
1,1,2-Trichloroethane	ND	U	ppbv	0.20		
1,1,2-Trichloroethane	ND	U	ug/m3	1		
1,1-Dichloroethane	ND	U	ug/m3	0.8		
1,1-Dichloroethane	ND	U	ppbv	0.20		
1,1-Dichloroethane	ND	U	ppbv	0.20		
1,1-Dichloroethane	ND	U	ug/m3	0.8		

1,2-Dibromoethane	ND	U	ppbv	0.20
1,2-Dibromoethane	ND	U	ug/m3	2
1,2-Dichlorobenzene	ND	U	ug/m3	1
1,2-Dichlorobenzene	ND	U	ppbv	0.20
1,2-Dichloroethane	ND	U	ppbv	0.20
1,2-Dichloroethane	ND	U	ug/m3	0.8
1,2-Dichloropropane	ND	U	ppbv	0.20
1,2-Dichloropropane	ND	U	ug/m3	0.9
1,3-Dichlorobenzene	ND	U	ppbv	0.20
1,3-Dichlorobenzene	ND	U	ug/m3	1
1,4-Dichlorobenzene	ND	U	ug/m3	1
1,4-Dichlorobenzene	ND	U	ppbv	0.20
1,4-Dioxane	ND	U	ug/m3	0.7
1,4-Dioxane	ND	U	ppbv	0.20
2-Butanone	ND	U	ppbv	0.20
2-Butanone	ND	U	ppbv	0.20
2-Hexanone	ND	U	ug/m3	0.6
2-Hexanone	ND	U	ppbv	0.20
2-Hexanone	ND	U	ug/m3	0.8
4-Methyl-2-Pentanone(MIBK)	ND	U	ppbv	0.20
4-Methyl-2-Pentanone(MIBK)	ND	U	ug/m3	0.8
Acetone	ND	U	ppbv	0.20
Acetone	ND	U	ug/m3	0.5
Benzene	ND	U	ug/m3	0.6
Benzene	ND	U	ppbv	0.20
Bromodichloromethane	ND	U	ppbv	0.20
Bromodichloromethane	ND	U	ug/m3	1
Bromoform	ND	U	ug/m3	2
Bromoform	ND	U	ppbv	0.20
Bromomethane	ND	U	ppbv	0.20
Bromomethane	ND	U	ug/m3	0.8
Carbon Tetrachloride	ND	U	ug/m3	1
Carbon Tetrachloride	ND	U	ppbv	0.20
Chlorobenzene	ND	U	ppbv	0.20
Chlorobenzene	ND	U	ug/m3	0.9
Chlorodibromomethane	ND	U	ug/m3	2
Chlorodibromomethane	ND	U	ppbv	0.20
Chloroform	ND	U	ug/m3	1
Chloroform	ND	U	ppbv	0.20
cis-1,2-Dichloroethene	ND	U	ug/m3	0.8
cis-1,2-Dichloroethene	ND	U	ppbv	0.20
cis-1,3-Dichloropropene	ND	U	ppbv	0.20
cis-1,3-Dichloropropene	ND	U	ug/m3	0.9
Ethylbenzene	ND	U	ug/m3	0.9
Ethylbenzene	ND	U	ppbv	0.20



This is an addendum to the Certificate of Analysis.

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Hexachlorobutadiene	ND	U	ug/m3	2		
Hexachlorobutadiene	ND	U	ppbv	0.20		
Methyl t-Butyl Ether	ND	U	ug/m3	0.7		
Methyl t-Butyl Ether	ND	U	ppbv	0.20		
Methylene Chloride	ND	U	ug/m3	0.7		
Methylene Chloride	ND	U	ppbv	0.20		
mp-Xylene	ND	U	ug/m3	2		
mp-Xylene	ND	U	ppbv	0.40		
Naphthalene	ND	U	ppbv	0.20		
Naphthalene	ND	U	ug/m3	1		
o-Xylene	ND	U	ppbv	0.20		
o-Xylene	ND	U	ug/m3	0.9		
Styrene	ND	U	ug/m3	0.8		
Styrene	ND	U	ppbv	0.20		
Tetrachloroethene	ND	U	ug/m3	1		
Tetrachloroethene	ND	U	ppbv	0.20		
Toluene	ND	U	ug/m3	0.8		
Toluene	ND	U	ppbv	0.20		
trans-1,2-Dichloroethene	ND	U	ug/m3	0.8		
trans-1,2-Dichloroethene	ND	U	ppbv	0.20		
trans-1,3-Dichloropropene	ND	U	ppbv	0.20		
trans-1,3-Dichloropropene	ND	U	ug/m3	0.9		
Trichloroethene	ND	U	ppbv	0.20		
Trichloroethene	ND	U	ug/m3	1		
Vinyl Chloride	ND	U	ppbv	0.20		
Vinyl Chloride	ND	U	ug/m3	0.5		

Surrogate Recoveries 96 % 70-130

LABORATORY CONTROL SAMPLE 2082169

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
1,1,1-Trichloroethane	1		ug/m3	1	100	60-140
1,1,1-Trichloroethane	0.2		ppbv	0.2	100	60-140
1,1,2,2-Tetrachloroethane	0.22		ppbv	0.2	108	60-140
1,1,2,2-Tetrachloroethane	1		ug/m3	1	108	60-140
1,1,2-Trichloroethane	0.21		ppbv	0.2	105	60-140
1,1,2-Trichloroethane	1		ug/m3	1	105	60-140
1,1-Dichloroethane	0.2		ppbv	0.2	102	60-140
1,1-Dichloroethane	0.8		ug/m3	0.8	102	60-140
1,1-Dichloroethene	0.18		ppbv	0.2	88	60-140
1,1-Dichloroethene	0.7		ug/m3	0.8	88	60-140



This is an addendum to the Certificate of Analysis.



1,2-Dibromoethane	0.21	ppbv	0.2	104	60-140
1,2-Dibromoethane	2	ug/m3	2	104	60-140
1,2-Dichlorobenzene	1	ug/m3	1	111	60-140
1,2-Dichlorobenzene	0.22	ppbv	0.2	111	60-140
1,2-Dichloroethane	0.21	ppbv	0.2	106	60-140
1,2-Dichloroethane	0.9	ug/m3	0.8	106	60-140
1,2-Dichloropropane	0.21	ppbv	0.2	106	60-140
1,2-Dichloropropane	1	ug/m3	0.9	106	60-140
1,3-Dichlorobenzene	0.23	ppbv	0.2	113	60-140
1,3-Dichlorobenzene	1	ug/m3	1	113	60-140
1,4-Dichlorobenzene	1	ug/m3	1	109	60-140
1,4-Dichlorobenzene	0.22	ppbv	0.2	109	60-140
1,4-Dioxane	0.13	ppbv	0.2	66	60-140
1,4-Dioxane	0.5	ug/m3	0.7	66	60-140
2-Butanone	0.19	ppbv	0.2	96	60-140
2-Butanone	0.6	ug/m3	0.6	96	60-140
2-Hexanone	0.17	ppbv	0.2	84	60-140
2-Hexanone	0.7	ug/m3	0.8	84	60-140
4-Methyl-2-Pentanone(MIBK)	0.6	ug/m3	0.8	73	60-140
4-Methyl-2-Pentanone(MIBK)	0.15	ppbv	0.2	73	60-140
Acetone	0.12	ppbv	0.2	60	60-140
Acetone	0.3	ug/m3	0.5	60	60-140
Benzene	0.21	ppbv	0.2	106	60-140
Benzene	0.7	ug/m3	0.6	106	60-140
Bromodichloromethane	0.19	ppbv	0.2	95	60-140
Bromodichloromethane	1	ug/m3	1	95	60-140
Bromoform	0.18	ppbv	0.2	92	60-140
Bromoform	2	ug/m3	2	92	60-140
Bromomethane	0.7	ug/m3	0.8	87	60-140
Bromomethane	0.17	ppbv	0.2	87	60-140
Carbon Tetrachloride	1	ug/m3	1	99	60-140
Carbon Tetrachloride	0.2	ppbv	0.2	99	60-140
Chlorobenzene	0.21	ppbv	0.2	105	60-140
Chlorobenzene	1	ug/m3	0.9	105	60-140
Chlorodibromomethane	0.19	ppbv	0.2	93	60-140
Chlorodibromomethane	2	ug/m3	2	93	60-140
Chloroform	0.22	ppbv	0.2	109	60-140
Chloroform	1	ug/m3	1	109	60-140
cis-1,2-Dichloroethene	0.7	ug/m3	0.8	94	60-140
cis-1,2-Dichloroethene	0.19	ppbv	0.2	94	60-140
cis-1,3-Dichloropropene	0.19	ppbv	0.2	93	60-140
cis-1,3-Dichloropropene	0.8	ug/m3	0.9	93	60-140
Ethylbenzene	0.19	ppbv	0.2	95	60-140
Ethylbenzene	0.8	ug/m3	0.9	95	60-140



Hexachlorobutadiene	0.16	ppbv	0.2	81	60-140
Hexachlorobutadiene	2	ug/m3	2	81	60-140
Methyl t-Butyl Ether	0.18	ppbv	0.2	91	60-140
Methyl t-Butyl Ether	0.7	ug/m3	0.7	91	60-140
Methylene Chloride	0.26	ppbv	0.2	132	60-140
Methylene Chloride	0.9	ug/m3	0.7	132	60-140
m-p-Xylene	0.38	ppbv	0.4	96	60-140
m-p-Xylene	2	ug/m3	2	96	60-140
Naphthalene	0.18	ppbv	0.2	92	60-140
Naphthalene	1	ug/m3	1	92	60-140
o-Xylene	0.18	ppbv	0.2	92	60-140
o-Xylene	0.8	ug/m3	0.9	92	60-140
Styrene	0.18	ppbv	0.2	89	60-140
Styrene	0.8	ug/m3	0.9	89	60-140
Tetrachloroethene	0.18	ppbv	0.2	91	60-140
Tetrachloroethene	1	ug/m3	1	91	60-140
Toluene	0.19	ppbv	0.2	96	60-140
Toluene	0.7	ug/m3	0.8	96	60-140
trans-1,2-Dichloroethene	0.8	ug/m3	0.8	100	60-140
trans-1,2-Dichloroethene	0.2	ppbv	0.2	100	60-140
trans-1,3-Dichloropropene	0.18	ppbv	0.2	92	60-140
trans-1,3-Dichloropropene	0.8	ug/m3	0.9	92	60-140
Trichloroethene	0.18	ppbv	0.2	89	60-140
Trichloroethene	1	ug/m3	1	89	60-140
Vinyl Chloride	0.19	ppbv	0.2	96	60-140
Vinyl Chloride	0.5	ug/m3	0.5	96	60-140
<i>Surrogate Recoveries</i>					
4-Bromofluorobenzene		%		101	70-130

Standard Acronyms/Flags	
I	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	LoD Limit of Detection
LOQ	LoQ Limit of Quantitation
DL	DoD Detection Limit
NC	Not Calculated
*	Result outside of QC limits
DIL	Dilution Factor

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 Mexico: Monterrey

**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2031370001	Bldg 5-1	TO-15	TO15 / 2575	TO-15	TO15 / 2575
2031370001	Bldg 5-1	TO-15	TO15 / 2576	TO-15	TO15 / 2576
2031370002	Bldg 5-2	TO-15	TO15 / 2575	TO-15	TO15 / 2575
2031370002	Bldg 5-2	TO-15	TO15 / 2576	TO-15	TO15 / 2576
2031370003	Bldg 5-3	TO-15	TO15 / 2576	TO-15	TO15 / 2576
2031370003	Bldg 5-3	TO-15	TO15 / 2577	TO-15	TO15 / 2577
2031370004	Bldg 5-6	TO-15	TO15 / 2576	TO-15	TO15 / 2576
2031370004	Bldg 5-6	TO-15	TO15 / 2577	TO-15	TO15 / 2577
2031370005	Bldg 5-SV2	TO-15	TO15 / 2576	TO-15	TO15 / 2576
2031370005	Bldg 5-SV2	TO-15	TO15 / 2577	TO-15	TO15 / 2577
2031370006	Bldg 5-SV3	TO-15	TO15 / 2576	TO-15	TO15 / 2576
2031370006	Bldg 5-SV3	TO-15	TO15 / 2577	TO-15	TO15 / 2577
2031370007	Bldg 5-SV4	TO-15	TO15 / 2576	TO-15	TO15 / 2576
2031370007	Bldg 5-SV4	TO-15	TO15 / 2577	TO-15	TO15 / 2577
2031370008	Bldg 5-SV5	TO-15	TO15 / 2576	TO-15	TO15 / 2576
2031370008	Bldg 5-SV5	TO-15	TO15 / 2577	TO-15	TO15 / 2577
2031370009	Bldg 5-SV6	TO-15	TO15 / 2577	TO-15	TO15 / 2577
2031370009	Bldg 5-SV6	TO-15	TO15 / 2579	TO-15	TO15 / 2579

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 152780  
**Prepared By:** Pernilla Haley **Date :** 10/15/2014  
**Matrix:** Air  
**Analyte Group :** Volatile Organics **Analytical Method :** EPA Method TO-15  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** 2031945  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
9/25/14	VOC TO-15		30 Days	10/8/14

**Sample temperature within QC limits:** NA - Air

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? No

If no, list sample ID where range was exceeded: See notes

**Equipment Field Blank ID :** NA

**Trip Blank ID :** NA

**Method Blank:** EPA TO-15 Yes

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

The % recovery was outside limits in the LCS or LCSD for methylene chloride and acetone in lab control samples. A J qualifier was added for acetone in samples BLDG3-SVE1 other data was not impacted since the analytical results were non-detect.

**Reviewed By:** RJC



October 24, 2014

Mr. Ray Cadorette  
CB& I - Canton - MA  
150 Royall Street  
Canton, MA 02021

## Certificate of Analysis

Revised Report - 10/24/2014 12:24:57 PM - See workorder comment section for explanation

Project Name:	<b>Varian Air Samples</b>	Workorder:	<b>2031945</b>
Purchase Order:	<b>915964-000</b>	Workorder ID:	<b>CVC002 Varian</b>

Dear Mr. Cadorette:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, September 30, 2014.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vicki A. Forney (Project Coordinator) at (717) 944-5541.

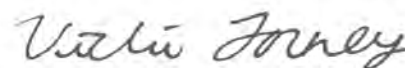
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Cathy Mainville

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*

Mrs. Vicki A. Forney  
Project Coordinator

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### SAMPLE SUMMARY

Workorder: 2031945 CVC002|Varian

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2031945001	Bldg 3 SVE 1	Air	9/25/2014 14:16	9/30/2014 08:02	Collected by Client
2031945002	Bldg 3 SVE 3	Air	9/25/2014 14:21	9/30/2014 08:02	Collected by Client
2031945003	Bldg 3 SVE 4	Air	9/25/2014 14:26	9/30/2014 08:02	Collected by Client

#### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".

#### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit

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## PROJECT SUMMARY

Workorder: 2031945 CVC002|Varian

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### Workorder Comments

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This report was modified on 10/14/14 to add the MassDEP form. VLF

### Sample Comments

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**Lab ID:** 2031945002      **Sample ID:** Bldg 3 SVE 3      **Sample Type:** SAMPLE

The reporting limits for the TO15 analytes were raised due to the dilution of the sample caused by the level of target compounds.

**Lab ID:** 2031945003      **Sample ID:** Bldg 3 SVE 4      **Sample Type:** SAMPLE

The reporting limits for the TO15 analytes were raised due to the dilution of the sample caused by the level of target compounds.

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### ALS Environmental Laboratory Locations Across North America

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Vancouver Waterloo · Winnipeg · Yellowknife    **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York    **Mexico:** Monterrey



**ANALYTICAL RESULTS**

Workorder: 2031945 CVC002|Varian

Lab ID: **2031945001**  
Sample ID: **Bldg 3 SVE 1**

Date Collected: 9/25/2014 14:16 Matrix: Air  
Date Received: 9/30/2014 08:02

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	290	2	ug/m3	5	TO-15		10/7/14 02:47	ECB	A
Benzene	ND		ug/m3	0.6	TO-15		10/8/14 04:24	ECB	A
Bromodichloromethane	ND		ug/m3	1	TO-15		10/8/14 04:24	ECB	A
Bromoform	ND		ug/m3	2	TO-15		10/8/14 04:24	ECB	A
Bromomethane	ND		ug/m3	0.8	TO-15		10/8/14 04:24	ECB	A
2-Butanone	63		ug/m3	0.6	TO-15		10/8/14 04:24	ECB	A
Carbon Tetrachloride	ND		ug/m3	1	TO-15		10/8/14 04:24	ECB	A
Chlorobenzene	ND		ug/m3	0.9	TO-15		10/8/14 04:24	ECB	A
Chlorodibromomethane	ND		ug/m3	2	TO-15		10/8/14 04:24	ECB	A
Chloroform	ND		ug/m3	1	TO-15		10/8/14 04:24	ECB	A
1,2-Dibromoethane	ND		ug/m3	2	TO-15		10/8/14 04:24	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	1	TO-15		10/8/14 04:24	ECB	A
1,3-Dichlorobenzene	ND		ug/m3	1	TO-15		10/8/14 04:24	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	1	TO-15		10/8/14 04:24	ECB	A
1,1-Dichloroethane	ND		ug/m3	0.8	TO-15		10/8/14 04:24	ECB	A
1,2-Dichloroethane	ND		ug/m3	0.8	TO-15		10/8/14 04:24	ECB	A
1,1-Dichloroethene	ND		ug/m3	0.8	TO-15		10/8/14 04:24	ECB	A
cis-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/8/14 04:24	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	0.8	TO-15		10/8/14 04:24	ECB	A
1,2-Dichloropropane	ND		ug/m3	0.9	TO-15		10/8/14 04:24	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/8/14 04:24	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	0.9	TO-15		10/8/14 04:24	ECB	A
1,4-Dioxane	ND		ug/m3	0.7	TO-15		10/8/14 04:24	ECB	A
Ethylbenzene	ND		ug/m3	0.9	TO-15		10/8/14 04:24	ECB	A
Hexachlorobutadiene	ND		ug/m3	2	TO-15		10/8/14 04:24	ECB	A
2-Hexanone	ND		ug/m3	0.8	TO-15		10/8/14 04:24	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	0.7	TO-15		10/8/14 04:24	ECB	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/m3	0.8	TO-15		10/8/14 04:24	ECB	A
Methylene Chloride	7		ug/m3	0.7	TO-15		10/8/14 04:24	ECB	A
Naphthalene	ND		ug/m3	1	TO-15		10/8/14 04:24	ECB	A
Styrene	ND		ug/m3	0.8	TO-15		10/8/14 04:24	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	1	TO-15		10/8/14 04:24	ECB	A
Tetrachloroethene	240		ug/m3	1	TO-15		10/8/14 04:24	ECB	A
Toluene	1		ug/m3	0.8	TO-15		10/8/14 04:24	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	1	TO-15		10/8/14 04:24	ECB	A
1,1,2-Trichloroethane	ND		ug/m3	1	TO-15		10/8/14 04:24	ECB	A

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**ANALYTICAL RESULTS**

Workorder: 2031945 CVC002|Varian

Lab ID: **2031945001**  
Sample ID: **Bldg 3 SVE 1**

Date Collected: 9/25/2014 14:16 Matrix: Air  
Date Received: 9/30/2014 08:02

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Trichloroethene	3		ug/m3	1	TO-15		10/8/14 04:24	ECB	A
Vinyl Chloride	ND		ug/m3	0.5	TO-15		10/8/14 04:24	ECB	A
o-Xylene	ND		ug/m3	0.9	TO-15		10/8/14 04:24	ECB	A
mp-Xylene	ND		ug/m3	2	TO-15		10/8/14 04:24	ECB	A
Acetone	120	1	ppbv	2.0	TO-15		10/7/14 02:47	ECB	A
Benzene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Bromodichloromethane	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Bromoform	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Bromomethane	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
2-Butanone	21		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Carbon Tetrachloride	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Chlorobenzene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Chlorodibromomethane	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Chloroform	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
1,2-Dibromoethane	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
1,2-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
1,3-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
1,4-Dichlorobenzene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
1,1-Dichloroethane	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
1,2-Dichloroethane	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
1,1-Dichloroethene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
cis-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
trans-1,2-Dichloroethene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
1,2-Dichloropropane	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
cis-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
trans-1,3-Dichloropropene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
1,4-Dioxane	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Ethylbenzene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Hexachlorobutadiene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
2-Hexanone	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Methyl t-Butyl Ether	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
4-Methyl-2-Pentanone(MIBK)	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Methylene Chloride	2.1		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Naphthalene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Styrene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
1,1,2,2-Tetrachloroethane	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Tetrachloroethene	35		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Toluene	0.27		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A

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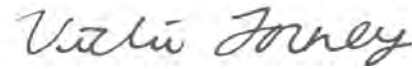
### ANALYTICAL RESULTS

Workorder: 2031945 CVC002|Varian

Lab ID: **2031945001**  
Sample ID: **Bldg 3 SVE 1**

Date Collected: 9/25/2014 14:16 Matrix: Air  
Date Received: 9/30/2014 08:02

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,1-Trichloroethane	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
1,1,2-Trichloroethane	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Trichloroethene	0.60		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
Vinyl Chloride	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
o-Xylene	ND		ppbv	0.20	TO-15		10/8/14 04:24	ECB	A
mp-Xylene	ND		ppbv	0.40	TO-15		10/8/14 04:24	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	98		%	70 - 130	TO-15		10/8/14 04:24	ECB	A
4-Bromofluorobenzene (S)	98		%	70 - 130	TO-15		10/7/14 02:47	ECB	A

  
Mrs. Vicki A. Forney  
Project Coordinator

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### ANALYTICAL RESULTS

Workorder: 2031945 CVC002|Varian

Lab ID: **2031945002**  
Sample ID: **Bldg 3 SVE 3**

Date Collected: 9/25/2014 14:21 Matrix: Air  
Date Received: 9/30/2014 08:02

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	1700		ug/m3	600	TO-15		10/8/14 13:48	ECB	A
Benzene	ND		ug/m3	6	TO-15		10/7/14 20:52	ECB	A
Bromodichloromethane	ND		ug/m3	13	TO-15		10/7/14 20:52	ECB	A
Bromoform	ND		ug/m3	21	TO-15		10/7/14 20:52	ECB	A
Bromomethane	ND		ug/m3	8	TO-15		10/7/14 20:52	ECB	A
2-Butanone	3200		ug/m3	1500	TO-15		10/9/14 15:10	ECB	A
Carbon Tetrachloride	ND		ug/m3	13	TO-15		10/7/14 20:52	ECB	A
Chlorobenzene	ND		ug/m3	9	TO-15		10/7/14 20:52	ECB	A
Chlorodibromomethane	ND		ug/m3	17	TO-15		10/7/14 20:52	ECB	A
Chloroform	ND		ug/m3	10	TO-15		10/7/14 20:52	ECB	A
1,2-Dibromoethane	ND		ug/m3	15	TO-15		10/7/14 20:52	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	12	TO-15		10/7/14 20:52	ECB	A
1,3-Dichlorobenzene	ND		ug/m3	12	TO-15		10/7/14 20:52	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	12	TO-15		10/7/14 20:52	ECB	A
1,1-Dichloroethane	ND		ug/m3	8	TO-15		10/7/14 20:52	ECB	A
1,2-Dichloroethane	ND		ug/m3	8	TO-15		10/7/14 20:52	ECB	A
1,1-Dichloroethene	ND		ug/m3	8	TO-15		10/7/14 20:52	ECB	A
cis-1,2-Dichloroethene	120		ug/m3	8	TO-15		10/7/14 20:52	ECB	A
trans-1,2-Dichloroethene	8		ug/m3	8	TO-15		10/7/14 20:52	ECB	A
1,2-Dichloropropane	ND		ug/m3	9	TO-15		10/7/14 20:52	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	9	TO-15		10/7/14 20:52	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	9	TO-15		10/7/14 20:52	ECB	A
1,4-Dioxane	ND		ug/m3	7	TO-15		10/7/14 20:52	ECB	A
Ethylbenzene	ND		ug/m3	9	TO-15		10/7/14 20:52	ECB	A
Hexachlorobutadiene	ND		ug/m3	21	TO-15		10/7/14 20:52	ECB	A
2-Hexanone	ND		ug/m3	8	TO-15		10/7/14 20:52	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	7	TO-15		10/7/14 20:52	ECB	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/m3	8	TO-15		10/7/14 20:52	ECB	A
Methylene Chloride	ND		ug/m3	7	TO-15		10/7/14 20:52	ECB	A
Naphthalene	ND		ug/m3	10	TO-15		10/7/14 20:52	ECB	A
Styrene	ND		ug/m3	8	TO-15		10/7/14 20:52	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	14	TO-15		10/7/14 20:52	ECB	A
Tetrachloroethene	410000		ug/m3	3400	TO-15		10/9/14 15:10	ECB	A
Toluene	ND		ug/m3	8	TO-15		10/7/14 20:52	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	11	TO-15		10/7/14 20:52	ECB	A
1,1,2-Trichloroethane	ND		ug/m3	11	TO-15		10/7/14 20:52	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031945 CVC002|Varian

Lab ID: **2031945002**  
Sample ID: **Bldg 3 SVE 3**

Date Collected: 9/25/2014 14:21 Matrix: Air  
Date Received: 9/30/2014 08:02

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Trichloroethene	5000		ug/m3	2700	TO-15		10/9/14 15:10	ECB	A
Vinyl Chloride	ND		ug/m3	5	TO-15		10/7/14 20:52	ECB	A
o-Xylene	ND		ug/m3	9	TO-15		10/7/14 20:52	ECB	A
mp-Xylene	ND		ug/m3	17	TO-15		10/7/14 20:52	ECB	A
Acetone	720		ppbv	250	TO-15		10/8/14 13:48	ECB	A
Benzene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Bromodichloromethane	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Bromoform	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Bromomethane	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
2-Butanone	1100		ppbv	500	TO-15		10/9/14 15:10	ECB	A
Carbon Tetrachloride	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Chlorobenzene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Chlorodibromomethane	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Chloroform	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
1,2-Dibromoethane	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
1,2-Dichlorobenzene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
1,3-Dichlorobenzene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
1,4-Dichlorobenzene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
1,1-Dichloroethane	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
1,2-Dichloroethane	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
1,1-Dichloroethene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
cis-1,2-Dichloroethene	31		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
trans-1,2-Dichloroethene	2.1		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
1,2-Dichloropropane	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
cis-1,3-Dichloropropene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
trans-1,3-Dichloropropene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
1,4-Dioxane	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Ethylbenzene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Hexachlorobutadiene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
2-Hexanone	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Methyl t-Butyl Ether	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
4-Methyl-2-Pentanone(MIBK)	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Methylene Chloride	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Naphthalene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Styrene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
1,1,2,2-Tetrachloroethane	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Tetrachloroethene	60000		ppbv	500	TO-15		10/9/14 15:10	ECB	A
Toluene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A

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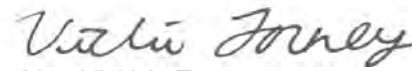
### ANALYTICAL RESULTS

Workorder: 2031945 CVC002|Varian

Lab ID: **2031945002**  
Sample ID: **Bldg 3 SVE 3**

Date Collected: 9/25/2014 14:21 Matrix: Air  
Date Received: 9/30/2014 08:02

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,1-Trichloroethane	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
1,1,2-Trichloroethane	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
Trichloroethene	930		ppbv	500	TO-15		10/9/14 15:10	ECB	A
Vinyl Chloride	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
o-Xylene	ND		ppbv	2.0	TO-15		10/7/14 20:52	ECB	A
mp-Xylene	ND		ppbv	4.0	TO-15		10/7/14 20:52	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	113		%	70 - 130	TO-15		10/7/14 20:52	ECB	A
4-Bromofluorobenzene (S)	104		%	70 - 130	TO-15		10/8/14 13:48	ECB	A
4-Bromofluorobenzene (S)	104		%	70 - 130	TO-15		10/9/14 15:10	ECB	A



Mrs. Vicki A. Forney  
Project Coordinator

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**ANALYTICAL RESULTS**

Workorder: 2031945 CVC002|Varian

Lab ID: **2031945003**  
Sample ID: **Bldg 3 SVE 4**

Date Collected: 9/25/2014 14:26 Matrix: Air  
Date Received: 9/30/2014 08:02

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
<b>VOLATILE ORGANICS @ STP</b>									
Acetone	3700		ug/m3	230	TO-15		10/8/14 14:28	ECB	A
Benzene	ND		ug/m3	6	TO-15		10/7/14 21:31	ECB	A
Bromodichloromethane	ND		ug/m3	13	TO-15		10/7/14 21:31	ECB	A
Bromoform	ND		ug/m3	21	TO-15		10/7/14 21:31	ECB	A
Bromomethane	ND		ug/m3	8	TO-15		10/7/14 21:31	ECB	A
2-Butanone	13000		ug/m3	280	TO-15		10/8/14 14:28	ECB	A
Carbon Tetrachloride	ND		ug/m3	13	TO-15		10/7/14 21:31	ECB	A
Chlorobenzene	ND		ug/m3	9	TO-15		10/7/14 21:31	ECB	A
Chlorodibromomethane	ND		ug/m3	17	TO-15		10/7/14 21:31	ECB	A
Chloroform	ND		ug/m3	10	TO-15		10/7/14 21:31	ECB	A
1,2-Dibromoethane	ND		ug/m3	15	TO-15		10/7/14 21:31	ECB	A
1,2-Dichlorobenzene	ND		ug/m3	12	TO-15		10/7/14 21:31	ECB	A
1,3-Dichlorobenzene	ND		ug/m3	12	TO-15		10/7/14 21:31	ECB	A
1,4-Dichlorobenzene	ND		ug/m3	12	TO-15		10/7/14 21:31	ECB	A
1,1-Dichloroethane	ND		ug/m3	8	TO-15		10/7/14 21:31	ECB	A
1,2-Dichloroethane	ND		ug/m3	8	TO-15		10/7/14 21:31	ECB	A
1,1-Dichloroethene	ND		ug/m3	8	TO-15		10/7/14 21:31	ECB	A
cis-1,2-Dichloroethene	ND		ug/m3	8	TO-15		10/7/14 21:31	ECB	A
trans-1,2-Dichloroethene	ND		ug/m3	8	TO-15		10/7/14 21:31	ECB	A
1,2-Dichloropropane	ND		ug/m3	9	TO-15		10/7/14 21:31	ECB	A
cis-1,3-Dichloropropene	ND		ug/m3	9	TO-15		10/7/14 21:31	ECB	A
trans-1,3-Dichloropropene	ND		ug/m3	9	TO-15		10/7/14 21:31	ECB	A
1,4-Dioxane	ND		ug/m3	7	TO-15		10/7/14 21:31	ECB	A
Ethylbenzene	ND		ug/m3	9	TO-15		10/7/14 21:31	ECB	A
Hexachlorobutadiene	ND		ug/m3	21	TO-15		10/7/14 21:31	ECB	A
2-Hexanone	ND		ug/m3	8	TO-15		10/7/14 21:31	ECB	A
Methyl t-Butyl Ether	ND		ug/m3	7	TO-15		10/7/14 21:31	ECB	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/m3	8	TO-15		10/7/14 21:31	ECB	A
Methylene Chloride	ND		ug/m3	7	TO-15		10/7/14 21:31	ECB	A
Naphthalene	ND		ug/m3	10	TO-15		10/7/14 21:31	ECB	A
Styrene	ND		ug/m3	8	TO-15		10/7/14 21:31	ECB	A
1,1,2,2-Tetrachloroethane	ND		ug/m3	14	TO-15		10/7/14 21:31	ECB	A
Tetrachloroethene	69000		ug/m3	640	TO-15		10/8/14 14:28	ECB	A
Toluene	ND		ug/m3	8	TO-15		10/7/14 21:31	ECB	A
1,1,1-Trichloroethane	ND		ug/m3	11	TO-15		10/7/14 21:31	ECB	A
1,1,2-Trichloroethane	ND		ug/m3	11	TO-15		10/7/14 21:31	ECB	A

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### ANALYTICAL RESULTS

Workorder: 2031945 CVC002|Varian

Lab ID: **2031945003**  
Sample ID: **Bldg 3 SVE 4**

Date Collected: 9/25/2014 14:26 Matrix: Air  
Date Received: 9/30/2014 08:02

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Trichloroethene	500		ug/m3	11	TO-15		10/7/14 21:31	ECB	A
Vinyl Chloride	ND		ug/m3	5	TO-15		10/7/14 21:31	ECB	A
o-Xylene	ND		ug/m3	9	TO-15		10/7/14 21:31	ECB	A
mp-Xylene	ND		ug/m3	17	TO-15		10/7/14 21:31	ECB	A
Acetone	1600		ppbv	95	TO-15		10/8/14 14:28	ECB	A
Benzene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Bromodichloromethane	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Bromoform	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Bromomethane	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
2-Butanone	4300		ppbv	95	TO-15		10/8/14 14:28	ECB	A
Carbon Tetrachloride	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Chlorobenzene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Chlorodibromomethane	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Chloroform	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
1,2-Dibromoethane	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
1,2-Dichlorobenzene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
1,3-Dichlorobenzene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
1,4-Dichlorobenzene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
1,1-Dichloroethane	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
1,2-Dichloroethane	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
1,1-Dichloroethene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
cis-1,2-Dichloroethene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
trans-1,2-Dichloroethene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
1,2-Dichloropropane	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
cis-1,3-Dichloropropene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
trans-1,3-Dichloropropene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
1,4-Dioxane	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Ethylbenzene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Hexachlorobutadiene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
2-Hexanone	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Methyl t-Butyl Ether	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
4-Methyl-2-Pentanone(MIBK)	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Methylene Chloride	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Naphthalene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Styrene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
1,1,2,2-Tetrachloroethane	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Tetrachloroethene	10000		ppbv	95	TO-15		10/8/14 14:28	ECB	A
Toluene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A

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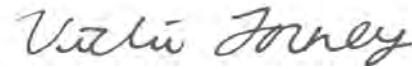
### ANALYTICAL RESULTS

Workorder: 2031945 CVC002|Varian

Lab ID: **2031945003**  
Sample ID: **Bldg 3 SVE 4**

Date Collected: 9/25/2014 14:26 Matrix: Air  
Date Received: 9/30/2014 08:02

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
1,1,1-Trichloroethane	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
1,1,2-Trichloroethane	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Trichloroethene	93		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
Vinyl Chloride	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
o-Xylene	ND		ppbv	2.0	TO-15		10/7/14 21:31	ECB	A
mp-Xylene	ND		ppbv	4.0	TO-15		10/7/14 21:31	ECB	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
4-Bromofluorobenzene (S)	111		%	70 - 130	TO-15		10/7/14 21:31	ECB	A
4-Bromofluorobenzene (S)	98		%	70 - 130	TO-15		10/8/14 14:28	ECB	A

  
Mrs. Vicki A. Forney  
Project Coordinator

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Vancouver Waterloo · Winnipeg · Yellowknife    United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York    Mexico: Monterrey



**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
2031945001	1	Bldg 3 SVE 1	TO-15	Acetone
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Acetone. The % Recovery was reported as 59 and the control limits were 60 to 140.				
2031945001	2	Bldg 3 SVE 1	TO-15	Acetone
The QC sample type LCS for method TO-15 was outside the control limits for the analyte Acetone. The % Recovery was reported as 59 and the control limits were 60 to 140.				

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COC #:   
 ALS Quot#

# AIR ANALYSIS CHAIN-OF-CUSTODY/FIELD TEST DATA SHEET

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/SAMPLER.

INSTRUCTIONS ON THE BACK.

34 Dogwood Lane  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430



**1. CLIENT INFORMATION**

Client Name/Address: **CB+J**  
**150 Royal St Condon Middletown**  
 Contact: **Raymond Cadorette**  
 Phone#: **617 589 6102**  
 Project Name/#: **Valion**

Bill To:  Normal Standard TAT is 10-12 business days  
 Rush-TAT subject to ALS approval and surcharges.

Approved by: **Raymond Cadorette (BIL)**  
 Email?  Fax?

**2. ANALYSES/METHOD REQUESTED**

No.	TO-15 Analyte	USE LIST	OTHER
1	X		
2	X		
3			
4			
5			
6			
7			
8			
9			
10			

**3. LABORATORY**

LABORATORY CANISTER CERTIFIED BY: **Paul Kennedy**  
 GC/MS Analyst Signature: **Paul Kennedy**  
 CANISTERS PREPARED BY: **Paul H. Simmons**  
 Name: **SL. GC/MS ANALYST**  
 Title: **9/18/14**  
 Custody Sealed Date/Time: **9/18/14**  
 Date Shipped to Client: **9/18/14**  
 Custody Seal #(s): **1391**  
 Courier/Tracking #: **7900 55916 5061**

**RECEIVING INFORMATION:**

Y	N	Initial
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>SK</b>
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	

COC Complete/Accurate?   
 Labels Complete/Accurate?   
 Cont. in Good Cond.?   
 Custody Seals Present?   
 (if present) Seals Intact?   
 Returned in ≤ 15 days?   
 Custody Seal #(s): **1391**

**4. FIELD DATA SHEET**

SAMPLE INFORMATION FOR TO-15	TO-15 FIELD DATA				LABORATORY RECORD	
	Sample Date	Start Time	Stop Time	Temp Deg C	Flow Controller No.	Canister Pressure (Psi)
1 <del>SS</del> Bldg 3 SUE 1	9/25/14	1415	1416		N/A	89
2 Bldg 3 SUE 3	9/25/14	1420	1431		N/A	30
3 Bldg 3 SUE 4	9/25/14	1425	1436		N/A	30
4						
5						
6						
7						
8						
9						
10						

**5. SAMPLED BY (Please Print):** **Paul Kennedy**

LOGGED BY (signature): **Paul Kennedy** 9/25/14

REVIEWED BY (signature): **Paul Kennedy** 9/25/14

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Paul Kennedy	9/25/14	1502	Paul Kennedy	9/25/14	1500
3					
5					
7					
9					

**6. PROJECT INFORMATION**

Standard  CLP-like   
 DOD  TO-15   
 Other

Deliverables Data:  Pick-up  Labor  Other:

State Samples Collected In:  NY  NJ  PA  NC  MA  other





ALS-Middletown

TO-15 Sample Receipt Checklist

Client ID: CBI
Horizon WO#: 203945
Sample Delivery Group ID:
Log In By/Date: BULL 10-1-14
(signature) [Signature]
Number of Shipping containers received: 1

Project Name/#: VARION
Date/Time received: 9/30/14 0800
Received By: J. SMITH
Project Manager Review (date) 10-1-14
(signature) [Signature]
Courier: FEDEX

Circle the response below as appropriate.

1. Did kit(s) come with a shipping slip (airbill, etc.)? YES NO NA
If YES, enter airbill numbers: 7900 5596 5001

Shipping Container Information:

2. Were shipping containers received without signs of tampering? YES NO NA
Comments:

3. Were custody seals present and intact? YES NO NA

4. Were custody seals numbers present? YES NO NA
List Custody Seal Numbers:

Sample Condition:

5. Were sample containers received intact without signs of tampering? YES NO NA
Comments:

Chain of Custody:

- 6. Did COC arrive with the samples? YES NO NA
7. Do sample ID/Sample Description(s) match samples submitted? YES NO NA
8. Is date and time of collection listed on the COC for all samples? YES NO NA
9. Is identification of sampler on COC? YES NO NA
10. Are requested test method(s) on COC? YES NO NA
11. Are necessary signatures on COC? YES NO NA
12. Was Internal COC initiated? (should always be YES) YES NO NA

Sample Integrity Usability:

- 13. Do sample containers match the COC? YES NO NA
14. Were sample canisters received within 15 days of shipment to client? YES NO NA

Anomalies or Non-Conformances:



**MassDEP Analytical Protocol Certification Form**

Laboratory Name: ALS Environmental

Project #: 2031945

Project Location: Varian

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
2031945-001 to -003

Matrices: Groundwater/Surface Water Soil/Sediment Drinking Water Air x Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC x CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="radio"/> Yes <input type="radio"/> No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="radio"/> Yes <input type="radio"/> No <sup>1</sup>
<b>Data User Note:</b> Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.		
<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="radio"/> Yes <input type="radio"/> No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes <input type="radio"/> No <sup>1</sup> <input checked="" type="radio"/>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature: Jennifer M. Stanhope Lamoreux

Position: Reporting Manager

Printed Name: Jennifer M. Stanhope Lamoreux

Date: 10/13/2014



# ALS Environmental

34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010, NY 11759, PA 22-293 DoD ELAP: AZLA 0818.01  
 State Certification: CT PH-0224, DE ID 11, GA 914, MA PA0102, MD 128, LA 04162, VA 421, WY EPA Region 8, WV 343

## QUALITY CONTROL DATA

**Workorder** 2031945 **Project Name** Varian  
**QC Batch** TO15 / 2577  
**QC Batch Method** TO-15 **Analysis Method** TO-15  
**Associated Lab Samples** 2031945001

Parameter	Original Result	Qualifiers	Units	Spike Conc.		
Acetone		U	ug/m3			
Acetone		U	ppbv			
<i>Surrogate Recoveries</i>						
4-Bromofluorobenzene						
2081636						
<b>METHOD BLANK</b>						
Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
Acetone	ND	U	ug/m3	0.5		
Acetone	ND	U	ppbv	0.20		
<i>Surrogate Recoveries</i>						
4-Bromofluorobenzene			%		98	70-130
2081634						
<b>LABORATORY CONTROL SAMPLE</b>						
Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Acetone	0.3		ug/m3	0.5	59*	60-140
Acetone	0.12		ppbv	0.2	59*	60-140



Surrogate Recoveries  
 4-Bromofluorobenzene 104 70-130 %

QC Batch TO15 / 2579

QC Batch Method TO-15 Analysis Method TO-15

Associated Lab Samples 2031945001 2031945002 2031945003

Parameter	Original Result	Qualifiers	Units	Spike Conc.
1,1,1-Trichloroethane		U	ppbv	
1,1,1-Trichloroethane		U	ug/m3	
1,1,2,2-Tetrachloroethane		U	ppbv	
1,1,2,2-Tetrachloroethane		U	ug/m3	
1,1,2-Trichloroethane		U	ppbv	
1,1,2-Trichloroethane		U	ug/m3	
1,1-Dichloroethane		U	ppbv	
1,1-Dichloroethane		U	ug/m3	
1,1-Dichloroethene		U	ppbv	
1,1-Dichloroethene		U	ug/m3	
1,2-Dibromoethane		U	ug/m3	
1,2-Dibromoethane		U	ppbv	
1,2-Dichlorobenzene		U	ug/m3	
1,2-Dichlorobenzene		U	ppbv	
1,2-Dichloroethane		U	ppbv	
1,2-Dichloroethane		U	ug/m3	
1,2-Dichloropropane		U	ppbv	
1,2-Dichloropropane		U	ug/m3	
1,3-Dichlorobenzene		U	ug/m3	
1,3-Dichlorobenzene		U	ppbv	
1,4-Dichlorobenzene		U	ppbv	
1,4-Dichlorobenzene		U	ug/m3	
1,4-Dioxane		U	ug/m3	
1,4-Dioxane		U	ppbv	
2-Butanone		U	ug/m3	
2-Butanone		U	ppbv	
2-Hexanone		U	ug/m3	
2-Hexanone		U	ppbv	
4-Methyl-2-Pentanone(MIBK)		U	ug/m3	
4-Methyl-2-Pentanone(MIBK)		U	ppbv	
Acetone		U	ppbv	

2082170

Workorder	2031945	Project Name	Varian
Acetone		U	ug/m3
Benzene		U	ppbv
Benzene		U	ug/m3
Bromodichloromethane		U	ug/m3
Bromodichloromethane		U	ppbv
Bromoform		U	ppbv
Bromoform		U	ug/m3
Bromomethane		U	ppbv
Bromomethane		U	ug/m3
Carbon Tetrachloride		U	ug/m3
Carbon Tetrachloride		U	ppbv
Chlorobenzene		U	ppbv
Chlorobenzene		U	ug/m3
Chlorodibromomethane		U	ppbv
Chlorodibromomethane		U	ug/m3
Chloroform		U	ug/m3
Chloroform		U	ppbv
cis-1,2-Dichloroethene		U	ppbv
cis-1,2-Dichloroethene		U	ug/m3
cis-1,3-Dichloropropene		U	ppbv
cis-1,3-Dichloropropene		U	ug/m3
Ethylbenzene		U	ug/m3
Ethylbenzene		U	ppbv
Hexachlorobutadiene		U	ppbv
Hexachlorobutadiene		U	ug/m3
Methyl t-Butyl Ether		U	ppbv
Methyl t-Butyl Ether		U	ug/m3
Methylene Chloride		U	ppbv
Methylene Chloride		U	ug/m3
mp-Xylene		U	ug/m3
mp-Xylene		U	ppbv
Naphthalene		U	ug/m3
Naphthalene		U	ppbv
o-Xylene		U	ug/m3
o-Xylene		U	ppbv
Styrene		U	ppbv
Styrene		U	ug/m3
Tetrachloroethene		U	ppbv
Tetrachloroethene		U	ug/m3
Toluene		U	ug/m3
Toluene		U	ppbv
trans-1,2-Dichloroethene		U	ppbv
trans-1,2-Dichloroethene		U	ug/m3
trans-1,3-Dichloropropene		U	ppbv



trans-1,3-Dichloropropene	U	ug/m3
Trichloroethene	U	ppbv
Trichloroethene	U	ug/m3
Vinyl Chloride	U	ppbv
Vinyl Chloride	U	ug/m3

Surrogate Recoveries

4-Bromofluorobenzene

METHOD BLANK

2082168

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
1,1,1-Trichloroethane	ND	U	ppbv	0.20		
1,1,1-Trichloroethane	ND	U	ug/m3	1		
1,1,2,2-Tetrachloroethane	ND	U	ug/m3	1		
1,1,2,2-Tetrachloroethane	ND	U	ppbv	0.20		
1,1,2-Trichloroethane	ND	U	ppbv	0.20		
1,1,2-Trichloroethane	ND	U	ug/m3	1		
1,1-Dichloroethane	ND	U	ug/m3	0.8		
1,1-Dichloroethane	ND	U	ppbv	0.20		
1,1-Dichloroethane	ND	U	ppbv	0.20		
1,1-Dichloroethane	ND	U	ug/m3	0.8		
1,1-Dichloroethane	ND	U	ppbv	0.20		
1,2-Dibromomethane	ND	U	ppbv	0.20		
1,2-Dibromomethane	ND	U	ug/m3	2		
1,2-Dichlorobenzene	ND	U	ug/m3	1		
1,2-Dichlorobenzene	ND	U	ppbv	0.20		
1,2-Dichlorobenzene	ND	U	ppbv	0.20		
1,2-Dichloroethane	ND	U	ug/m3	0.8		
1,2-Dichloroethane	ND	U	ppbv	0.20		
1,2-Dichloropropane	ND	U	ppbv	0.20		
1,2-Dichloropropane	ND	U	ug/m3	0.9		
1,3-Dichlorobenzene	ND	U	ppbv	0.20		
1,3-Dichlorobenzene	ND	U	ug/m3	1		
1,4-Dichlorobenzene	ND	U	ug/m3	1		
1,4-Dichlorobenzene	ND	U	ppbv	0.20		
1,4-Dioxane	ND	U	ug/m3	0.7		
1,4-Dioxane	ND	U	ppbv	0.20		
2-Butanone	ND	U	ppbv	0.20		
2-Butanone	ND	U	ug/m3	0.6		
2-Hexanone	ND	U	ppbv	0.20		
2-Hexanone	ND	U	ug/m3	0.8		
4-Methyl-2-Pentanone(MIBK)	ND	U	ppbv	0.20		
4-Methyl-2-Pentanone(MIBK)	ND	U	ug/m3	0.8		
Acetone	ND	U	ppbv	0.20		

This is an addendum to the Certificate of Analysis.



Compound	Unit	Value
Acetone	ND	
Benzene	ND	0.5
Benzene	U	0.6
Bromodichloromethane	U	0.20
Bromodichloromethane	U	0.20
Bromoform	U	1
Bromoform	U	2
Bromoform	U	0.20
Bromomethane	U	0.20
Bromomethane	U	0.20
Bromomethane	U	0.8
Carbon Tetrachloride	U	1
Carbon Tetrachloride	U	0.20
Chlorobenzene	U	0.20
Chlorobenzene	U	0.20
Chlorodibromomethane	U	0.9
Chlorodibromomethane	U	2
Chlorodibromomethane	U	0.20
Chloroform	U	1
Chloroform	U	0.20
Chloroform	U	0.20
cis-1,2-Dichloroethene	U	0.8
cis-1,2-Dichloroethene	U	0.20
cis-1,3-Dichloropropene	U	0.20
cis-1,3-Dichloropropene	U	0.20
Ethylbenzene	U	0.9
Ethylbenzene	U	0.9
Ethylbenzene	U	0.20
Hexachlorobutadiene	U	2
Hexachlorobutadiene	U	0.20
Hexachlorobutadiene	U	0.20
Methyl t-Butyl Ether	U	0.7
Methyl t-Butyl Ether	U	0.20
Methylene Chloride	U	0.7
Methylene Chloride	U	0.20
mp-Xylene	U	2
mp-Xylene	U	0.40
mp-Xylene	U	0.20
Naphthalene	U	1
Naphthalene	U	0.20
o-Xylene	U	0.20
o-Xylene	U	0.9
Styrene	U	0.8
Styrene	U	0.20
Tetrachloroethene	U	1
Tetrachloroethene	U	0.20
Toluene	U	0.8
Toluene	U	0.20
trans-1,2-Dichloroethene	U	0.8
trans-1,2-Dichloroethene	U	0.20
trans-1,3-Dichloropropene	U	0.8
trans-1,3-Dichloropropene	U	0.20

trans-1,3-Dichloropropene ug/m3 0.9  
 Trichloroethene ppbv 0.20  
 Trichloroethene ug/m3 1  
 Vinyl Chloride ppbv 0.20  
 Vinyl Chloride ug/m3 0.5

Surrogate Recoveries

4-Bromofluorobenzene % 96 70-130

LABORATORY CONTROL SAMPLE 2082169

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
1,1,1-Trichloroethane	1		ug/m3	1	100	60-140
1,1,1-Trichloroethane	0.2		ppbv	0.2	100	60-140
1,1,2,2-Tetrachloroethane	0.22		ppbv	0.2	108	60-140
1,1,2,2-Tetrachloroethane	1		ug/m3	1	108	60-140
1,1,2-Trichloroethane	0.21		ppbv	0.2	105	60-140
1,1,2-Trichloroethane	1		ug/m3	1	105	60-140
1,1-Dichloroethane	0.2		ppbv	0.2	102	60-140
1,1-Dichloroethane	0.8		ug/m3	0.8	102	60-140
1,1-Dichloroethane	0.18		ppbv	0.2	88	60-140
1,1-Dichloroethane	0.7		ug/m3	0.8	88	60-140
1,2-Dibromoethane	0.21		ppbv	0.2	104	60-140
1,2-Dibromoethane	2		ug/m3	2	104	60-140
1,2-Dichlorobenzene	1		ug/m3	1	111	60-140
1,2-Dichlorobenzene	0.22		ppbv	0.2	111	60-140
1,2-Dichloroethane	0.21		ppbv	0.2	106	60-140
1,2-Dichloroethane	0.9		ug/m3	0.8	106	60-140
1,2-Dichloropropane	0.21		ppbv	0.2	106	60-140
1,2-Dichloropropane	1		ug/m3	0.9	106	60-140
1,3-Dichlorobenzene	0.23		ppbv	0.2	113	60-140
1,3-Dichlorobenzene	1		ug/m3	1	113	60-140
1,4-Dichlorobenzene	1		ug/m3	1	109	60-140
1,4-Dichlorobenzene	0.22		ppbv	0.2	109	60-140
1,4-Dioxane	0.13		ppbv	0.2	66	60-140
1,4-Dioxane	0.5		ug/m3	0.7	66	60-140
2-Butanone	0.19		ppbv	0.2	96	60-140
2-Butanone	0.6		ug/m3	0.6	96	60-140
2-Hexanone	0.17		ppbv	0.2	84	60-140
2-Hexanone	0.7		ug/m3	0.8	84	60-140
4-Methyl-2-Pentanone(MIBK)	0.6		ug/m3	0.8	73	60-140
4-Methyl-2-Pentanone(MIBK)	0.15		ppbv	0.2	73	60-140
Acetone	0.12		ppbv	0.2	60	60-140

Compound	Concentration	Unit	Sample ID	Method
Acetone	0.3	ug/m3	60	60-140
Benzene	0.21	ppbv	106	60-140
Benzene	0.7	ug/m3	106	60-140
Bromodichloromethane	0.19	ppbv	95	60-140
Bromodichloromethane	1	ug/m3	95	60-140
Bromoform	0.18	ppbv	92	60-140
Bromoform	2	ug/m3	92	60-140
Bromomethane	0.7	ug/m3	87	60-140
Bromomethane	0.17	ppbv	87	60-140
Carbon Tetrachloride	1	ug/m3	99	60-140
Carbon Tetrachloride	0.2	ppbv	99	60-140
Chlorobenzene	0.21	ppbv	105	60-140
Chlorobenzene	1	ug/m3	105	60-140
Chlorodibromomethane	0.19	ppbv	93	60-140
Chlorodibromomethane	2	ug/m3	93	60-140
Chloroform	0.22	ppbv	109	60-140
Chloroform	1	ug/m3	109	60-140
cis-1,2-Dichloroethene	0.7	ug/m3	94	60-140
cis-1,2-Dichloroethene	0.19	ppbv	94	60-140
cis-1,3-Dichloropropene	0.19	ppbv	93	60-140
cis-1,3-Dichloropropene	0.8	ug/m3	93	60-140
Ethylbenzene	0.19	ppbv	95	60-140
Ethylbenzene	0.8	ug/m3	95	60-140
Hexachlorobutadiene	0.16	ppbv	81	60-140
Hexachlorobutadiene	2	ug/m3	81	60-140
Methyl t-Butyl Ether	0.18	ppbv	91	60-140
Methyl t-Butyl Ether	0.7	ug/m3	91	60-140
Methylene Chloride	0.26	ppbv	132	60-140
Methylene Chloride	0.9	ug/m3	132	60-140
mp-Xylene	0.38	ppbv	96	60-140
mp-Xylene	2	ug/m3	96	60-140
Naphthalene	0.18	ppbv	92	60-140
Naphthalene	1	ug/m3	92	60-140
o-Xylene	0.18	ppbv	92	60-140
o-Xylene	0.8	ug/m3	92	60-140
Styrene	0.18	ppbv	89	60-140
Styrene	0.8	ug/m3	89	60-140
Tetrachloroethene	0.18	ppbv	91	60-140
Tetrachloroethene	1	ug/m3	91	60-140
Toluene	0.19	ppbv	96	60-140
Toluene	0.7	ug/m3	96	60-140
trans-1,2-Dichloroethene	0.8	ug/m3	100	60-140
trans-1,2-Dichloroethene	0.2	ppbv	100	60-140
trans-1,3-Dichloropropene	0.18	ppbv	92	60-140



Workorder	2031945	Project Name	Varian
trans-1,3-Dichloropropene	0.8	ug/m3	0.9
Trichloroethene	0.18	ppbv	0.2
Trichloroethene	1	ug/m3	1
Vinyl Chloride	0.19	ppbv	0.2
Vinyl Chloride	0.5	ug/m3	0.5
Surrogate Recoveries			
4-Bromofluorobenzene		%	101
			70-130

QC Batch TO15 / 2580

QC Batch Method TO-15 Analysis Method TO-15

Associated Lab Samples 2031945002 2031945003

METHOD BLANK 2082770

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
1,1,1-Trichloroethane	ND	U	ug/m3	1		
1,1,1-Trichloroethane	ND	U	ppbv	0.20		
1,1,2,2-Tetrachloroethane	ND	U	ppbv	0.20		
1,1,2,2-Tetrachloroethane	ND	U	ug/m3	1		
1,1,2-Trichloroethane	ND	U	ppbv	0.20		
1,1,2-Trichloroethane	ND	U	ug/m3	1		
1,1-Dichloroethane	ND	U	ppbv	0.20		
1,1-Dichloroethane	ND	U	ug/m3	0.8		
1,1-Dichloroethene	ND	U	ppbv	0.20		
1,1-Dichloroethene	ND	U	ug/m3	0.8		
1,2-Dibromoethane	ND	U	ppbv	0.20		
1,2-Dibromoethane	ND	U	ug/m3	2		
1,2-Dichlorobenzene	ND	U	ug/m3	1		
1,2-Dichlorobenzene	ND	U	ppbv	0.20		
1,2-Dichloroethane	ND	U	ppbv	0.20		
1,2-Dichloroethane	ND	U	ug/m3	0.8		
1,2-Dichloropropane	ND	U	ppbv	0.20		
1,2-Dichloropropane	ND	U	ug/m3	0.9		
1,3-Dichlorobenzene	ND	U	ppbv	0.20		
1,3-Dichlorobenzene	ND	U	ug/m3	1		
1,4-Dichlorobenzene	ND	U	ppbv	0.20		
1,4-Dichlorobenzene	ND	U	ug/m3	1		
1,4-Dioxane	ND	U	ug/m3	0.7		
1,4-Dioxane	ND	U	ppbv	0.20		
2-Butanone	ND	U	ppbv	0.20		
2-Butanone	ND	U	ug/m3	0.6		

This is an addendum to the Certificate of Analysis.



Workorder	2031945	Project Name	Varian
2-Hexanone	ND	U	0.20
2-Hexanone	ND	U	0.8
4-Methyl-2-Pentanone(MIBK)	ND	U	0.20
4-Methyl-2-Pentanone(MIBK)	ND	U	0.8
Acetone	ND	U	0.20
Acetone	ND	U	0.5
Benzene	ND	U	0.6
Benzene	ND	U	0.20
Bromodichloromethane	ND	U	0.20
Bromodichloromethane	ND	U	1
Bromoform	ND	U	0.20
Bromoform	ND	U	2
Bromomethane	ND	U	0.20
Bromomethane	ND	U	0.8
Carbon Tetrachloride	ND	U	1
Carbon Tetrachloride	ND	U	0.20
Chlorobenzene	ND	U	0.20
Chlorobenzene	ND	U	0.9
Chlorodibromomethane	ND	U	0.20
Chlorodibromomethane	ND	U	2
Chloroform	ND	U	0.20
Chloroform	ND	U	1
cis-1,2-Dichloroethene	ND	U	0.20
cis-1,2-Dichloroethene	ND	U	0.8
cis-1,3-Dichloropropene	ND	U	0.20
cis-1,3-Dichloropropene	ND	U	0.9
Ethylbenzene	ND	U	0.9
Ethylbenzene	ND	U	0.20
Hexachlorobutadiene	ND	U	0.20
Hexachlorobutadiene	ND	U	2
Methyl t-Butyl Ether	ND	U	0.20
Methyl t-Butyl Ether	ND	U	0.7
Methylene Chloride	ND	U	0.20
Methylene Chloride	ND	U	0.7
mp-Xylene	ND	U	0.40
mp-Xylene	ND	U	2
Naphthalene	ND	U	0.20
Naphthalene	ND	U	1
o-Xylene	ND	U	0.20
o-Xylene	ND	U	0.9
Styrene	ND	U	0.20
Styrene	ND	U	0.8
Tetrachloroethene	ND	U	1
Tetrachloroethene	ND	U	0.20

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
Toluene	ND	U	ppbv	0.20		
Toluene	ND	U	ug/m3	0.8		
trans-1,2-Dichloroethene	ND	U	ppbv	0.20		
trans-1,2-Dichloroethene	ND	U	ug/m3	0.8		
trans-1,3-Dichloropropene	ND	U	ppbv	0.20		
trans-1,3-Dichloropropene	ND	U	ug/m3	0.9		
Trichloroethene	ND	U	ppbv	0.20		
Trichloroethene	ND	U	ug/m3	1		
Vinyl Chloride	ND	U	ug/m3	0.5		
Vinyl Chloride	ND	U	ppbv	0.20		

Surrogate Recoveries 98 70-130

LABORATORY CONTROL SAMPLE 2082771

Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
1,1,1-Trichloroethane	0.22		ppbv	0.2	112	50-140
1,1,1-Trichloroethane	1		ug/m3	1	112	50-140
1,1,2,2-Tetrachloroethane	0.25		ppbv	0.2	125	50-140
1,1,2,2-Tetrachloroethane	2		ug/m3	1	125	50-140
1,1,2-Trichloroethane	0.25		ppbv	0.2	125	50-140
1,1,2-Trichloroethane	1		ug/m3	1	125	50-140
1,1-Dichloroethane	0.25		ppbv	0.2	123	50-140
1,1-Dichloroethane	1		ug/m3	0.8	123	50-140
1,1-Dichloroethene	0.19		ppbv	0.2	97	50-140
1,1-Dichloroethene	0.8		ug/m3	0.8	97	50-140
1,2-Dibromoethane	0.23		ppbv	0.2	115	50-140
1,2-Dibromoethane	2		ug/m3	2	115	50-140
1,2-Dichlorobenzene	1		ug/m3	1	119	50-140
1,2-Dichlorobenzene	0.24		ppbv	0.2	119	50-140
1,2-Dichloroethane	0.26		ppbv	0.2	129	50-140
1,2-Dichloroethane	1		ug/m3	0.8	129	50-140
1,2-Dichloropropane	0.25		ppbv	0.2	124	50-140
1,2-Dichloropropane	1		ug/m3	0.9	124	50-140
1,3-Dichlorobenzene	0.24		ppbv	0.2	121	50-140
1,3-Dichlorobenzene	1		ug/m3	1	121	50-140
1,4-Dichlorobenzene	0.23		ppbv	0.2	117	50-140
1,4-Dichlorobenzene	1		ug/m3	1	117	50-140
1,4-Dioxane	0.5		ug/m3	0.7	72	50-140
1,4-Dioxane	0.14		ppbv	0.2	72	50-140
2-Butanone	0.23		ppbv	0.2	114	50-140
2-Butanone	0.7		ug/m3	0.6	114	50-140





Compound	Concentration	Unit	Limit	Result
2-Hexanone	0.19	ppbv	0.2	94
2-Hexanone	0.8	ug/m3	0.8	94
4-Methyl-2-Pentanone(MIBK)	0.2	ppbv	0.2	100
4-Methyl-2-Pentanone(MIBK)	0.8	ug/m3	0.8	100
Acetone	0.4	ug/m3	0.5	85
Acetone	0.17	ppbv	0.2	85
Benzene	0.24	ppbv	0.2	120
Benzene	0.8	ug/m3	0.6	120
Bromodichloromethane	0.25	ppbv	0.2	123
Bromodichloromethane	2	ug/m3	1	123
Bromoform	0.22	ppbv	0.2	109
Bromoform	2	ug/m3	2	109
Bromomethane	0.8	ug/m3	0.8	107
Bromomethane	0.21	ppbv	0.2	107
Carbon Tetrachloride	1	ug/m3	1	118
Carbon Tetrachloride	0.24	ppbv	0.2	118
Chlorobenzene	1	ug/m3	0.9	130
Chlorobenzene	0.26	ppbv	0.2	130
Chlorodibromomethane	0.22	ppbv	0.2	108
Chlorodibromomethane	2	ug/m3	2	108
Chloroform	0.26	ppbv	0.2	131
Chloroform	1	ug/m3	1	131
cis-1,2-Dichloroethene	0.22	ppbv	0.2	111
cis-1,2-Dichloroethene	0.9	ug/m3	0.8	111
cis-1,3-Dichloropropene	0.22	ppbv	0.2	112
cis-1,3-Dichloropropene	1	ug/m3	0.9	112
Ethylbenzene	0.9	ug/m3	0.9	104
Ethylbenzene	0.21	ppbv	0.2	104
Hexachlorobutadiene	0.2	ppbv	0.2	100
Hexachlorobutadiene	2	ug/m3	2	100
Methyl t-Butyl Ether	0.21	ppbv	0.2	107
Methyl t-Butyl Ether	0.8	ug/m3	0.7	107
Methylene Chloride	0.28	ppbv	0.2	141*
Methylene Chloride	1	ug/m3	0.7	141*
m-p-Xylene	0.42	ppbv	0.4	104
m-p-Xylene	2	ug/m3	2	104
Naphthalene	0.19	ppbv	0.2	94
Naphthalene	1	ug/m3	1	94
o-Xylene	0.21	ppbv	0.2	104
o-Xylene	0.9	ug/m3	0.9	104
Styrene	0.19	ppbv	0.2	94
Styrene	0.8	ug/m3	0.9	94
Tetrachloroethene	2	ug/m3	1	114
Tetrachloroethene	0.23	ppbv	0.2	114

Workorder	2031945	Project Name	Varian
Toluene	0.21	ppbv	0.2
Toluene	0.8	ug/m3	0.8
trans-1,2-Dichloroethene	0.22	ppbv	0.2
trans-1,2-Dichloroethene	0.9	ug/m3	0.8
trans-1,3-Dichloropropene	0.21	ppbv	0.2
trans-1,3-Dichloropropene	1	ug/m3	0.9
Trichloroethene	0.21	ppbv	0.2
Trichloroethene	1	ug/m3	1
Vinyl Chloride	0.6	ug/m3	0.5
Vinyl Chloride	0.24	ppbv	0.2
<i>Surrogate Recoveries</i>			
4-Bromofluorobenzene		%	101
			70-130

**QC Batch** TO15 / 2582  
**QC Batch Method** TO-15 **Analysis Method** TO-15  
**Associated Lab Samples** 2031945002

Parameter	Original Result	Qualifiers	Units	Spike Conc.
2-Butanone		U	ug/m3	
2-Butanone		U	ppbv	
Tetrachloroethene		U	ppbv	
Tetrachloroethene		U	ug/m3	
Trichloroethene		U	ug/m3	
Trichloroethene		U	ppbv	
<i>Surrogate Recoveries</i>				
4-Bromofluorobenzene				

Parameter	Blank Result	Qualifiers	Units	Reporting Limit	% Rec	% Rec Limits
2-Butanone	ND	U	ug/m3	0.6		
2-Butanone	ND	U	ppbv	0.20		
Tetrachloroethene	ND	U	ug/m3	1		
Tetrachloroethene	ND	U	ppbv	0.20		
Trichloroethene	ND	U	ppbv	0.20		
Trichloroethene	ND	U	ug/m3	1		



Parameter	LCS Result	Qualifiers	Units	Spike Conc.	LCS % Rec	% Rec Limits
<i>Surrogate Recoveries</i>						
4-Bromofluorobenzene			%		97	70-130
<b>LABORATORY CONTROL SAMPLE 2083355</b>						
2-Butanone	0.7		ug/m3	0.6	119	60-140
2-Butanone	0.24		ppbv	0.2	119	60-140
Tetrachloroethene	2		ug/m3	1	121	60-140
Tetrachloroethene	0.24		ppbv	0.2	121	60-140
Trichloroethene	0.24		ppbv	0.2	119	60-140
Trichloroethene	1		ug/m3	1	119	60-140
<i>Surrogate Recoveries</i>						
4-Bromofluorobenzene			%		100	70-130



Standard Acronyms/Flags	Description
J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - Indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLimit	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
NC	Not Calculated
*	Result outside of QC limits
DIL	Dilution Factor

**ALS Environmental Laboratory Locations Across North America**

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay  
 Vancouver · Waterloo · Winnipeg · Yellowknife  
 United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middleton · Salt Lake City · Spring City · York Mexico: Monterrey



QUALITY CONTROL DATA CROSS-REFERENCE TABLE

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2031945001	Bldg 3 SVE 1	TO-15	TO15 / 2577	TO-15	TO15 / 2577
2031945001	Bldg 3 SVE 1	TO-15	TO15 / 2579	TO-15	TO15 / 2579
2031945002	Bldg 3 SVE 3	TO-15	TO15 / 2579	TO-15	TO15 / 2579
2031945002	Bldg 3 SVE 3	TO-15	TO15 / 2580	TO-15	TO15 / 2580
2031945002	Bldg 3 SVE 3	TO-15	TO15 / 2582	TO-15	TO15 / 2582
2031945003	Bldg 3 SVE 4	TO-15	TO15 / 2579	TO-15	TO15 / 2579
2031945003	Bldg 3 SVE 4	TO-15	TO15 / 2580	TO-15	TO15 / 2580

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150151.21  
**Prepared By:** Dale Dailey **Date :** 5/22/2014  
**Matrix:** Air  
**Analyte Group :** Volatile Organics **Analytical Method :** EPA Method TO-15  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1402251  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/1/14	VOC TO-15		30 Days	4/7/14

**Sample temperature within QC limits:** NA - Air

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? Yes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :** NA

**Trip Blank ID :** NA

**Method Blank:** EPA TO-15 4/7/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method. All initial and continuing calibrations were compliant.

Various compounds for all samples have been flagged with an "E" as being outside the calibration range of the instrument. The samples were repeated at dilutions and both sets of data have been reported out.

**Reviewed By:** Pernilla Haley, 6/9/14



April 11, 2014

Service Request No: R1402251

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly Air Samples/150151-05**

Dear Mr. Cadorette:

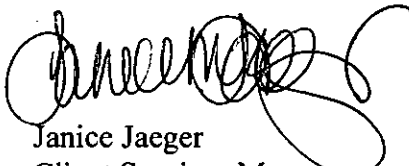
Enclosed are the results of the sample(s) submitted to our laboratory on April 2, 2014. For your reference, these analyses have been assigned our service request number **R1402251**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**



Janice Jaeger  
Client Services Manager

Page 1 of 26



## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150151

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1402251-001-003

Matrices: Groundwater/Surface Water    Soil/Sediment    Drinking Water    Air  Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B <input checked="" type="checkbox"/>
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X Yes    No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X Yes    No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X Yes    No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X Yes    No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes    No Yes <input checked="" type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X Yes    No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

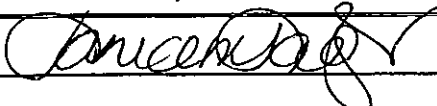
<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X Yes    No <sup>1</sup>
----------	---	--------------------------

**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X Yes    No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes    X No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature: 

Position: Client Services  
Manager

Printed Name: Janice Jaeger

Date: 04/11/14      **00002**

## ALS Environmental

**Client:** CB&I.  
**Project:** Varian Beverly  
**Sample Matrix:** Air

**Service Request No.:** R1402251  
**Project No.:** 150151-06  
**Date Received:** 04/02/14

### CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS environmental. This report contains analytical results for samples designated for Tier II, MASS. CAM deliverables. When appropriate to the method, blank and LCS results have been reported with each analytical test.

#### Sample Receipt

CB&I air samples were collected on 04/01/14 and received at ALS in good condition as noted on the receipt and preservation check form. The samples were stored in the laboratory at room temperature prior to analysis. See the ALS case narrative for a cross-reference between Client ID and ALS Job #.

#### TO - 15 Air Analysis

Three air samples were analyzed for a site list of Volatile Organics by EPA method TO-15.

All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method.

Various compounds for all samples have been flagged with an "E" as being outside the calibration range of the instrument. The samples were repeated at dilutions and both sets of data have been reported out.

All initial and continuing calibrations were compliant.

All surrogate standard recoveries were within QC limits.

The Method blanks were free of contamination.

The LCS recoveries were all within QC limits of 70 – 130 %.

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402251

<u>Lab ID</u>	<u>Client ID</u>
R1402251-001	BLDG 5-5
R1402251-002	BLDG 5-6
R1402251-003	BLDG 8-1

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of:* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

A handwritten signature in cursive script, reading "Oscar C. Parrolo".

*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CACO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	

June 25, 2013

\*= Provisional Certification

Page 1 of 2

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COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032      ALS ENVIRONMENTAL ROCHESTER  
                 ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014

<u>Analytes</u>	<u>Methods</u>
CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 365.1
PHOSPHORUS, TOTAL	EPA 365.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608





**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly Air Samples/150151-05  
**Sample Matrix:** Air  
**Sample Name:** BLDG 5-5  
**Lab Code:** R1402251-001

**Service Request:** R1402251  
**Date Collected:** 4/ 1/14 1545  
**Date Received:** 4/ 2/14

**Analytical Method:** TO-15

**Date Analyzed:** 4/7/14 1149  
**Canister Dilution Factor:** 1.30

Initial Pressure (psig): -0.69                      Final Pressure (psig): 3.50

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	5.4	14	14	5.7	5.7	U
74-83-9	Bromomethane	5.4	100	100	27	27	U
67-64-1	Acetone	5.4	3900	1200	1700	510	D
75-35-4	1,1-Dichloroethene	5.4	110	110	27	27	U
75-09-2	Methylene Chloride	5.4	91	91	26	26	U
156-60-5	trans-1,2-Dichloroethene	5.4	110	110	27	27	U
75-34-3	1,1-Dichloroethane	5.4	110	110	27	27	U
1634-04-4	Methyl tert-Butyl Ether	5.4	190	190	53	53	U
78-93-3	2-Butanone (MEK)	5.4	160	160	53	53	U
156-59-2	cis-1,2-Dichloroethene	5.4	110	110	27	27	U
67-66-3	Chloroform	5.4	130	130	27	27	U
107-06-2	1,2-Dichloroethane	5.4	110	110	27	27	U
71-55-6	1,1,1-Trichloroethane (TCA)	5.4	140	140	26	26	U
71-43-2	Benzene	5.4	84	84	26	26	U
56-23-5	Carbon Tetrachloride	5.4	17	17	2.7	2.7	U
78-87-5	1,2-Dichloropropane	5.4	120	120	27	27	U
75-27-4	Bromodichloromethane	5.4	36	36	5.4	5.4	U
79-01-6	Trichloroethene (TCE)	5.4	14	14	2.7	2.7	U
123-91-1	1,4-Dioxane	5.4	1200	1200	330	330	U
10061-01-5	cis-1,3-Dichloropropene	5.4	240	240	53	53	U
108-10-1	4-Methyl-2-pentanone (MIBK)	5.4	220	220	53	53	U
10061-02-6	trans-1,3-Dichloropropene	5.4	120	120	27	27	U
79-00-5	1,1,2-Trichloroethane	5.4	140	140	26	26	U
108-88-3	Toluene	5.4	99	99	26	26	U
591-78-6	2-Hexanone	5.4	110	110	26	26	U
124-48-1	Dibromochloromethane	5.4	46	46	5.4	5.4	U
106-93-4	1,2-Dibromoethane (EDB)	5.4	41	41	5.3	5.3	U
127-18-4	Tetrachloroethene (PCE)	5.4	19	19	2.8	2.8	U
108-90-7	Chlorobenzene	5.4	120	120	27	27	U
100-41-4	Ethylbenzene	5.4	230	230	53	53	U
179601-23-1	m,p-Xylenes	5.4	460	460	110	110	U
75-25-2	Bromoform	5.4	270	270	27	27	U
100-42-5	Styrene	5.4	230	230	53	53	U
95-47-6	o-Xylene	5.4	230	230	53	53	U
79-34-5	1,1,2,2-Tetrachloroethane	5.4	36	36	5.3	5.3	U
541-73-1	1,3-Dichlorobenzene	5.4	320	320	53	53	U
106-46-7	1,4-Dichlorobenzene	5.4	320	320	53	53	U

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly Air Samples/150151-05  
**Sample Matrix:** Air  
**Sample Name:** BLDG 5-5  
**Lab Code:** R1402251-001

**Service Request:** R1402251  
**Date Collected:** 4/ 1/14 1545  
**Date Received:** 4/ 2/14

**Analytical Method:** TO-15

**Date Analyzed:** 4/7/14 1149  
**Canister Dilution Factor:** 1.30

Initial Pressure (psig): -0.69      Final Pressure (psig): 3.50

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	5.4	320	320	53	53	U
91-20-3	Naphthalene	5.4	480	480	92	92	U
87-68-3	Hexachlorobutadiene	5.4	720	720	68	68	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	96	70-130	4/7/14 1149	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150151-05  
 Sample Matrix: Air  
 Sample Name: BLDG 5-5  
 Lab Code: R1402251-001  
 Run Type: Dilution

Service Request: R1402251  
 Date Collected: 4/ 1/14 1545  
 Date Received: 4/ 2/14

Analytical Method: TO-15

Date Analyzed: 4/7/14 1541  
 Canister Dilution Factor: 1.30

Initial Pressure (psig): -0.69      Final Pressure (psig): 3.50

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	300	0.26	0.26	0.10	0.10	U
74-83-9	Bromomethane	300	1.9	1.9	0.48	0.48	U
67-64-1	Acetone	300	3100	22	1300	9.1	E
75-35-4	1,1-Dichloroethene	300	1.9	1.9	0.48	0.48	U
75-09-2	Methylene Chloride	300	1.6	1.6	0.47	0.47	U
156-60-5	trans-1,2-Dichloroethene	300	1.9	1.9	0.48	0.48	U
75-34-3	1,1-Dichloroethane	300	2.0	2.0	0.48	0.48	U
1634-04-4	Methyl tert-Butyl Ether	300	3.4	3.4	0.95	0.95	U
78-93-3	2-Butanone (MEK)	300	95	2.8	32	0.96	
156-59-2	cis-1,2-Dichloroethene	300	1.9	1.9	0.48	0.48	U
67-66-3	Chloroform	300	2.3	2.3	0.48	0.48	U
107-06-2	1,2-Dichloroethane	300	2.0	2.0	0.48	0.48	U
71-55-6	1,1,1-Trichloroethane (TCA)	300	2.6	2.6	0.48	0.48	U
71-43-2	Benzene	300	1.5	1.5	0.47	0.47	U
56-23-5	Carbon Tetrachloride	300	0.41	0.30	0.065	0.048	
78-87-5	1,2-Dichloropropane	300	2.2	2.2	0.48	0.48	U
75-27-4	Bromodichloromethane	300	0.65	0.65	0.097	0.097	U
79-01-6	Trichloroethene (TCE)	300	0.79	0.26	0.15	0.048	
123-91-1	1,4-Dioxane	300	22	22	6.0	6.0	U
10061-01-5	cis-1,3-Dichloropropene	300	4.3	4.3	0.95	0.95	U
108-10-1	4-Methyl-2-pentanone (MIBK)	300	12	3.9	3.0	0.95	
10061-02-6	trans-1,3-Dichloropropene	300	2.2	2.2	0.48	0.48	U
79-00-5	1,1,2-Trichloroethane	300	2.6	2.6	0.48	0.48	U
108-88-3	Toluene	300	1.8	1.8	0.47	0.47	U
591-78-6	2-Hexanone	300	2.0	2.0	0.48	0.48	U
124-48-1	Dibromochloromethane	300	0.82	0.82	0.097	0.097	U
106-93-4	1,2-Dibromoethane (EDB)	300	0.74	0.74	0.096	0.096	U
127-18-4	Tetrachloroethene (PCE)	300	0.35	0.35	0.051	0.051	U
108-90-7	Chlorobenzene	300	2.2	2.2	0.48	0.48	U
100-41-4	Ethylbenzene	300	4.1	4.1	0.95	0.95	U
179601-23-1	m,p-Xylenes	300	8.3	8.3	1.9	1.9	U
75-25-2	Bromoform	300	4.9	4.9	0.48	0.48	U
100-42-5	Styrene	300	4.1	4.1	0.96	0.96	U
95-47-6	o-Xylene	300	4.1	4.1	0.95	0.95	U
79-34-5	1,1,2,2-Tetrachloroethane	300	0.65	0.65	0.095	0.095	U
541-73-1	1,3-Dichlorobenzene	300	5.7	5.7	0.95	0.95	U
106-46-7	1,4-Dichlorobenzene	300	5.7	5.7	0.95	0.95	U

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly Air Samples/150151-05  
**Sample Matrix:** Air  
**Sample Name:** BLDG 5-5  
**Lab Code:** R1402251-001  
**Run Type:** Dilution

**Service Request:** R1402251  
**Date Collected:** 4/ 1/14 1545  
**Date Received:** 4/ 2/14

**Analytical Method:** TO-15

**Date Analyzed:** 4/7/14 1541  
**Canister Dilution Factor:** 1.30

Initial Pressure (psig): -0.69                      Final Pressure (psig): 3.50

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	300	5.7	5.7	0.95	0.95	U
91-20-3	Naphthalene	300	8.7	8.7	1.7	1.7	U
87-68-3	Hexachlorobutadiene	300	13	13	1.2	1.2	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	93	70-130	4/7/14 1541	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150151-05  
 Sample Matrix: Air  
 Sample Name: BLDG 5-6  
 Lab Code: R1402251-002

Service Request: R1402251  
 Date Collected: 4/ 1/14 1459  
 Date Received: 4/ 2/14

Analytical Method: TO-15

Date Analyzed: 4/7/14 1231  
 Canister Dilution Factor: 1.42

Initial Pressure (psig): -1.72      Final Pressure (psig): 3.67

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	43	2.0	2.0	0.78	0.78	U
74-83-9	Bromomethane	43	14	14	3.7	3.7	U
67-64-1	Acetone	43	440	170	190	70	D
75-35-4	1,1-Dichloroethene	43	15	15	3.7	3.7	U
75-09-2	Methylene Chloride	43	13	13	3.6	3.6	U
156-60-5	trans-1,2-Dichloroethene	43	15	15	3.7	3.7	U
75-34-3	1,1-Dichloroethane	43	15	15	3.7	3.7	U
1634-04-4	Methyl tert-Butyl Ether	43	26	26	7.2	7.2	U
78-93-3	2-Butanone (MEK)	43	30	21	10	7.3	D
156-59-2	cis-1,2-Dichloroethene	43	15	15	3.7	3.7	U
67-66-3	Chloroform	43	18	18	3.7	3.7	U
107-06-2	1,2-Dichloroethane	43	15	15	3.7	3.7	U
71-55-6	1,1,1-Trichloroethane (TCA)	43	20	20	3.6	3.6	U
71-43-2	Benzene	43	12	12	3.6	3.6	U
56-23-5	Carbon Tetrachloride	43	2.3	2.3	0.37	0.37	U
78-87-5	1,2-Dichloropropane	43	17	17	3.6	3.6	U
75-27-4	Bromodichloromethane	43	5.0	5.0	0.74	0.74	U
79-01-6	Trichloroethene (TCE)	43	5.1	2.0	0.94	0.37	D
123-91-1	1,4-Dioxane	43	170	170	46	46	U
10061-01-5	cis-1,3-Dichloropropene	43	33	33	7.3	7.3	U
108-10-1	4-Methyl-2-pentanone (MIBK)	43	30	30	7.3	7.3	U
10061-02-6	trans-1,3-Dichloropropene	43	17	17	3.6	3.6	U
79-00-5	1,1,2-Trichloroethane	43	20	20	3.6	3.6	U
108-88-3	Toluene	43	14	14	3.6	3.6	U
591-78-6	2-Hexanone	43	15	15	3.6	3.6	U
124-48-1	Dibromochloromethane	43	6.3	6.3	0.74	0.74	U
106-93-4	1,2-Dibromoethane (EDB)	43	5.6	5.6	0.73	0.73	U
127-18-4	Tetrachloroethene (PCE)	43	2.6	2.6	0.39	0.39	U
108-90-7	Chlorobenzene	43	17	17	3.7	3.7	U
100-41-4	Ethylbenzene	43	31	31	7.2	7.2	U
179601-23-1	m,p-Xylenes	43	63	63	15	15	U
75-25-2	Bromoform	43	38	38	3.6	3.6	U
100-42-5	Styrene	43	31	31	7.3	7.3	U
95-47-6	o-Xylene	43	31	31	7.2	7.2	U
79-34-5	1,1,2,2-Tetrachloroethane	43	5.0	5.0	0.72	0.72	U
541-73-1	1,3-Dichlorobenzene	43	44	44	7.3	7.3	U
106-46-7	1,4-Dichlorobenzene	43	44	44	7.3	7.3	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150151-05  
 Sample Matrix: Air  
 Sample Name: BLDG 5-6  
 Lab Code: R1402251-002

Service Request: R1402251  
 Date Collected: 4/ 1/14 1459  
 Date Received: 4/ 2/14

Analytical Method: TO-15

Date Analyzed: 4/7/14 1231  
 Canister Dilution Factor: 1.42

Initial Pressure (psig): -1.72      Final Pressure (psig): 3.67

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	43	44	44	7.3	7.3	U
91-20-3	Naphthalene	43	66	66	13	13	U
87-68-3	Hexachlorobutadiene	43	99	99	9.3	9.3	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	96	70-130	4/7/14 1231	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150151-05  
 Sample Matrix: Air  
 Sample Name: BLDG 5-6  
 Lab Code: R1402251-002  
 Run Type: Dilution

Service Request: R1402251  
 Date Collected: 4/ 1/14 1459  
 Date Received: 4/ 2/14

Analytical Method: TO-15

Date Analyzed: 4/7/14 1632  
 Canister Dilution Factor: 1.42

Initial Pressure (psig): -1.72      Final Pressure (psig): 3.67

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	900	0.095	0.095	0.037	0.037	U
74-83-9	Bromomethane	900	0.68	0.68	0.17	0.17	U
67-64-1	Acetone	900	450	7.9	190	3.3	E
75-35-4	1,1-Dichloroethene	900	0.69	0.69	0.18	0.18	U
75-09-2	Methylene Chloride	900	0.60	0.60	0.17	0.17	U
156-60-5	trans-1,2-Dichloroethene	900	1.9	0.69	0.48	0.18	
75-34-3	1,1-Dichloroethane	900	0.71	0.71	0.18	0.18	U
1634-04-4	Methyl tert-Butyl Ether	900	1.2	1.2	0.35	0.35	U
78-93-3	2-Butanone (MEK)	900	34	1.0	11	0.35	
156-59-2	cis-1,2-Dichloroethene	900	1.7	0.69	0.44	0.18	
67-66-3	Chloroform	900	0.85	0.85	0.17	0.17	U
107-06-2	1,2-Dichloroethane	900	0.71	0.71	0.18	0.18	U
71-55-6	1,1,1-Trichloroethane (TCA)	900	0.95	0.95	0.17	0.17	U
71-43-2	Benzene	900	0.55	0.55	0.17	0.17	U
56-23-5	Carbon Tetrachloride	900	0.36	0.11	0.057	0.018	
78-87-5	1,2-Dichloropropane	900	0.80	0.80	0.17	0.17	U
75-27-4	Bromodichloromethane	900	0.24	0.24	0.035	0.035	U
79-01-6	Trichloroethene (TCE)	900	5.2	0.095	0.97	0.018	
123-91-1	1,4-Dioxane	900	7.9	7.9	2.2	2.2	U
10061-01-5	cis-1,3-Dichloropropene	900	1.6	1.6	0.35	0.35	U
108-10-1	4-Methyl-2-pentanone (MIBK)	900	5.1	1.4	1.2	0.35	
10061-02-6	trans-1,3-Dichloropropene	900	0.79	0.79	0.17	0.17	U
79-00-5	1,1,2-Trichloroethane	900	0.95	0.95	0.17	0.17	U
108-88-3	Toluene	900	1.8	0.65	0.48	0.17	
591-78-6	2-Hexanone	900	0.71	0.71	0.17	0.17	U
124-48-1	Dibromochloromethane	900	0.30	0.30	0.035	0.035	U
106-93-4	1,2-Dibromoethane (EDB)	900	0.27	0.27	0.035	0.035	U
127-18-4	Tetrachloroethene (PCE)	900	0.81	0.13	0.12	0.019	
108-90-7	Chlorobenzene	900	0.80	0.80	0.17	0.17	U
100-41-4	Ethylbenzene	900	1.5	1.5	0.35	0.35	U
179601-23-1	m,p-Xylenes	900	3.2	3.0	0.74	0.69	
75-25-2	Bromoform	900	1.8	1.8	0.17	0.17	U
100-42-5	Styrene	900	1.5	1.5	0.35	0.35	U
95-47-6	o-Xylene	900	1.5	1.5	0.35	0.35	U
79-34-5	1,1,2,2-Tetrachloroethane	900	0.24	0.24	0.034	0.034	U
541-73-1	1,3-Dichlorobenzene	900	2.1	2.1	0.35	0.35	U
106-46-7	1,4-Dichlorobenzene	900	2.1	2.1	0.35	0.35	U



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150151-05  
 Sample Matrix: Air  
 Sample Name: BLDG 5-6  
 Lab Code: R1402251-002  
 Run Type: Dilution

Service Request: R1402251  
 Date Collected: 4/ 1/14 1459  
 Date Received: 4/ 2/14

Analytical Method: TO-15

Date Analyzed: 4/7/14 1632  
 Canister Dilution Factor: 1.42

Initial Pressure (psig): -1.72

Final Pressure (psig): 3.67

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	900	2.1	2.1	0.35	0.35	U
91-20-3	Naphthalene	900	3.2	3.2	0.60	0.60	U
87-68-3	Hexachlorobutadiene	900	4.7	4.7	0.44	0.44	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	93	70-130	4/7/14 1632	

## ALS Group USA, Corp. dba ALS Environmental

## Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150151-05  
 Sample Matrix: Air  
 Sample Name: BLDG 8-1  
 Lab Code: R1402251-003

Service Request: R1402251  
 Date Collected: 4/ 1/14 1512  
 Date Received: 4/ 2/14

Analytical Method: TO-15

Date Analyzed: 4/7/14 1314  
 Canister Dilution Factor: 1.44

Initial Pressure (psig): -2.01

Final Pressure (psig): 3.56

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	118	0.73	0.73	0.29	0.29	U
74-83-9	Bromomethane	118	5.2	5.2	1.4	1.4	U
67-64-1	Acetone	118	86	61	36	26	D
75-35-4	1,1-Dichloroethene	118	5.4	5.4	1.4	1.4	U
75-09-2	Methylene Chloride	118	4.6	4.6	1.3	1.3	U
156-60-5	trans-1,2-Dichloroethene	118	5.4	5.4	1.4	1.4	U
75-34-3	1,1-Dichloroethane	118	5.5	5.5	1.4	1.4	U
1634-04-4	Methyl tert-Butyl Ether	118	9.6	9.6	2.7	2.7	U
78-93-3	2-Butanone (MEK)	118	7.9	7.9	2.7	2.7	U
156-59-2	cis-1,2-Dichloroethene	118	5.4	5.4	1.4	1.4	U
67-66-3	Chloroform	118	6.6	6.6	1.3	1.3	U
107-06-2	1,2-Dichloroethane	118	5.5	5.5	1.4	1.4	U
71-55-6	1,1,1-Trichloroethane (TCA)	118	7.3	7.3	1.3	1.3	U
71-43-2	Benzene	118	4.3	4.3	1.3	1.3	U
56-23-5	Carbon Tetrachloride	118	0.85	0.85	0.14	0.14	U
78-87-5	1,2-Dichloropropane	118	6.2	6.2	1.3	1.3	U
75-27-4	Bromodichloromethane	118	1.8	1.8	0.27	0.27	U
79-01-6	Trichloroethene (TCE)	118	0.86	0.73	0.16	0.14	D
123-91-1	1,4-Dioxane	118	61	61	17	17	U
10061-01-5	cis-1,3-Dichloropropene	118	12	12	2.7	2.7	U
108-10-1	4-Methyl-2-pentanone (MIBK)	118	11	11	2.7	2.7	U
10061-02-6	trans-1,3-Dichloropropene	118	6.1	6.1	1.3	1.3	U
79-00-5	1,1,2-Trichloroethane	118	7.3	7.3	1.3	1.3	U
108-88-3	Toluene	118	5.0	5.0	1.3	1.3	U
591-78-6	2-Hexanone	118	5.5	5.5	1.3	1.3	U
124-48-1	Dibromochloromethane	118	2.3	2.3	0.27	0.27	U
106-93-4	1,2-Dibromoethane (EDB)	118	2.1	2.1	0.27	0.27	U
127-18-4	Tetrachloroethene (PCE)	118	0.98	0.98	0.14	0.14	U
108-90-7	Chlorobenzene	118	6.2	6.2	1.4	1.4	U
100-41-4	Ethylbenzene	118	12	12	2.7	2.7	U
179601-23-1	m,p-Xylenes	118	23	23	5.4	5.4	U
75-25-2	Bromoform	118	14	14	1.3	1.3	U
100-42-5	Styrene	118	11	11	2.7	2.7	U
95-47-6	o-Xylene	118	12	12	2.7	2.7	U
79-34-5	1,1,2,2-Tetrachloroethane	118	1.8	1.8	0.27	0.27	U
541-73-1	1,3-Dichlorobenzene	118	16	16	2.7	2.7	U
106-46-7	1,4-Dichlorobenzene	118	16	16	2.7	2.7	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150151-05  
 Sample Matrix: Air  
 Sample Name: BLDG 8-1  
 Lab Code: R1402251-003

Service Request: R1402251  
 Date Collected: 4/ 1/14 1512  
 Date Received: 4/ 2/14

Analytical Method: TO-15

Date Analyzed: 4/7/14 1314  
 Canister Dilution Factor: 1.44

Initial Pressure (psig): -2.01      Final Pressure (psig): 3.56

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	118	16	16	2.7	2.7	U
91-20-3	Naphthalene	118	24	24	4.7	4.7	U
87-68-3	Hexachlorobutadiene	118	37	37	3.4	3.4	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	95	70-130	4/7/14 1314	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150151-05  
 Sample Matrix: Air  
 Sample Name: BLDG 8-1  
 Lab Code: R1402251-003  
 Run Type: Dilution

Service Request: R1402251  
 Date Collected: 4/ 1/14 1512  
 Date Received: 4/ 2/14

Analytical Method: TO-15

Date Analyzed: 4/7/14 1405  
 Canister Dilution Factor: 1.44

Initial Pressure (psig): -2.01      Final Pressure (psig): 3.56

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.086	0.086	0.034	0.034	U
74-83-9	Bromomethane	1000	0.62	0.62	0.16	0.16	U
67-64-1	Acetone	1000	90	7.2	38	3.0	E
75-35-4	1,1-Dichloroethene	1000	0.63	0.63	0.16	0.16	U
75-09-2	Methylene Chloride	1000	0.55	0.55	0.16	0.16	U
156-60-5	trans-1,2-Dichloroethene	1000	0.63	0.63	0.16	0.16	U
75-34-3	1,1-Dichloroethane	1000	0.65	0.65	0.16	0.16	U
1634-04-4	Methyl tert-Butyl Ether	1000	1.1	1.1	0.32	0.32	U
78-93-3	2-Butanone (MEK)	1000	2.6	0.94	0.87	0.32	
156-59-2	cis-1,2-Dichloroethene	1000	0.63	0.63	0.16	0.16	U
67-66-3	Chloroform	1000	0.78	0.78	0.16	0.16	U
107-06-2	1,2-Dichloroethane	1000	0.65	0.65	0.16	0.16	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.86	0.86	0.16	0.16	U
71-43-2	Benzene	1000	0.50	0.50	0.16	0.16	U
56-23-5	Carbon Tetrachloride	1000	0.28	0.10	0.044	0.016	
78-87-5	1,2-Dichloropropane	1000	0.73	0.73	0.16	0.16	U
75-27-4	Bromodichloromethane	1000	0.22	0.22	0.032	0.032	U
79-01-6	Trichloroethene (TCE)	1000	0.85	0.086	0.16	0.016	
123-91-1	1,4-Dioxane	1000	7.2	7.2	2.0	2.0	U
10061-01-5	cis-1,3-Dichloropropene	1000	1.4	1.4	0.32	0.32	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1000	1.3	1.3	0.32	0.32	U
10061-02-6	trans-1,3-Dichloropropene	1000	0.72	0.72	0.16	0.16	U
79-00-5	1,1,2-Trichloroethane	1000	0.86	0.86	0.16	0.16	U
108-88-3	Toluene	1000	0.86	0.59	0.23	0.16	
591-78-6	2-Hexanone	1000	0.65	0.65	0.16	0.16	U
124-48-1	Dibromochloromethane	1000	0.27	0.27	0.032	0.032	U
106-93-4	1,2-Dibromoethane (EDB)	1000	0.24	0.24	0.032	0.032	U
127-18-4	Tetrachloroethene (PCE)	1000	0.14	0.12	0.021	0.017	
108-90-7	Chlorobenzene	1000	0.73	0.73	0.16	0.16	U
100-41-4	Ethylbenzene	1000	1.4	1.4	0.32	0.32	U
179601-23-1	m,p-Xylenes	1000	2.8	2.8	0.63	0.63	U
75-25-2	Bromoform	1000	1.6	1.6	0.16	0.16	U
100-42-5	Styrene	1000	1.4	1.4	0.32	0.32	U
95-47-6	o-Xylene	1000	1.4	1.4	0.32	0.32	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.22	0.22	0.031	0.031	U
541-73-1	1,3-Dichlorobenzene	1000	1.9	1.9	0.32	0.32	U
106-46-7	1,4-Dichlorobenzene	1000	1.9	1.9	0.32	0.32	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150151-05  
 Sample Matrix: Air

Service Request: R1402251  
 Date Collected: 4/ 1/14 1512  
 Date Received: 4/ 2/14

Sample Name: BLDG 8-1  
 Lab Code: R1402251-003  
 Run Type: Dilution

Analytical Method: TO-15

Date Analyzed: 4/7/14 1405  
 Canister Dilution Factor: 1.44

Initial Pressure (psig): -2.01      Final Pressure (psig): 3.56

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	1000	1.9	1.9	0.32	0.32	U
91-20-3	Naphthalene	1000	2.9	2.9	0.55	0.55	U
87-68-3	Hexachlorobutadiene	1000	4.3	4.3	0.41	0.41	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	94	70-130	4/7/14 1405	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150151-05  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1403298-01

Service Request: R1402251  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 4/7/14 1058

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.060	0.060	0.023	0.023	U
74-83-9	Bromomethane	1000	0.43	0.43	0.11	0.11	U
67-64-1	Acetone	1000	5.0	5.0	2.1	2.1	U
75-35-4	1,1-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-09-2	Methylene Chloride	1000	0.38	0.38	0.11	0.11	U
156-60-5	trans-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-34-3	1,1-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
1634-04-4	Methyl tert-Butyl Ether	1000	0.79	0.79	0.22	0.22	U
78-93-3	2-Butanone (MEK)	1000	0.65	0.65	0.22	0.22	U
156-59-2	cis-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
67-66-3	Chloroform	1000	0.54	0.54	0.11	0.11	U
107-06-2	1,2-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.60	0.60	0.11	0.11	U
71-43-2	Benzene	1000	0.35	0.35	0.11	0.11	U
56-23-5	Carbon Tetrachloride	1000	0.070	0.070	0.011	0.011	U
78-87-5	1,2-Dichloropropane	1000	0.51	0.51	0.11	0.11	U
75-27-4	Bromodichloromethane	1000	0.15	0.15	0.022	0.022	U
79-01-6	Trichloroethene (TCE)	1000	0.060	0.060	0.011	0.011	U
123-91-1	1,4-Dioxane	1000	5.0	5.0	1.4	1.4	U
10061-01-5	cis-1,3-Dichloropropene	1000	1.0	1.0	0.22	0.22	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1000	0.90	0.90	0.22	0.22	U
10061-02-6	trans-1,3-Dichloropropene	1000	0.50	0.50	0.11	0.11	U
79-00-5	1,1,2-Trichloroethane	1000	0.60	0.60	0.11	0.11	U
108-88-3	Toluene	1000	0.41	0.41	0.11	0.11	U
591-78-6	2-Hexanone	1000	0.45	0.45	0.11	0.11	U
124-48-1	Dibromochloromethane	1000	0.19	0.19	0.022	0.022	U
106-93-4	1,2-Dibromoethane (EDB)	1000	0.17	0.17	0.022	0.022	U
127-18-4	Tetrachloroethene (PCE)	1000	0.080	0.080	0.012	0.012	U
108-90-7	Chlorobenzene	1000	0.51	0.51	0.11	0.11	U
100-41-4	Ethylbenzene	1000	0.95	0.95	0.22	0.22	U
179601-23-1	m,p-Xylenes	1000	1.9	1.9	0.44	0.44	U
75-25-2	Bromoform	1000	1.1	1.1	0.11	0.11	U
100-42-5	Styrene	1000	0.94	0.94	0.22	0.22	U
95-47-6	o-Xylene	1000	0.95	0.95	0.22	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.15	0.15	0.022	0.022	U
541-73-1	1,3-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
106-46-7	1,4-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150151-05  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1403298-01

Service Request: R1402251  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 4/7/14 1058

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
91-20-3	Naphthalene	1000	2.0	2.0	0.38	0.38	U
87-68-3	Hexachlorobutadiene	1000	3.0	3.0	0.28	0.28	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	96	70-130	4/7/14 1058	



ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150151-05  
 Sample Matrix: Air

Service Request: R1402251  
 Date Analyzed: 4/7/14

Lab Control Sample Summary  
 Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units: µg/m³  
 Basis: NA

Analysis Lot: 387172

Lab Control Sample  
 RQ1403298-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Vinyl Chloride	5.83	6.58	89	70 - 130
Bromomethane	8.51	9.80	87	70 - 130
Acetone	5.71	6.47	88	50 - 150
1,1-Dichloroethene	8.96	10.3	87	70 - 130
Methylene Chloride	9.09	8.94	102	70 - 130
trans-1,2-Dichloroethene	9.73	10.4	93	70 - 130
1,1-Dichloroethane	10.0	10.4	96	70 - 130
Methyl tert-Butyl Ether	8.89	9.55	93	70 - 130
2-Butanone (MEK)	7.44	7.81	95	70 - 130
cis-1,2-Dichloroethene	10.2	10.4	98	70 - 130
Chloroform	11.7	13.2	89	70 - 130
1,2-Dichloroethane	8.72	10.6	82	70 - 130
1,1,1-Trichloroethane (TCA)	11.8	14.3	82	70 - 130
Benzene	8.18	8.38	98	70 - 130
Carbon Tetrachloride	13.3	16.0	83	70 - 130
1,2-Dichloropropane	11.6	12.1	96	70 - 130
Bromodichloromethane	16.0	17.4	92	70 - 130
Trichloroethene (TCE)	13.1	14.0	93	70 - 130
1,4-Dioxane	11.9	9.37	128	50 - 150
cis-1,3-Dichloropropene	11.7	12.5	94	70 - 130
4-Methyl-2-pentanone (MIBK)	9.07	10.5	86	70 - 130
trans-1,3-Dichloropropene	9.96	10.9	91	70 - 130
1,1,2-Trichloroethane	13.6	14.5	94	70 - 130
Toluene	9.55	9.98	96	70 - 130
2-Hexanone	9.73	11.1	88	70 - 130
Dibromochloromethane	20.7	23.4	89	70 - 130
1,2-Dibromoethane (EDB)	18.5	20.0	93	70 - 130
Tetrachloroethene (PCE)	16.7	18.0	93	70 - 130
Chlorobenzene	11.8	12.3	96	70 - 130
Ethylbenzene	11.0	11.5	95	70 - 130
m,p-Xylenes	20.4	22.4	91	70 - 130
Bromoform	24.5	26.6	92	70 - 130
Styrene	10.0	11.1	91	70 - 130
o-Xylene	10.5	11.7	89	70 - 130
1,1,2,2-Tetrachloroethane	16.8	18.5	90	70 - 130
1,3-Dichlorobenzene	12.9	14.7	88	70 - 130
1,4-Dichlorobenzene	12.6	14.9	84	70 - 130
1,2-Dichlorobenzene	12.4	14.6	85	70 - 130

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly Air Samples/150151-05  
Sample Matrix: Air

Service Request: R1402251  
Date Analyzed: 4/7/14

Lab Control Sample Summary  
Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$   
Basis: NA

Analysis Lot: 387172

Lab Control Sample  
RQ1403298-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Naphthalene	7.59	11.0	69	50 - 150
Hexachlorobutadiene	23.1	23.5	99	50 - 150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Project Name <i>Varian</i>		Project Number <i>150151-06</i>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)														
Project Manager <i>Raymond Cadorette</i>		Report CC		PRESERVATIVE														
Company/Address <i>150 Royall Dr. Canton, MA 02021</i>				NUMBER OF CONTAINERS	<input type="checkbox"/> GC/MS VOA'S 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP <input type="checkbox"/> GC/MS SVOA'S 8270 <input type="checkbox"/> 625 <input type="checkbox"/> GC VOA'S 8021 <input type="checkbox"/> 601/602 <input type="checkbox"/> PESTICIDES 8081 <input type="checkbox"/> 608 <input type="checkbox"/> PCB'S 8082 <input type="checkbox"/> 608 <input type="checkbox"/> METALS TOTAL (List in comments below) <input type="checkbox"/> METALS DISSOLVED (List in comments below) <i>TO-15 Site Vol List</i>												Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____	
Phone # <i>617-589-6102</i>		E-mail <i>raymond.cadorette@cbi.com</i>																
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <i>Dale Dailey</i>																
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME		MATRIX													REMARKS/ ALTERNATE DESCRIPTION	
<i>Bldg 5-5</i>		<i>4/1/14 15:45</i>		<i>air</i>													<i>Complete 2nd Run</i>	
<i>Bldg 5-6</i>		<i>4/1/14 14:59</i>		<i>air</i>														
<i>Bldg 8-1</i>		<i>4/1/14 15:12</i>		<i>air</i>														


SPECIAL INSTRUCTIONS/COMMENTS <i>Metals</i>  <i>• Please complete second run on all samples.</i> <i>• "QA/QC: MADEP CAM"</i>	TURNAROUND REQUIREMENTS ____ RUSH (SURCHARGES APPLY) ____ 1 day ____ 2 day ____ 3 day ____ 4 day ____ 5 day <input checked="" type="checkbox"/> Standard	REPORT REQUIREMENTS ____ I. Results Only <input checked="" type="checkbox"/> II. Results + OC Summaries (LCS, OUP, MS/MSD as required) ____ III. Results + OC and Calibration Summaries ____ IV. Data Validation Report with Raw Data	INVOICE INFORMATION PO #: <i>876613</i> BILL TO: <i>CB&amp;I</i>
	REQUESTED REPORT DATE	<input checked="" type="checkbox"/> <i>GISKEY</i> Edata ____ Yes ____ No	

See QAPP

STATE WHERE SAMPLES WERE COLLECTED: *Massachusetts*

RELINQUISHED BY <i>[Signature]</i>	RECEIVED BY <i>Fed-ex</i>	RELINQUISHED BY	RECEIVED BY <i>[Signature]</i>	RELINQUISHED BY	RECEIVED BY <i>[Signature]</i>
Signature <i>Dale Dailey</i>	Signature <i>Fed-ex</i>	Signature	Signature <i>[Signature]</i>	Signature	Signature
Printed Name <i>CB&amp;I</i>	Printed Name <i>-</i>	Printed Name	Printed Name <i>Gregory L. Esmerian</i>	Printed Name	Printed Name
Firm <i>4/1/14</i>	Firm <i>4/1/14</i>	Firm	Firm <i>AL3</i>	Firm	Firm
Date/Time <i>17:15</i>	Date/Time <i>17:15</i>	Date/Time	Date/Time <i>4-2-14 09:35</i>	Date/Time	Date/Time

**R1402251 7 Y**  
 CB&I Environmental & Infrastructure  
 Varian Beverly Air Samples





# Cooler Receipt and Preservation Check Form

Project/Client CB&I Folder Number R14-2251  
 Cooler received on 4-2-14 by: KE COURIER: ALS UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler? YES NO
2. Were custody papers properly filled out (ink, signed, etc.)? YES NO
3. Did all bottles arrive in good condition (unbroken)? YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES NO N/A
5. Were Ice or Ice packs present? YES NO
6. Where did the bottles originate? ALS/ROE, CLIENT
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
8. Temperature of cooler(s) upon receipt: Air Canisters

Is the temperature within 0° - 6° C?: Y N Y N Y N Y N Y N  
 If No, Explain Below Date/Time Temperatures Taken: NA - Air Canisters

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

**If out of Temperature, note packing/ice condition & Client Approval to Run Samples:**

All Samples held in storage location SMD by KE on 04-2-14 at 09:31  
 5035 samples placed in storage location by on at

PC Secondary Review: 4/2/14

Cooler Breakdown: Date: 4/2/14 Time: 1301 by: du

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A du 4/2/14

Explain any discrepancies:

pH	Reagent			Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK
		YES	NO							
≥12	NaOH									No = Samples were preserved at lab as listed
≤2	HNO <sub>3</sub>									
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						PM OK to Adjust:
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-						*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet	
	Zn Aceta	-	-							
	HCl	*	*							

Bottle lot numbers: \_\_\_\_\_  
 Other Comments: \_\_\_\_\_

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150148.05  
**Prepared By:** Dale Dailey **Date :** 6/2/2014  
**Matrix:** Groundwater  
**Analyte Group :** Volatile Organics **Analytical Method :** SW-846 8260C  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1402595  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/2, 4/7, 4/8/14	SW-846 8260C	14 days	30 days	4/16/2014

**Sample temperature within QC limits:** Yes, 5.7 C

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? Yes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :** EB-1  
**Trip Blank ID :** TB-1

**Method Blank:** 8260C (1) 4/16/2014  
 8260C (2) 4/16/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

Sample TB-1 has a collection date of 4/2/14 according to the COC, but is listed as 4/7/14 in the report.

Continuing Calibration Verification for 1,1,2,2-tetrachloroethane was outside QC Limits in batch 388291. Results were non-detect for these analytes, but associated data were given a UJ qualifier (samples: TB-1, EB-1, CL6-BR (68), CL6-DO (41), CL9-DO (32), OB17-DO (41), OB17-BR (95), MW-5R (17), MW-3R (30), and CL3-S (18)).

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Sample OB41-5 (13') was re-analyzed at a larger dilution to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D".

**Reviewed By:** Pernilla Haley, 6/5/14



April 23, 2014

Service Request No: R1402595

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150148-05000000**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on April 11, 2014. For your reference, these analyses have been assigned our service request number **R1402595**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

Janice Jaeger  
Client Services Manager

Page 1 of 39

CC: Pernilla Haley

## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Water

**Service Request No.:** R1402595  
**Project Number:** 150148-05000000  
**Date Received:** 04/11/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Water samples were collected on 04/07-08/14 and received at ALS in good condition at cooler temperatures of 5.5 – 5.7 °C as noted on the cooler receipt and preservation check form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #.

### Volatile Organics

Twenty water samples were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples OB41-5 (13') was re-analyzed at a larger dilution to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D".

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes except the following were > 20%:

- CCV from 04/15/14: 1,1,2,2-Tetrachloroethane

As noted on the attached CCV summary forms, these CCV's are flagged with an "\*\*".

All Surrogate Standard recoveries were within QC limits.

All Bank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits.

All samples were analyzed within the required holding time of 14 days.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150148

Project Location: Varian Beverly

RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):  
R1402595-001-020

Matrices: Groundwater/Surface Water  Soil/Sediment Drinking Water Air Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X Yes No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X Yes No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X Yes No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X Yes No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes No Yes No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X Yes No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X Yes No <sup>1</sup>
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**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X Yes No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes X No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:

Position: Client Services  
Manager

Printed Name: Janice Jaeger

Date: 04/28/14

**00003**



## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402595

<u>Lab ID</u>	<u>Client ID</u>
R1402595-001	TB-1
R1402595-002	EB-1
R1402595-003	CL6-BR (68')
R1402595-004	CL6-DO (41')
R1402595-005	CL9-DO (32')
R1402595-006	OB17-DO (41')
R1402595-007	OB17-BR (95')
R1402595-008	MW-5R (17')
R1402595-009	MW-3R (30')
R1402595-010	OB23-BR (80')
R1402595-011	CL3-S (18')
R1402595-012	MW-36 (52')
R1402595-013	OB4-DO (68')
R1402595-014	OB8-DO (78')
R1402595-015	OB41-5 (13')
R1402595-016	GZ-4 (12')
R1402595-017	OB18-DO (23')
R1402595-018	OB18-S(10')
R1402595-019	GZ-1 (12')
R1402595-020	AP15-S (12')

00004

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of:* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

A handwritten signature in cursive script, appearing to read "Oscar C. Parcells".

*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: 01 JUL 2013

M-NY032           ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CaCO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	

**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: 01 JUL 2013

M-NY032      **ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY**

<b>NON POTABLE WATER (CHEMISTRY)</b>	<b>Effective Date</b>	<b>01 JUL 2013</b>	<b>Expiration Date</b>	<b>30 JUN 2014</b>
<u><b>Analytes</b></u>			<u><b>Methods</b></u>	
CHLORIDE			SM 4500-CL-E	
CHLORIDE			EPA 300.0	
FLUORIDE			EPA 300.0	
SULFATE			EPA 300.0	
AMMONIA-N			EPA 350.1	
NITRATE-N			EPA 300.0	
NITRATE-N			EPA 353.2	
KJELDAHL-N			EPA 351.2	
ORTHOPHOSPHATE			EPA 365.1	
PHOSPHORUS, TOTAL			EPA 365.1	
CHEMICAL OXYGEN DEMAND			EPA 410.4	
BIOCHEMICAL OXYGEN DEMAND			SM 5210B	
TOTAL ORGANIC CARBON			SM 5310C	
CYANIDE, TOTAL			EPA 335.4	
NON-FILTERABLE RESIDUE			SM 2540D	
OIL AND GREASE			EPA 1664	
PHENOLICS, TOTAL			EPA 420.4	
VOLATILE HALOCARBONS			EPA 601	
VOLATILE HALOCARBONS			EPA 624	
VOLATILE AROMATICS			EPA 602	
VOLATILE AROMATICS			EPA 624	
SVOC-ACID EXTRACTABLES			EPA 625	
SVOC-BASE/NEUTRAL EXTRACTABLES			EPA 625	
POLYCHLORINATED BIPHENYLS (WATEF			EPA 606	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/7/14 1100  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 02:32

Sample Name: TB-1  
 Lab Code: R1402595-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041514U4779.D\

Analysis Lot: 388291  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/16/14 02:32	
Dibromofluoromethane	99	70-130	4/16/14 02:32	
Toluene-d8	98	70-130	4/16/14 02:32	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/ 7/14 0630  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 03:04

Sample Name: EB-1  
 Lab Code: R1402595-002

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041514\4780.D\

Analysis Lot: 388291  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	4/16/14 03:04	
Dibromofluoromethane	99	70-130	4/16/14 03:04	
Toluene-d8	97	70-130	4/16/14 03:04	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/7/14 0730  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 03:36

Sample Name: CL6-BR (68')  
 Lab Code: R1402595-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041514V4781.D\

Analysis Lot: 388291  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/16/14 03:36	
Dibromofluoromethane	98	70-130	4/16/14 03:36	
Toluene-d8	97	70-130	4/16/14 03:36	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/7/14 0830  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 04:08

Sample Name: CL6-DO (41')  
 Lab Code: R1402595-004

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041514U4782.D\

Analysis Lot: 388291  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	4.5		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/16/14 04:08	
Dibromofluoromethane	100	70-130	4/16/14 04:08	
Toluene-d8	94	70-130	4/16/14 04:08	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/ 7/14 0900  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 04:40

Sample Name: CL9-DO (32')  
 Lab Code: R1402595-005

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041514J4783.D\

Analysis Lot: 388291  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.2		2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	5.1		2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/16/14 04:40	
Dibromofluoromethane	100	70-130	4/16/14 04:40	
Toluene-d8	97	70-130	4/16/14 04:40	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/7/14 1000  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 05:12

Sample Name: OB17-DO (41')  
 Lab Code: R1402595-006

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa12\Data\041514U4784.D\

Analysis Lot: 388291  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	6.6		2.0	
79-01-6	Trichloroethene (TCE)	7.8		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/16/14 05:12	
Dibromofluoromethane	99	70-130	4/16/14 05:12	
Toluene-d8	98	70-130	4/16/14 05:12	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/7/14 1030  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 05:43

Sample Name: OB17-BR (95')  
 Lab Code: R1402595-007

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041514U4785.D\

Analysis Lot: 388291  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.1		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	12		2.0	
156-59-2	cis-1,2-Dichloroethene	6.0		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	4/16/14 05:43	
Dibromofluoromethane	99	70-130	4/16/14 05:43	
Toluene-d8	98	70-130	4/16/14 05:43	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/7/14 1100  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 06:15

Sample Name: MW-5R (17)  
 Lab Code: R1402595-008

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041514V4786.D\

Analysis Lot: 388291  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	8.4		2.0	
79-01-6	Trichloroethene (TCE)	22		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	5.1		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	70-130	4/16/14 06:15	
Dibromofluoromethane	101	70-130	4/16/14 06:15	
Toluene-d8	100	70-130	4/16/14 06:15	



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/7/14 1130  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 06:47

Sample Name: MW-3R (30')  
 Lab Code: R1402595-009

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041514J4787.D\

Analysis Lot: 388291  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.3		2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	4/16/14 06:47	
Dibromofluoromethane	99	70-130	4/16/14 06:47	
Toluene-d8	98	70-130	4/16/14 06:47	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/7/14 1200  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 18:27

Sample Name: OB23-BR (80')  
 Lab Code: R1402595-010

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa12\Data\041614U4808.D\

Analysis Lot: 388443  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	4/16/14 18:27	
Dibromofluoromethane	102	70-130	4/16/14 18:27	
Toluene-d8	98	70-130	4/16/14 18:27	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/7/14 1230  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 07:19

Sample Name: CL3-S (18')  
 Lab Code: R1402595-011

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041514J4788.D\

Analysis Lot: 388291  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	9.7		2.0	
79-01-6	Trichloroethene (TCE)	17		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	4/16/14 07:19	
Dibromofluoromethane	101	70-130	4/16/14 07:19	
Toluene-d8	97	70-130	4/16/14 07:19	



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/7/14 1300  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 15:15

Sample Name: MW-36 (52')  
 Lab Code: R1402595-012

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041614J4802.D\

Analysis Lot: 388443  
 Instrument Name: R-MS-12  
 Dilution Factor: 20

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	40	U	40	
79-34-5	1,1,2,2-Tetrachloroethane	40	U	40	
79-00-5	1,1,2-Trichloroethane	40	U	40	
75-34-3	1,1-Dichloroethane (1,1-DCA)	40	U	40	
75-35-4	1,1-Dichloroethene (1,1-DCE)	40	U	40	
107-06-2	1,2-Dichloroethane	40	U	40	
78-87-5	1,2-Dichloropropane	40	U	40	
67-64-1	Acetone	200	U	200	
75-27-4	Bromodichloromethane	40	U	40	
75-25-2	Bromoform	40	U	40	
74-83-9	Bromomethane	40	U	40	
56-23-5	Carbon Tetrachloride	40	U	40	
108-90-7	Chlorobenzene	40	U	40	
75-00-3	Chloroethane	40	U	40	
67-66-3	Chloroform	40	U	40	
74-87-3	Chloromethane	40	U	40	
124-48-1	Dibromochloromethane	40	U	40	
75-09-2	Methylene Chloride	40	U	40	
127-18-4	Tetrachloroethene (PCE)	950		40	
79-01-6	Trichloroethene (TCE)	2400		40	
75-69-4	Trichlorofluoromethane (CFC 11)	40	U	40	
75-01-4	Vinyl Chloride	180		40	
156-59-2	cis-1,2-Dichloroethene	1400		40	
10061-01-5	cis-1,3-Dichloropropene	40	U	40	
156-60-5	trans-1,2-Dichloroethene	40	U	40	
10061-02-6	trans-1,3-Dichloropropene	40	U	40	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	4/16/14 15:15	
Dibromofluoromethane	99	70-130	4/16/14 15:15	
Toluene-d8	98	70-130	4/16/14 15:15	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/ 7/14 1330  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 12:36

Sample Name: OB4-DO (68')  
 Lab Code: R1402595-013

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041614J4797.D\

Analysis Lot: 388443  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	79		2.0	
79-01-6	Trichloroethene (TCE)	190		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	21		2.0	
156-59-2	cis-1,2-Dichloroethene	120		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	4/16/14 12:36	
Dibromofluoromethane	101	70-130	4/16/14 12:36	
Toluene-d8	97	70-130	4/16/14 12:36	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/ 8/14 0700  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 15:47

Sample Name: OB8-DO (78)  
 Lab Code: R1402595-014

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041614\J4803.D\

Analysis Lot: 388443  
 Instrument Name: R-MS-12  
 Dilution Factor: 20

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	40	U	40	
79-34-5	1,1,2,2-Tetrachloroethane	40	U	40	
79-00-5	1,1,2-Trichloroethane	40	U	40	
75-34-3	1,1-Dichloroethane (1,1-DCA)	40	U	40	
75-35-4	1,1-Dichloroethene (1,1-DCE)	40	U	40	
107-06-2	1,2-Dichloroethane	40	U	40	
78-87-5	1,2-Dichloropropane	40	U	40	
67-64-1	Acetone	200	U	200	
75-27-4	Bromodichloromethane	40	U	40	
75-25-2	Bromoform	40	U	40	
74-83-9	Bromomethane	40	U	40	
56-23-5	Carbon Tetrachloride	40	U	40	
108-90-7	Chlorobenzene	40	U	40	
75-00-3	Chloroethane	40	U	40	
67-66-3	Chloroform	40	U	40	
74-87-3	Chloromethane	40	U	40	
124-48-1	Dibromochloromethane	40	U	40	
75-09-2	Methylene Chloride	40	U	40	
127-18-4	Tetrachloroethene (PCE)	350		40	
79-01-6	Trichloroethene (TCE)	2600		40	
75-69-4	Trichlorofluoromethane (CFC 11)	40	U	40	
75-01-4	Vinyl Chloride	40	U	40	
156-59-2	cis-1,2-Dichloroethene	1200		40	
10061-01-5	cis-1,3-Dichloropropene	40	U	40	
156-60-5	trans-1,2-Dichloroethene	40	U	40	
10061-02-6	trans-1,3-Dichloropropene	40	U	40	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	4/16/14 15:47	
Dibromofluoromethane	101	70-130	4/16/14 15:47	
Toluene-d8	99	70-130	4/16/14 15:47	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/ 8/14 0800  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 13:06

Sample Name: OB41-5 (13')  
 Lab Code: R1402595-015

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041614J4798.D\

Analysis Lot: 388443  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.1		2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	64		2.0	
79-01-6	Trichloroethene (TCE)	310	E	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	82		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	70-130	4/16/14 13:06	
Dibromofluoromethane	101	70-130	4/16/14 13:06	
Toluene-d8	99	70-130	4/16/14 13:06	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/ 8/14 0800  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 17:55

Sample Name: OB41-5 (13')  
 Lab Code: R1402595-015  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041614J4807.D\

Analysis Lot: 388443  
 Instrument Name: R-MS-12  
 Dilution Factor: 2.5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.0	U	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
67-64-1	Acetone	25	U	25	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-09-2	Methylene Chloride	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	59	D	5.0	
79-01-6	Trichloroethene (TCE)	280	D	5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	5.0	U	5.0	
156-59-2	cis-1,2-Dichloroethene	76	D	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0	U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	70-130	4/16/14 17:55	
Dibromofluoromethane	103	70-130	4/16/14 17:55	
Toluene-d8	100	70-130	4/16/14 17:55	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/ 8/14 0900  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 19:00

Sample Name: GZ-4 (12')  
 Lab Code: R1402595-016

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041614U4809.D\

Analysis Lot: 388443  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	4.5		2.0	
79-01-6	Trichloroethene (TCE)	6.3		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	4.4		2.0	
156-59-2	cis-1,2-Dichloroethene	55		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	70-130	4/16/14 19:00	
Dibromofluoromethane	102	70-130	4/16/14 19:00	
Toluene-d8	99	70-130	4/16/14 19:00	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/ 8/14 1000  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 19:32

Sample Name: OB18-DO (23')  
 Lab Code: R1402595-017

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041614V4810.D\

Analysis Lot: 388443  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	17		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	13		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	70-130	4/16/14 19:32	
Dibromofluoromethane	100	70-130	4/16/14 19:32	
Toluene-d8	99	70-130	4/16/14 19:32	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/ 8/14 1100  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 13:38

Sample Name: OB18-S(10')  
 Lab Code: R1402595-018

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa12\Data\041614U4799.D\

Analysis Lot: 388443  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0 U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed Q
4-Bromofluorobenzene	102	70-130	4/16/14 13:38
Dibromofluoromethane	100	70-130	4/16/14 13:38
Toluene-d8	98	70-130	4/16/14 13:38



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/ 8/14 1200  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 20:04

Sample Name: GZ-1 (12')  
 Lab Code: R1402595-019

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041614U4811.D\

Analysis Lot: 388443  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	13		2.0	
79-01-6	Trichloroethene (TCE)	47		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	8.9		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/16/14 20:04	
Dibromofluoromethane	101	70-130	4/16/14 20:04	
Toluene-d8	98	70-130	4/16/14 20:04	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: 4/ 8/14 1230  
 Date Received: 4/11/14  
 Date Analyzed: 4/16/14 14:11

Sample Name: AP15-S (12')  
 Lab Code: R1402595-020

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041614J4800.D\

Analysis Lot: 388443  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0 U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed Q
4-Bromofluorobenzene	104	70-130	4/16/14 14:11
Dibromofluoromethane	100	70-130	4/16/14 14:11
Toluene-d8	98	70-130	4/16/14 14:11

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/16/14 02:01

Sample Name: Method Blank  
 Lab Code: RQ1403834-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041514\J4778.D\

Analysis Lot: 388291  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	70-130	4/16/14 02:01	
Dibromofluoromethane	100	70-130	4/16/14 02:01	
Toluene-d8	99	70-130	4/16/14 02:01	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/16/14 12:02

Sample Name: Method Blank  
 Lab Code: RQ1403922-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa12\Data\041614U4796.D\

Analysis Lot: 388443  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	70-130	4/16/14 12:02	
Dibromofluoromethane	100	70-130	4/16/14 12:02	
Toluene-d8	98	70-130	4/16/14 12:02	

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Analyzed: 4/16/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 388291

Analyte Name	Lab Control Sample RQ1403834-03			Duplicate Lab Control Sample RQ1403834-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	18.2	20.0	91	16.9	20.0	85	70 - 130	7	20
1,1,2,2-Tetrachloroethane	15.1	20.0	76	16.5	20.0	82	70 - 130	9	20
1,1,2-Trichloroethane	19.0	20.0	95	18.6	20.0	93	70 - 130	2	20
1,1-Dichloroethane (1,1-DCA)	17.2	20.0	86	16.9	20.0	85	70 - 130	2	20
1,1-Dichloroethene (1,1-DCE)	19.5	20.0	97	18.2	20.0	91	70 - 130	7	20
1,2-Dichloroethane	19.1	20.0	95	18.6	20.0	93	70 - 130	3	20
1,2-Dichloropropane	18.1	20.0	90	17.5	20.0	87	70 - 130	3	20
Acetone	21.0	20.0	105	19.5	20.0	98	40 - 160	7	20
Bromodichloromethane	19.8	20.0	99	19.4	20.0	97	70 - 130	2	20
Bromoform	18.2	20.0	91	17.5	20.0	87	70 - 130	4	20
Bromomethane	18.1	20.0	91	17.5	20.0	88	40 - 160	3	20
Carbon Tetrachloride	18.3	20.0	91	17.2	20.0	86	70 - 130	6	20
Chlorobenzene	18.9	20.0	94	17.8	20.0	89	70 - 130	6	20
Chloroethane	18.7	20.0	93	17.6	20.0	88	70 - 130	6	20
Chloroform	17.8	20.0	89	17.2	20.0	86	70 - 130	3	20
Chloromethane	17.2	20.0	86	16.6	20.0	83	40 - 160	4	20
Dibromochloromethane	19.5	20.0	98	18.8	20.0	94	70 - 130	4	20
Methylene Chloride	17.6	20.0	88	17.5	20.0	87	70 - 130	<1	20
Tetrachloroethene (PCE)	19.2	20.0	96	17.2	20.0	86	70 - 130	11	20
Trichloroethene (TCE)	21.9	20.0	109	19.5	20.0	98	70 - 130	11	20
Trichlorofluoromethane (CFC 11)	17.0	20.0	85	15.9	20.0	79	70 - 130	7	20
Vinyl Chloride	18.4	20.0	92	17.5	20.0	88	70 - 130	5	20
cis-1,2-Dichloroethene	17.9	20.0	90	17.4	20.0	87	70 - 130	3	20
cis-1,3-Dichloropropene	18.7	20.0	94	17.6	20.0	88	70 - 130	6	20
trans-1,2-Dichloroethene	17.9	20.0	90	16.8	20.0	84	70 - 130	6	20
trans-1,3-Dichloropropene	18.8	20.0	94	18.3	20.0	91	70 - 130	3	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402595  
 Date Analyzed: 4/16/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 388443

Analyte Name	Lab Control Sample RQ1403922-03			Duplicate Lab Control Sample RQ1403922-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	18.5	20.0	92	17.7	20.0	88	70 - 130	4	20
1,1,2,2-Tetrachloroethane	16.9	20.0	84	17.8	20.0	89	70 - 130	5	20
1,1,2-Trichloroethane	18.6	20.0	93	19.4	20.0	97	70 - 130	4	20
1,1-Dichloroethane (1,1-DCA)	17.9	20.0	90	17.3	20.0	87	70 - 130	4	20
1,1-Dichloroethene (1,1-DCE)	19.2	20.0	96	19.0	20.0	95	70 - 130	<1	20
1,2-Dichloroethane	19.2	20.0	96	19.2	20.0	96	70 - 130	<1	20
1,2-Dichloropropane	18.3	20.0	92	17.3	20.0	86	70 - 130	6	20
Acetone	19.0	20.0	95	19.0	20.0	95	40 - 160	<1	20
Bromodichloromethane	19.9	20.0	99	19.5	20.0	97	70 - 130	2	20
Bromoform	18.3	20.0	91	18.7	20.0	94	70 - 130	2	20
Bromomethane	18.5	20.0	92	17.6	20.0	88	40 - 160	5	20
Carbon Tetrachloride	17.6	20.0	88	17.3	20.0	86	70 - 130	2	20
Chlorobenzene	18.8	20.0	94	18.1	20.0	91	70 - 130	3	20
Chloroethane	19.1	20.0	96	18.4	20.0	92	70 - 130	4	20
Chloroform	18.5	20.0	93	17.9	20.0	90	70 - 130	3	20
Chloromethane	17.5	20.0	88	17.6	20.0	88	40 - 160	<1	20
Dibromochloromethane	19.7	20.0	99	19.3	20.0	96	70 - 130	2	20
Methylene Chloride	17.9	20.0	89	17.8	20.0	89	70 - 130	<1	20
Tetrachloroethene (PCE)	18.3	20.0	91	17.4	20.0	87	70 - 130	5	20
Trichloroethene (TCE)	19.7	20.0	98	19.0	20.0	95	70 - 130	4	20
Trichlorofluoromethane (CFC 11)	17.2	20.0	86	16.5	20.0	82	70 - 130	4	20
Vinyl Chloride	18.6	20.0	93	18.3	20.0	92	70 - 130	2	20
cis-1,2-Dichloroethene	18.1	20.0	91	17.8	20.0	89	70 - 130	2	20
cis-1,3-Dichloropropene	19.0	20.0	95	19.0	20.0	95	70 - 130	<1	20
trans-1,2-Dichloroethene	18.4	20.0	92	17.8	20.0	89	70 - 130	3	20
trans-1,3-Dichloropropene	19.9	20.0	99	19.7	20.0	98	70 - 130	1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000

Service Request: R1402595  
 Date Analyzed: 4/15/14

Continuing Calibration Verification Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Calibration Date: 3/12/14  
 Calibration ID: RC1400023  
 Analysis Lot: 388291  
 Units: ppb

File ID: I:\ACQUATA\msvoa12\Data\041514\4774.D\

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
1,1,1-Trichloroethane (TCA)	50.0	45.3	0.7112	0.6443	-9.4	NA	± 20 %	Average RF
1,1,2,2-Tetrachloroethane	50.0	39.9	0.5726	0.4565	-20.3 *	NA	± 20 %	Average RF
1,1,2-Trichloroethane	50.0	48.0	0.2220	0.2131	-4.0	NA	± 20 %	Average RF
1,1-Dichloroethane (1,1-DCA)	50.0	43.8	0.8461	0.7414	-12.4	NA	± 20 %	Average RF
1,1-Dichloroethene (1,1-DCE)	50.0	42.9	0.3628	0.3110	-14.3	NA	± 20 %	Average RF
1,2-Dichloroethane	50.0	48.5	0.3737	0.3628	-2.9	NA	± 20 %	Average RF
1,2-Dichloropropane	50.0	44.4	0.3148	0.2795	-11.2	NA	± 20 %	Average RF
Acetone	50.0	68.1	0.09920	0.1351	36.2	NA	± 60 %	Average RF
Bromodichloromethane	50.0	50.5	0.3677	0.3717	1.1	NA	± 20 %	Average RF
Bromoform	50.0	48.7	0.2840	0.2768	-2.5	NA	± 20 %	Average RF
Bromomethane	50.0	45.9	0.2881	0.2644	-8.2	NA	± 60 %	Average RF
Carbon Tetrachloride	50.0	45.5	0.1199	0.1090	-9.1	NA	± 20 %	Average RF
Chlorobenzene	50.0	46.7	0.8701	0.8119	-6.7	NA	± 20 %	Average RF
Chloroethane	50.0	49.0	0.2851	0.2791	-2.1	NA	± 20 %	Average RF
Chloroform	50.0	45.2	0.8292	0.7498	-9.6	NA	± 20 %	Average RF
Chloromethane	50.0	47.1	0.5146	0.4849	-5.8	NA	± 60 %	Average RF
Dibromochloromethane	50.0	51.6	0.2588	0.2671	3.2	NA	± 20 %	Average RF
Methylene Chloride	50.0	42.3	0.4753	0.4019	-15.5	NA	± 20 %	Average RF
Tetrachloroethene (PCE)	50.0	44.9	0.2583	0.2319	-10.2	NA	± 20 %	Average RF
Trichloroethene (TCE)	50.0	51.5	0.2982	0.3070	3.0	NA	± 20 %	Average RF
Trichlorofluoromethane (CFC 11)	50.0	44.0	0.7340	0.6451	-12.1	NA	± 20 %	Average RF
Vinyl Chloride	50.0	49.1	0.4781	0.4694	-1.8	NA	± 20 %	Average RF
cis-1,2-Dichloroethene	50.0	44.8	0.5073	0.4542	-10.5	NA	± 20 %	Average RF
cis-1,3-Dichloropropene	50.0	48.7	0.4363	0.4246	-2.7	NA	± 20 %	Average RF
trans-1,2-Dichloroethene	50.0	44.7	0.4546	0.4060	-10.7	NA	± 20 %	Average RF
trans-1,3-Dichloropropene	50.0	51.2	0.3517	0.3602	2.4	NA	± 20 %	Average RF
4-Bromofluorobenzene	50.0	52.2	0.4538	0.4739	4.4	NA	± 20 %	Average RF
Dibromofluoromethane	50.0	51.8	0.2895	0.2997	3.5	NA	± 20 %	Average RF
Toluene-d8	50.0	49.6	1.216	1.207	-0.8	NA	± 20 %	Average RF

Client: CB&I  
Project: Varian Beverly/150148-05000000

Service Request: R1402595  
Date Analyzed: 4/16/14

Continuing Calibration Verification Summary  
Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Calibration Date: 3/12/14  
Calibration ID: RC1400023  
Analysis Lot: 388443  
Units: ppb

File ID: I:\ACQUADATA\msvoa12\Data\041614U4792.D\

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
1,1,1-Trichloroethane (TCA)	50.0	44.3	0.7112	0.6297	-11.5	NA	± 20 %	Average RF
1,1,2,2-Tetrachloroethane	50.0	42.7	0.5726	0.4888	-14.6	NA	± 20 %	Average RF
1,1,2-Trichloroethane	50.0	48.2	0.2220	0.2141	-3.6	NA	± 20 %	Average RF
1,1-Dichloroethane (1,1-DCA)	50.0	43.1	0.8461	0.7285	-13.9	NA	± 20 %	Average RF
1,1-Dichloroethene (1,1-DCE)	50.0	42.6	0.3628	0.3092	-14.8	NA	± 20 %	Average RF
1,2-Dichloroethane	50.0	49.4	0.3737	0.3690	-1.3	NA	± 20 %	Average RF
1,2-Dichloropropane	50.0	44.7	0.3148	0.2814	-10.6	NA	± 20 %	Average RF
Acetone	50.0	60.0	0.09920	0.1190	20.0	NA	± 60 %	Average RF
Bromodichloromethane	50.0	49.7	0.3677	0.3657	-0.5	NA	± 20 %	Average RF
Bromoform	50.0	49.7	0.2840	0.2820	-0.7	NA	± 20 %	Average RF
Bromomethane	50.0	43.4	0.2881	0.2501	-13.2	NA	± 60 %	Average RF
Carbon Tetrachloride	50.0	45.5	0.1199	0.1090	-9.1	NA	± 20 %	Average RF
Chlorobenzene	50.0	46.3	0.8701	0.8055	-7.4	NA	± 20 %	Average RF
Chloroethane	50.0	48.2	0.2851	0.2749	-3.6	NA	± 20 %	Average RF
Chloroform	50.0	44.1	0.8292	0.7320	-11.7	NA	± 20 %	Average RF
Chloromethane	50.0	46.3	0.5146	0.4763	-7.5	NA	± 60 %	Average RF
Dibromochloromethane	50.0	51.5	0.2588	0.2663	2.9	NA	± 20 %	Average RF
Methylene Chloride	50.0	42.1	0.4753	0.3999	-15.9	NA	± 20 %	Average RF
Tetrachloroethene (PCE)	50.0	45.1	0.2583	0.2328	-9.9	NA	± 20 %	Average RF
Trichloroethene (TCE)	50.0	48.6	0.2982	0.2899	-2.8	NA	± 20 %	Average RF
Trichlorofluoromethane (CFC 11)	50.0	45.5	0.7340	0.6680	-9.0	NA	± 20 %	Average RF
Vinyl Chloride	50.0	49.0	0.4781	0.4684	-2.0	NA	± 20 %	Average RF
cis-1,2-Dichloroethene	50.0	44.6	0.5073	0.4521	-10.9	NA	± 20 %	Average RF
cis-1,3-Dichloropropene	50.0	50.7	0.4363	0.4421	1.3	NA	± 20 %	Average RF
trans-1,2-Dichloroethene	50.0	43.6	0.4546	0.3960	-12.9	NA	± 20 %	Average RF
trans-1,3-Dichloropropene	50.0	53.4	0.3517	0.3756	6.8	NA	± 20 %	Average RF
4-Bromofluorobenzene	50.0	53.1	0.4538	0.4816	6.1	NA	± 20 %	Average RF
Dibromofluoromethane	50.0	51.3	0.2895	0.2969	2.6	NA	± 20 %	Average RF
Toluene-d8	50.0	50.0	1.216	1.217	0.0	NA	± 20 %	Average RF



Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)															
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <b>1</b> <b>20</b>															
Company/Address <b>CB&amp;I Environmental, Inc. 150 Royall Street Canton, MA 02021</b>				NUMBER OF CONTAINERS	GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 825 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCB's <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) <b>Chloride</b>												Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____		
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@CBI.com</b>																	
Sampler's Signature <i>Doniel C. Lenny</i>		Sampler's Printed Name <b>DONIEL C. LENNY</b>																	
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME		MATRIX													REMARKS/ ALTERNATE DESCRIPTION		
<b>TB-1</b>		<b>4/2/14</b>	<b>1100</b>	<b>GW</b>	<b>3</b>	<b>3</b>													<b>BY LAB</b>
<b>EB-1</b>		<b>4/7/14</b>	<b>0630</b>	<b>GW</b>	<b>3</b>	<b>3</b>													
<b>CL6-BR (68')</b>		<b>4/7/14</b>	<b>0730</b>		<b>3</b>	<b>3</b>													
<b>CL6-DO (41')</b>		<b>4/7/14</b>	<b>0830</b>		<b>3</b>	<b>3</b>													
<b>CL9-DO (32')</b>		<b>4/7/14</b>	<b>0900</b>		<b>3</b>	<b>3</b>													
<b>OB17-DO (41')</b>		<b>4/7/14</b>	<b>1000</b>		<b>3</b>	<b>3</b>													
<b>OB17-BR (95')</b>		<b>4/7/14</b>	<b>1030</b>		<b>3</b>	<b>3</b>													
<b>MW-SR (17')</b>		<b>4/7/14</b>	<b>1100</b>		<b>3</b>	<b>3</b>													
<b>MW-SR (30')</b>		<b>4/7/14</b>	<b>1130</b>		<b>3</b>	<b>3</b>													
<b>OB23-BR (80')</b>		<b>4/7/14</b>	<b>1200</b>		<b>3</b>	<b>3</b>													
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field filtered Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD and PDF of report to: Catherine.Joe@cbi.com.					TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) ___ 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day <input checked="" type="checkbox"/> Standard			REPORT REQUIREMENTS ___ I. Results Only ___ II. Results + QC Summaries (LCS, DUP, MSMSD as required) ___ III. Results + QC and Calibration Summaries ___ IV. Data Validation Report with Raw Data			INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>								
See QAPP <input type="checkbox"/>					REQUESTED REPORT DATE			Edata <input checked="" type="checkbox"/> Yes ___ No			<b>R1402595 7 Y</b> CB&I Environmental & Infrastructure Varian Beverly								
STATE WHERE SAMPLES WERE COLLECTED: <b>MASS</b>																			
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY					
Signature <i>Doniel C. Lenny</i>		Signature <i>[Signature]</i>		Signature		Signature		Signature		Signature		Signature		Signature					
Printed Name <b>Doniel C. Lenny</b>		Printed Name <b>[Name]</b>		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name					
Firm <b>CBI</b>		Firm <b>ACS</b>		Firm		Firm		Firm		Firm		Firm		Firm					
Date/Time <b>4/10/14 1430</b>		Date/Time <b>4/10/14 0845</b>		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time					

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																			
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <u>1</u> <u>20</u>																			
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	<input type="checkbox"/> GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> CLP <input type="checkbox"/> GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 625 <input type="checkbox"/> GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 <input type="checkbox"/> PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 <input type="checkbox"/> PCBs <input type="checkbox"/> 8082 <input type="checkbox"/> 608 <input type="checkbox"/> METALS, TOTAL (List in comments below) <input type="checkbox"/> METALS, DISSOLVED (List in comments below) <u>Chloride</u>																		
150 Royall Street																							
Canton, MA 02021																							
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@CBI.com</b>																					
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <b>DANIEL C. VERRA</b>		Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____																			
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID														SAMPLING DATE TIME		MATRIX					
<b>CL3-S (18')</b>				<b>4/7/14 1230</b>		<b>GW</b>		3		3													
<b>MMW-36 (52')</b>				<b>4/7/14 1300</b>				3		3													
<b>OB4-DO (68')</b>				<b>4/7/14 1330</b>				3		3													
<b>OB8-DO (78')</b>				<b>4/8/14 0700</b>				3		3													
<b>OB41-5 (13')</b>				<b>4/8/14 0900</b>				3		3													
<b>G2-4 (12')</b>				<b>4/8/14 0900</b>				3		3													
<b>B18-DO (23')</b>				<b>4/8/14 1000</b>				3		3													
<b>B18-S (10')</b>				<b>4/8/14 1100</b>				3		3													
<b>G2-1 (12')</b>				<b>4/8/14 1200</b>				3		3													
<b>AP15-S (12')</b>				<b>4/8/14 1230</b>				3		3													
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field filtered Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD and PDF of report to: Catherine.Joe@cbi.com.				TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) ___ 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day <input checked="" type="checkbox"/> Standard				REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (LCS, DUP, MSMSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw				INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>											
See QAPP <input type="checkbox"/>				REQUESTED REPORT DATE				Edata <input checked="" type="checkbox"/> Yes ___ No				<b>R1402595</b> 7 Y CB&I Environmental & Infrastructure Varian Beverly 											
STATE WHERE SAMPLES WERE COLLECTED: <b>MASS</b>																							
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY									
<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>									
Printed Name <b>DAN VERRA</b>		Printed Name <b>D. Serrano</b>		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name									
Firm <b>CBI</b>		Firm <b>ACS</b>		Firm		Firm		Firm		Firm		Firm		Firm									
Date/Time <b>4/10/14 1430</b>		Date/Time <b>4/10/14 0845</b>		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time									

**From:** Haley, Pernilla [pernilla.haley@cbi.com]  
**Sent:** Monday, April 14, 2014 10:53 AM  
**To:** Janice Jaeger  
**Cc:** Cadorette, Raymond  
**Subject:** FW: Sample Confirmation from ALS Environmental for Varian Beverly (R1402595)  
**Attachments:** SampleConfirmation-R1402595.pdf

On the last page the sample IDs should be OB18-D0(23) and OB18-S(10) The "0" is missing in the sample ID at the start of the ID.

Thanks, Pernilla

-----Original Message-----

**From:** Cadorette, Raymond  
**Sent:** Monday, April 14, 2014 10:24 AM  
**To:** Haley, Pernilla  
**Subject:** FW: Sample Confirmation from ALS Environmental for Varian Beverly (R1402595)

Raymond J. Cadorette  
Project Manager  
Environmental & Infrastructure  
Tel: +1 617 589 6102  
Cell: +1 774 571 1183  
Fax: +1 617 589 5496  
[raymond.cadorette@cbi.com](mailto:raymond.cadorette@cbi.com)

CB&I  
150 Royall Street  
Canton, MA 02021  
[www.CBI.com](http://www.CBI.com)

-----Original Message-----

**From:** [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com) [mailto:Janice.Jaeger@alsglobal.com]  
**Sent:** Monday, April 14, 2014 5:22 AM  
**To:** Cadorette, Raymond  
**Subject:** Sample Confirmation from ALS Environmental for Varian Beverly (R1402595)

Privileged Communications: This email (and/or the documents attached to it) may contain confidential information belonging to the sender which is privileged. The information is intended only for the use of the individual or entity named on the distribution. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution or the taking of any action in reliance on the contents of this information is strictly prohibited. If you received this email in error, please notify us by telephone to arrange for the return of the documents.



# Cooler Receipt and Preservation Check Form

Project/Client CB&I Folder Number 214-2595

Cooler received on 4/11 by: JES COURIER: ALS  FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler?  YES NO
2. Were custody papers properly filled out (ink, signed, etc.)?  YES NO
3. Did all bottles arrive in good condition (unbroken)?  YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES  NO N/A
5. Were Ice or Ice packs present?  YES NO
6. Where did the bottles originate? ALS/ROE, CLIENT
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
8. Temperature of cooler(s) upon receipt: 5.7 5.5

Is the temperature within 0° - 6° C?:  Y  N  Y  N  Y  N  
If No, Explain Below Date/Time Temperatures Taken: 4/11/14 0905

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location room by JES on 4/11/14 at 0906  
5035 samples placed in storage location \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: JMS 4/11/14

Cooler Breakdown: Date: 4/14/14 Time: 0804 by: JES

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)?  YES  NO
2. Did all bottle labels and tags agree with custody papers?  YES  NO
3. Were correct containers used for the tests indicated?  YES  NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

### Explain any discrepancies:

pH	Reagent	Lot Received		Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK
		YES	NO						
≥12	NaOH								No = Samples were preserved at lab as listed
≤2	HNO <sub>3</sub>								
≤2	H <sub>2</sub> SO <sub>4</sub>								
<4	NaHSO <sub>4</sub>								
Residual Chlorine (-)	For TCN Phenol and 522				If present, contact PM to add ascorbic acid Or sodium sulfite (522)				PM OK to Adjust:
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-						
	Zn Aceta	-	-						
	HCl	*	*		4112120		3/15		

Bottle lot numbers: 4-002-003  
Other Comments:

Labels on Samples 17, 18, 20 do not match the ID's on COC.

PC Secondary Review: JMS 4/22/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150148.05  
**Prepared By:** Dale Dailey **Date :** 6/2/2014  
**Matrix:** Groundwater  
**Analyte Group :** Volatile Organics **Analytical Method :** SW-846 8260C  
Metals 6010 C  
Chloride SM 4500-CL-E  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1402598  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/8-4/10/14	SW-846 8260C	14 days	10 days	4/17, 4/18/14
4/8-4/10/14	6010 C	180 Days	180 Days	4/16, 4/17/14
4/8-4/10/14	SM 4500-CL-E	28 Days	28 Days	4/22/14

**Sample temperature within QC limits:** Yes, 5.7 C

### Surrogate Recovery

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

### MS/MSD

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

### Laboratory Control Samples

Are all laboratory control sample recoveries within the QC limits ? No

If no, list sample ID where range was exceeded: See Notes

**Equipment Field Blank ID :** EB-2, EB-3

**Trip Blank ID :** NA

**Method Blank:** SW-846 8260C 4/17, 4/18/14  
6010 C 4/16, 4/17/14  
SM 4500-CL-E 4/22/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

### Notes:

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Sample CL10-s (12'), was re-analyzed at larger dilutions to bring the target analytes within the calibration range of the method. Both dilutions were reported with analytes over the range flagged with an "E" and the diluted analytes flagged with a "D"

All LCS and LCSD recoveries were within QC limits. All RPD values were acceptable except the Acetone RPD in batch 388778 on 4/17/14, which has been flagged with an "\*\*". The data was not impacted since the analytical results were non-detect for these analytes in these batches.

**Reviewed By:** Pernilla Haley, 6/9/14



April 23, 2014

Service Request No: R1402598

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150148-05000000**

Dear Mr. Cadorette:

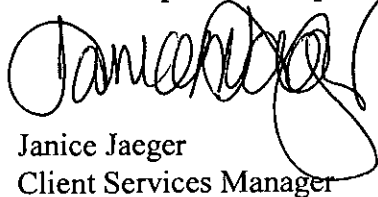
Enclosed are the results of the sample(s) submitted to our laboratory on April 11, 2014. For your reference, these analyses have been assigned our service request number **R1402598**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**



Janice Jaeger  
Client Services Manager

Page 1 of 50

CC: Pemilla Haley

## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Water

**Service Request No.:** R1402598  
**Project Number:** 150148-05000000  
**Date Received:** 04/11/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Water samples were collected on 04/08-10/14 and received at ALS in good condition at cooler temperatures of 5.5 – 5.7 °C as noted on the cooler receipt and preservation check form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #.

### Volatile Organics

Twenty water samples were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples CL10-S (12') were re-analyzed at larger dilutions to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D".

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Surrogate Standard recoveries were within QC limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were acceptable except the Acetone RPD on 04/17/14. All outlying QC has been flagged with an "\*\*". No data was affected.

All samples were analyzed within the required holding time of 14 days.

### Inorganic Analyses

Three water samples were analyzed for Chloride by SM3400-CI-E and Soluble Iron and Manganese by method 6010C. Soluble Metals were filtered in the field.

The initial and continuing calibration criteria were met for all analytes.

All Blank Spike (LCS) recoveries were within QC limits.

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402598

<u>Lab ID</u>	<u>Client ID</u>
R1402598-001	OB5-BR (100')
R1402598-002	OB5-DO (80')
R1402598-003	CL3-DO (71')
R1402598-004	W-1 (10')
R1402598-005	OB42-S (14')
R1402598-006	MW-34 (62')
R1402598-007	EB-2
R1402598-008	CULVERT OUTFALL
R1402598-009	OB6-BR (99')
R1402598-010	OB6-DO (65')
R1402598-011	CL8-DO (51')
R1402598-012	CL10-S (12')
R1402598-013	CL10-DO (30')
R1402598-014	CL10-BR (44')
R1402598-015	OB16-BR (20')
R1402598-016	OB16-S (15')
R1402598-017	MW2-32 TOZER (17')
R1402598-018	CL4-DO (28')
R1402598-019	CL4-BR (54')
R1402598-020	EB-3



## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.



## INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

### Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	3010A
200.8	ILM05.3
6010C	3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

### Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3010A
6010 SPLP (1312) extract	3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

RIGHT SOLUTIONS | RIGHT PARTNER

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis*

*Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of:* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

A handwritten signature in cursive script, appearing to read "Oscar C. Parcarolo".

*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: **01 JUL 2013**

**M-NY032      ALS ENVIRONMENTAL ROCHESTER  
                 ROCHESTER NY**

**NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014**

<u>Analytes</u>	<u>Methods</u>
ALUMINUM	EPA 200.7
ANTIMONY	EPA 200.7
ANTIMONY	EPA 200.8
ARSENIC	EPA 200.7
ARSENIC	EPA 200.8
BERYLLIUM	EPA 200.7
BERYLLIUM	EPA 200.8
CADMIUM	EPA 200.7
CADMIUM	EPA 200.8
CHROMIUM	EPA 200.7
CHROMIUM	EPA 200.8
COBALT	EPA 200.7
COBALT	EPA 200.8
COPPER	EPA 200.7
COPPER	EPA 200.8
IRON	EPA 200.7
LEAD	EPA 200.7
LEAD	EPA 200.8
MANGANESE	EPA 200.7
MANGANESE	EPA 200.8
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
MOLYBDENUM	EPA 200.8
NICKEL	EPA 200.7
NICKEL	EPA 200.8
SELENIUM	EPA 200.7
SELENIUM	EPA 200.8
SILVER	EPA 200.7
SILVER	EPA 200.8
THALLIUM	EPA 200.7
THALLIUM	EPA 200.8
VANADIUM	EPA 200.7
VANADIUM	EPA 200.8
ZINC	EPA 200.7
ZINC	EPA 200.8
SPECIFIC CONDUCTIVITY	EPA 120.1
TOTAL DISSOLVED SOLIDS	SM 2540C
HARDNESS (CACO3), TOTAL	SM 2340C
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
ALKALINITY, TOTAL	SM 2320B

June 25, 2013

\*= Provisional Certification

Page 1 of 2

00007

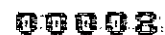
**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: 01 JUL 2013

M-NY032            **ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY**

**NON POTABLE WATER (CHEMISTRY)**            **Effective Date**    **01 JUL 2013**            **Expiration Date**    **30 JUN 2014**

<u>Analytes</u>	<u>Methods</u>
CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 385.1
PHOSPHORUS, TOTAL	EPA 385.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/8/14 1330  
 Date Received: 4/11/14  
 Date Analyzed: 4/17/14 17:11

Sample Name: OB5-BR (100')  
 Lab Code: R1402598-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8480.D\

Analysis Lot: 388728  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	4.2		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	8.4		2.0	
156-59-2	cis-1,2-Dichloroethene	16		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/17/14 17:11	
Dibromofluoromethane	96	70-130	4/17/14 17:11	
Toluene-d8	99	70-130	4/17/14 17:11	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: OB5-DO (80')  
 Lab Code: R1402598-002

Service Request: R1402598  
 Date Collected: 4/ 8/14 1400  
 Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	32.4	mg/L	1.0	1	NA	4/22/14 13:04	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: OB5-DO (80')  
 Lab Code: R1402598-002

Service Request: R1402598  
 Date Collected: 4/ 8/14 1400  
 Date Received: 4/11/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	300	µg/L	100	1	4/15/14	4/17/14 00:25	
Manganese, Dissolved	6010C	226	µg/L	10	1	4/15/14	4/17/14 14:37	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/ 8/14 1400  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 20:00

Sample Name: OB5-DO (80')  
 Lab Code: R1402598-002

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA12\DATA\041814\J4897.D\

Analysis Lot: 388863  
 Instrument Name: R-MS-12  
 Dilution Factor: 10

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	20	U	20	
79-34-5	1,1,2,2-Tetrachloroethane	20	U	20	
79-00-5	1,1,2-Trichloroethane	20	U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20	U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	20	U	20	
107-06-2	1,2-Dichloroethane	20	U	20	
78-87-5	1,2-Dichloropropane	20	U	20	
67-64-1	Acetone	100	U	100	
75-27-4	Bromodichloromethane	20	U	20	
75-25-2	Bromoform	20	U	20	
74-83-9	Bromomethane	20	U	20	
56-23-5	Carbon Tetrachloride	20	U	20	
108-90-7	Chlorobenzene	20	U	20	
75-00-3	Chloroethane	20	U	20	
67-66-3	Chloroform	20	U	20	
74-87-3	Chloromethane	20	U	20	
124-48-1	Dibromochloromethane	20	U	20	
75-09-2	Methylene Chloride	20	U	20	
127-18-4	Tetrachloroethene (PCE)	590		20	
79-01-6	Trichloroethene (TCE)	1800		20	
75-69-4	Trichlorofluoromethane (CFC 11)	20	U	20	
75-01-4	Vinyl Chloride	78		20	
156-59-2	cis-1,2-Dichloroethene	1700		20	
10061-01-5	cis-1,3-Dichloropropene	20	U	20	
156-60-5	trans-1,2-Dichloroethene	20	U	20	
10061-02-6	trans-1,3-Dichloropropene	20	U	20	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	4/18/14 20:00	
Dibromofluoromethane	102	70-130	4/18/14 20:00	
Toluene-d8	99	70-130	4/18/14 20:00	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: CL3-DO (71')  
Lab Code: R1402598-003

Service Request: R1402598  
Date Collected: 4/9/14 0730  
Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	12.4	mg/L	1.0	1	NA	4/22/14 13:04	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: CL3-DO (71')  
 Lab Code: R1402598-003

Service Request: R1402598  
 Date Collected: 4/9/14 0730  
 Date Received: 4/11/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 00:31	
Manganese, Dissolved	6010C	99		µg/L	10	1	4/15/14	4/17/14 14:43	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/9/14 0730  
 Date Received: 4/11/14  
 Date Analyzed: 4/17/14 17:49

Sample Name: CL3-DO (71')  
 Lab Code: R1402598-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8481.D\

Analysis Lot: 388728  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	16		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	70-130	4/17/14 17:49	
Dibromofluoromethane	97	70-130	4/17/14 17:49	
Toluene-d8	99	70-130	4/17/14 17:49	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/9/14 0830  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 07:08

Sample Name: W-1 (10')  
 Lab Code: R1402598-004

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\MSVOA7\DATA\041714\K8502.D\

Analysis Lot: 388729  
 Instrument Name: R-MS-07  
 Dilution Factor: 10

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	20	U	20	
79-34-5	1,1,2,2-Tetrachloroethane	20	U	20	
79-00-5	1,1,2-Trichloroethane	20	U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20	U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	20	U	20	
107-06-2	1,2-Dichloroethane	20	U	20	
78-87-5	1,2-Dichloropropane	20	U	20	
67-64-1	Acetone	100	U	100	
75-27-4	Bromodichloromethane	20	U	20	
75-25-2	Bromoform	20	U	20	
74-83-9	Bromomethane	20	U	20	
56-23-5	Carbon Tetrachloride	20	U	20	
108-90-7	Chlorobenzene	20	U	20	
75-00-3	Chloroethane	20	U	20	
67-66-3	Chloroform	20	U	20	
74-87-3	Chloromethane	20	U	20	
124-48-1	Dibromochloromethane	20	U	20	
75-09-2	Methylene Chloride	20	U	20	
127-18-4	Tetrachloroethene (PCE)	33		20	
79-01-6	Trichloroethene (TCE)	980		20	
75-69-4	Trichlorofluoromethane (CFC 11)	20	U	20	
75-01-4	Vinyl Chloride	20	U	20	
156-59-2	cis-1,2-Dichloroethene	420		20	
10061-01-5	cis-1,3-Dichloropropene	20	U	20	
156-60-5	trans-1,2-Dichloroethene	20	U	20	
10061-02-6	trans-1,3-Dichloropropene	20	U	20	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/18/14 07:08	
Dibromofluoromethane	95	70-130	4/18/14 07:08	
Toluene-d8	99	70-130	4/18/14 07:08	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/9/14 0930  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 07:46

Sample Name: OB42-S (14')  
 Lab Code: R1402598-005

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8503.D\

Analysis Lot: 388729  
 Instrument Name: R-MS-07  
 Dilution Factor: 20

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	40	U	40	
79-34-5	1,1,2,2-Tetrachloroethane	40	U	40	
79-00-5	1,1,2-Trichloroethane	40	U	40	
75-34-3	1,1-Dichloroethane (1,1-DCA)	40	U	40	
75-35-4	1,1-Dichloroethene (1,1-DCE)	40	U	40	
107-06-2	1,2-Dichloroethane	40	U	40	
78-87-5	1,2-Dichloropropane	40	U	40	
67-64-1	Acetone	200	U	200	
75-27-4	Bromodichloromethane	40	U	40	
75-25-2	Bromoform	40	U	40	
74-83-9	Bromomethane	40	U	40	
56-23-5	Carbon Tetrachloride	40	U	40	
108-90-7	Chlorobenzene	40	U	40	
75-00-3	Chloroethane	40	U	40	
67-66-3	Chloroform	40	U	40	
74-87-3	Chloromethane	40	U	40	
124-48-1	Dibromochloromethane	40	U	40	
75-09-2	Methylene Chloride	40	U	40	
127-18-4	Tetrachloroethene (PCE)	82		40	
79-01-6	Trichloroethene (TCE)	2400		40	
75-69-4	Trichlorofluoromethane (CFC 11)	40	U	40	
75-01-4	Vinyl Chloride	40	U	40	
156-59-2	cis-1,2-Dichloroethene	960		40	
10061-01-5	cis-1,3-Dichloropropene	40	U	40	
156-60-5	trans-1,2-Dichloroethene	40	U	40	
10061-02-6	trans-1,3-Dichloropropene	40	U	40	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	4/18/14 07:46	
Dibromofluoromethane	96	70-130	4/18/14 07:46	
Toluene-d8	99	70-130	4/18/14 07:46	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/9/14 1030  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 08:24

Sample Name: MW-34 (62')  
 Lab Code: R1402598-006

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8504.D\

Analysis Lot: 388729  
 Instrument Name: R-MS-07  
 Dilution Factor: 10

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	20	U	20	
79-34-5	1,1,2,2-Tetrachloroethane	20	U	20	
79-00-5	1,1,2-Trichloroethane	20	U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20	U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	20	U	20	
107-06-2	1,2-Dichloroethane	20	U	20	
78-87-5	1,2-Dichloropropane	20	U	20	
67-64-1	Acetone	100	U	100	
75-27-4	Bromodichloromethane	20	U	20	
75-25-2	Bromoform	20	U	20	
74-83-9	Bromomethane	20	U	20	
56-23-5	Carbon Tetrachloride	20	U	20	
108-90-7	Chlorobenzene	20	U	20	
75-00-3	Chloroethane	20	U	20	
67-66-3	Chloroform	20	U	20	
74-87-3	Chloromethane	20	U	20	
124-48-1	Dibromochloromethane	20	U	20	
75-09-2	Methylene Chloride	20	U	20	
127-18-4	Tetrachloroethene (PCE)	20	U	20	
79-01-6	Trichloroethene (TCE)	130		20	
75-69-4	Trichlorofluoromethane (CFC 11)	20	U	20	
75-01-4	Vinyl Chloride	20	U	20	
156-59-2	cis-1,2-Dichloroethene	1300		20	
10061-01-5	cis-1,3-Dichloropropene	20	U	20	
156-60-5	trans-1,2-Dichloroethene	20	U	20	
10061-02-6	trans-1,3-Dichloropropene	20	U	20	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	70-130	4/18/14 08:24	
Dibromofluoromethane	95	70-130	4/18/14 08:24	
Toluene-d8	98	70-130	4/18/14 08:24	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/9/14 1100  
 Date Received: 4/11/14  
 Date Analyzed: 4/17/14 15:54

Sample Name: EB-2  
 Lab Code: R1402598-007

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8478.D\

Analysis Lot: 388728  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	70-130	4/17/14 15:54	
Dibromofluoromethane	96	70-130	4/17/14 15:54	
Toluene-d8	95	70-130	4/17/14 15:54	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/9/14 11:45  
 Date Received: 4/11/14  
 Date Analyzed: 4/17/14 18:27

Sample Name: CULVERT OUTFALL  
 Lab Code: R1402598-008

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\MSVOA7\DATA\041714\K8482.D\

Analysis Lot: 388728  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	8.5		2.0	
79-01-6	Trichloroethene (TCE)	43		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	43		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	70-130	4/17/14 18:27	
Dibromofluoromethane	94	70-130	4/17/14 18:27	
Toluene-d8	97	70-130	4/17/14 18:27	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/9/14 1230  
 Date Received: 4/11/14  
 Date Analyzed: 4/17/14 19:05

Sample Name: OB6-BR (99')  
 Lab Code: R1402598-009

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8483.D\

Analysis Lot: 388728  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	39		2.0	
79-01-6	Trichloroethene (TCE)	110		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	17		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	70-130	4/17/14 19:05	
Dibromofluoromethane	93	70-130	4/17/14 19:05	
Toluene-d8	98	70-130	4/17/14 19:05	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: OB6-DO (65')  
Lab Code: R1402598-010

Service Request: R1402598  
Date Collected: 4/ 9/14 1300  
Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	32.7	mg/L	1.0	1	NA	4/22/14 13:05	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: OB6-DO (65')  
 Lab Code: R1402598-010

Service Request: R1402598  
 Date Collected: 4/9/14 1300  
 Date Received: 4/11/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	110	µg/L	100	1	4/15/14	4/17/14 00:38	
Manganese, Dissolved	6010C	130	µg/L	10	1	4/15/14	4/17/14 14:49	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/9/14 1300  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 19:28

Sample Name: OB6-DO (65')  
 Lab Code: R1402598-010

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\MSVOA12\DATA\041814\J4896.D\

Analysis Lot: 388863  
 Instrument Name: R-MS-12  
 Dilution Factor: 2.5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.0	U	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
67-64-1	Acetone	25	U	25	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-09-2	Methylene Chloride	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	51		5.0	
79-01-6	Trichloroethene (TCE)	140		5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	13		5.0	
156-59-2	cis-1,2-Dichloroethene	390		5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0	U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/18/14 19:28	
Dibromofluoromethane	102	70-130	4/18/14 19:28	
Toluene-d8	96	70-130	4/18/14 19:28	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/9/14 1330  
 Date Received: 4/11/14  
 Date Analyzed: 4/17/14 19:43

Sample Name: CL8-DO (51')  
 Lab Code: R1402598-011

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8484.D\

Analysis Lot: 388728  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	70-130	4/17/14 19:43	
Dibromofluoromethane	94	70-130	4/17/14 19:43	
Toluene-d8	98	70-130	4/17/14 19:43	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/10/14 0700  
 Date Received: 4/11/14  
 Date Analyzed: 4/17/14 20:21

Sample Name: CL10-S (12')  
 Lab Code: R1402598-012

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\MSVOA7\DATA\041714\K8485.D\

Analysis Lot: 388728  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	1300	E	2.0	
79-01-6	Trichloroethene (TCE)	130		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	46		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	70-130	4/17/14 20:21	
Dibromofluoromethane	94	70-130	4/17/14 20:21	
Toluene-d8	98	70-130	4/17/14 20:21	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/10/14 0700  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 20:32

Sample Name: CL10-S (12')  
 Lab Code: R1402598-012  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA12\DATA\041814U4898.D\

Analysis Lot: 388863  
 Instrument Name: R-MS-12  
 Dilution Factor: 10

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	20	U	20	
79-34-5	1,1,2,2-Tetrachloroethane	20	U	20	
79-00-5	1,1,2-Trichloroethane	20	U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20	U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	20	U	20	
107-06-2	1,2-Dichloroethane	20	U	20	
78-87-5	1,2-Dichloropropane	20	U	20	
67-64-1	Acetone	100	U	100	
75-27-4	Bromodichloromethane	20	U	20	
75-25-2	Bromoform	20	U	20	
74-83-9	Bromomethane	20	U	20	
56-23-5	Carbon Tetrachloride	20	U	20	
108-90-7	Chlorobenzene	20	U	20	
75-00-3	Chloroethane	20	U	20	
67-66-3	Chloroform	20	U	20	
74-87-3	Chloromethane	20	U	20	
124-48-1	Dibromochloromethane	20	U	20	
75-09-2	Methylene Chloride	20	U	20	
127-18-4	Tetrachloroethene (PCE)	1800	D	20	
79-01-6	Trichloroethene (TCE)	150	D	20	
75-69-4	Trichlorofluoromethane (CFC 11)	20	U	20	
75-01-4	Vinyl Chloride	20	U	20	
156-59-2	cis-1,2-Dichloroethene	47	D	20	
10061-01-5	cis-1,3-Dichloropropene	20	U	20	
156-60-5	trans-1,2-Dichloroethene	20	U	20	
10061-02-6	trans-1,3-Dichloropropene	20	U	20	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	4/18/14 20:32	
Dibromofluoromethane	102	70-130	4/18/14 20:32	
Toluene-d8	98	70-130	4/18/14 20:32	



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: CL10-DO (30')  
 Lab Code: R1402598-013

Service Request: R1402598  
 Date Collected: 4/10/14 0800  
 Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	50.1	mg/L	1.0	1	NA	4/22/14 13:05	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: CL10-DO (30')  
 Lab Code: R1402598-013

Service Request: R1402598  
 Date Collected: 4/10/14 0800  
 Date Received: 4/11/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 00:44	
Manganese, Dissolved	6010C	178000		µg/L	2000	200	4/15/14	4/17/14 14:56	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/10/14 0800  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 18:55

Sample Name: CL10-DO (30')  
 Lab Code: R1402598-013

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\MSVOA12\DATA\041814U4895.D\

Analysis Lot: 388863  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/18/14 18:55	
Dibromofluoromethane	100	70-130	4/18/14 18:55	
Toluene-d8	95	70-130	4/18/14 18:55	



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/10/14 0900  
 Date Received: 4/11/14  
 Date Analyzed: 4/17/14 21:37

Sample Name: CL10-BR (44')  
 Lab Code: R1402598-014

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8487.D\

Analysis Lot: 388728  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	70-130	4/17/14 21:37	
Dibromofluoromethane	94	70-130	4/17/14 21:37	
Toluene-d8	99	70-130	4/17/14 21:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/10/14 0930  
 Date Received: 4/11/14  
 Date Analyzed: 4/17/14 22:15

Sample Name: OB16-BR (20')  
 Lab Code: R1402598-015

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8488.D\

Analysis Lot: 388728  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/17/14 22:15	
Dibromofluoromethane	94	70-130	4/17/14 22:15	
Toluene-d8	98	70-130	4/17/14 22:15	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/10/14 1000  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 04:35

Sample Name: OB16-S (15')  
 Lab Code: R1402598-016

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8498.D\

Analysis Lot: 388729  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/18/14 04:35	
Dibromofluoromethane	92	70-130	4/18/14 04:35	
Toluene-d8	99	70-130	4/18/14 04:35	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/10/14 1030  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 09:41

Sample Name: MW2-32 TOZER (17')  
 Lab Code: R1402598-017

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\MSVOA7\DATA\041714\K8506.D\

Analysis Lot: 388729  
 Instrument Name: R-MS-07  
 Dilution Factor: 50

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	100	U	100	
79-34-5	1,1,2,2-Tetrachloroethane	100	U	100	
79-00-5	1,1,2-Trichloroethane	100	U	100	
75-34-3	1,1-Dichloroethane (1,1-DCA)	100	U	100	
75-35-4	1,1-Dichloroethene (1,1-DCE)	100	U	100	
107-06-2	1,2-Dichloroethane	100	U	100	
78-87-5	1,2-Dichloropropane	100	U	100	
67-64-1	Acetone	500	U	500	
75-27-4	Bromodichloromethane	100	U	100	
75-25-2	Bromoform	100	U	100	
74-83-9	Bromomethane	100	U	100	
56-23-5	Carbon Tetrachloride	100	U	100	
108-90-7	Chlorobenzene	100	U	100	
75-00-3	Chloroethane	100	U	100	
67-66-3	Chloroform	100	U	100	
74-87-3	Chloromethane	100	U	100	
124-48-1	Dibromochloromethane	100	U	100	
75-09-2	Methylene Chloride	100	U	100	
127-18-4	Tetrachloroethene (PCE)	4900		100	
79-01-6	Trichloroethene (TCE)	970		100	
75-69-4	Trichlorofluoromethane (CFC 11)	100	U	100	
75-01-4	Vinyl Chloride	100	U	100	
156-59-2	cis-1,2-Dichloroethene	2200		100	
10061-01-5	cis-1,3-Dichloropropene	100	U	100	
156-60-5	trans-1,2-Dichloroethene	100	U	100	
10061-02-6	trans-1,3-Dichloropropene	100	U	100	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/18/14 09:41	
Dibromofluoromethane	95	70-130	4/18/14 09:41	
Toluene-d8	99	70-130	4/18/14 09:41	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/10/14 1100  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 05:13

Sample Name: CL4-DO (28')  
 Lab Code: R1402598-018

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\MSVOA7\DATA\041714\K8499.D\

Analysis Lot: 388729  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	45		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	3.6		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	70-130	4/18/14 05:13	
Dibromofluoromethane	93	70-130	4/18/14 05:13	
Toluene-d8	99	70-130	4/18/14 05:13	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/10/14 1130  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 05:51

Sample Name: CL4-BR (54')  
 Lab Code: R1402598-019

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8500.D\

Analysis Lot: 388729  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	65		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	70-130	4/18/14 05:51	
Dibromofluoromethane	93	70-130	4/18/14 05:51	
Toluene-d8	98	70-130	4/18/14 05:51	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: 4/10/14 1200  
 Date Received: 4/11/14  
 Date Analyzed: 4/17/14 16:33

Sample Name: EB-3  
 Lab Code: R1402598-020

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8479.D\

Analysis Lot: 388728  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/17/14 16:33	
Dibromofluoromethane	95	70-130	4/17/14 16:33	
Toluene-d8	98	70-130	4/17/14 16:33	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: Method Blank  
Lab Code: R1402598-MB

Service Request: R1402598  
Date Collected: NA  
Date Received: NA  
Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	1.0	U	mg/L	1.0	1	NA	4/22/14 13:02	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: Method Blank  
 Lab Code: R1402598-MB

Service Request: R1402598  
 Date Collected: NA  
 Date Received: NA  
 Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/16/14 23:10	
Manganese, Dissolved	6010C	10	U	µg/L	10	1	4/15/14	4/17/14 14:25	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/17/14 14:00

Sample Name: Method Blank  
 Lab Code: RQ1403957-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8475.D\

Analysis Lot: 388728  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/17/14 14:00	
Dibromofluoromethane	95	70-130	4/17/14 14:00	
Toluene-d8	100	70-130	4/17/14 14:00	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/18/14 03:19

Sample Name: Method Blank  
 Lab Code: RQ1403965-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041714\K8496.D

Analysis Lot: 388729  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	70-130	4/18/14 03:19	
Dibromofluoromethane	95	70-130	4/18/14 03:19	
Toluene-d8	99	70-130	4/18/14 03:19	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/18/14 14:06

Sample Name: Method Blank  
 Lab Code: RQ1403837-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041814J4886.D\

Analysis Lot: 388863  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/18/14 14:06	
Dibromofluoromethane	102	70-130	4/18/14 14:06	
Toluene-d8	98	70-130	4/18/14 14:06	

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 General Chemistry Parameters

Units: mg/L  
 Basis: NA

Analyte Name	Method	Lab Control Sample R1402598-LCS			% Rec Limits
		Result	Spike Amount	% Rec	
Chloride	SM 4500-Cl-E-1997(20)	23.8	25.0	95	86 - 110

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Analyzed: 4/16/14 -  
 4/17/14

Lab Control Sample Summary  
 Inorganic Parameters

Units: µg/L  
 Basis: NA

Lab Control Sample  
 R1402598-LCS

Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Iron, Dissolved	6010C	1040	1000	104	80 - 120
Manganese, Dissolved	6010C	489	500	98	80 - 120

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Analyzed: 4/17/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 388728

Analyte Name	Lab Control Sample RQ1403957-03			Duplicate Lab Control Sample RQ1403957-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	19.2	20.0	96	19.5	20.0	98	70 - 130	2	20
1,1,2,2-Tetrachloroethane	20.2	20.0	101	20.3	20.0	101	70 - 130	<1	20
1,1,2-Trichloroethane	19.7	20.0	99	20.2	20.0	101	70 - 130	3	20
1,1-Dichloroethane (1,1-DCA)	20.3	20.0	102	20.5	20.0	102	70 - 130	<1	20
1,1-Dichloroethene (1,1-DCE)	23.7	20.0	119	23.5	20.0	117	70 - 130	1	20
1,2-Dichloroethane	18.9	20.0	94	19.2	20.0	96	70 - 130	2	20
1,2-Dichloropropane	21.4	20.0	107	22.1	20.0	111	70 - 130	3	20
Acetone	18.7	20.0	94	13.6	20.0	68	40 - 160	32 *	20
Bromodichloromethane	19.9	20.0	100	20.1	20.0	101	70 - 130	<1	20
Bromoform	20.3	20.0	102	19.6	20.0	98	70 - 130	4	20
Bromomethane	20.6	20.0	103	20.7	20.0	104	40 - 160	<1	20
Carbon Tetrachloride	19.5	20.0	98	20.1	20.0	100	70 - 130	3	20
Chlorobenzene	20.7	20.0	103	20.8	20.0	104	70 - 130	<1	20
Chloroethane	20.7	20.0	104	21.3	20.0	106	70 - 130	3	20
Chloroform	19.5	20.0	97	19.5	20.0	97	70 - 130	<1	20
Chloromethane	21.3	20.0	106	21.8	20.0	109	40 - 160	2	20
Dibromochloromethane	20.2	20.0	101	19.9	20.0	99	70 - 130	1	20
Methylene Chloride	20.5	20.0	102	20.7	20.0	104	70 - 130	1	20
Tetrachloroethene (PCE)	21.7	20.0	109	21.4	20.0	107	70 - 130	2	20
Trichloroethene (TCE)	20.8	20.0	104	21.1	20.0	105	70 - 130	1	20
Trichlorofluoromethane (CFC 11)	19.3	20.0	96	19.7	20.0	98	70 - 130	2	20
Vinyl Chloride	21.4	20.0	107	21.3	20.0	106	70 - 130	<1	20
cis-1,2-Dichloroethene	20.5	20.0	103	20.7	20.0	103	70 - 130	<1	20
cis-1,3-Dichloropropene	19.7	20.0	98	20.1	20.0	100	70 - 130	2	20
trans-1,2-Dichloroethene	21.6	20.0	108	21.2	20.0	106	70 - 130	2	20
trans-1,3-Dichloropropene	19.4	20.0	97	19.3	20.0	96	70 - 130	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 388729

Analyte Name	Lab Control Sample RQ1403965-03			Duplicate Lab Control Sample RQ1403965-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	18.8	20.0	94	18.4	20.0	92	70 - 130	2	20
1,1,2,2-Tetrachloroethane	17.5	20.0	88	18.3	20.0	91	70 - 130	4	20
1,1,2-Trichloroethane	20.0	20.0	100	20.3	20.0	101	70 - 130	1	20
1,1-Dichloroethane (1,1-DCA)	20.6	20.0	103	20.1	20.0	100	70 - 130	3	20
1,1-Dichloroethene (1,1-DCE)	22.3	20.0	112	22.5	20.0	113	70 - 130	<1	20
1,2-Dichloroethane	18.5	20.0	92	17.8	20.0	89	70 - 130	4	20
1,2-Dichloropropane	21.2	20.0	106	20.8	20.0	104	70 - 130	2	20
Acetone	18.0	20.0	90	19.9	20.0	100	40 - 160	10	20
Bromodichloromethane	19.6	20.0	98	19.5	20.0	98	70 - 130	<1	20
Bromoform	19.4	20.0	97	20.2	20.0	101	70 - 130	4	20
Bromomethane	18.7	20.0	94	19.4	20.0	97	40 - 160	4	20
Carbon Tetrachloride	19.1	20.0	96	18.5	20.0	92	70 - 130	3	20
Chlorobenzene	20.6	20.0	103	20.7	20.0	104	70 - 130	<1	20
Chloroethane	20.7	20.0	103	20.2	20.0	101	70 - 130	2	20
Chloroform	19.4	20.0	97	18.9	20.0	95	70 - 130	2	20
Chloromethane	21.1	20.0	105	21.2	20.0	106	40 - 160	<1	20
Dibromochloromethane	19.4	20.0	97	20.3	20.0	102	70 - 130	4	20
Methylene Chloride	20.0	20.0	100	20.5	20.0	102	70 - 130	2	20
Tetrachloroethene (PCE)	21.3	20.0	107	21.2	20.0	106	70 - 130	<1	20
Trichloroethene (TCE)	22.1	20.0	110	21.5	20.0	107	70 - 130	3	20
Trichlorofluoromethane (CFC 11)	18.3	20.0	91	18.2	20.0	91	70 - 130	<1	20
Vinyl Chloride	20.3	20.0	101	20.3	20.0	102	70 - 130	<1	20
cis-1,2-Dichloroethene	20.2	20.0	101	20.7	20.0	104	70 - 130	3	20
cis-1,3-Dichloropropene	19.0	20.0	95	18.6	20.0	93	70 - 130	2	20
trans-1,2-Dichloroethene	21.0	20.0	105	21.1	20.0	105	70 - 130	<1	20
trans-1,3-Dichloropropene	18.9	20.0	94	18.5	20.0	92	70 - 130	2	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402598  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

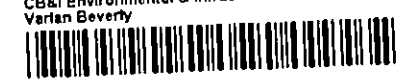
Units: µg/L  
 Basis: NA

Analysis Lot: 388863

Analyte Name	Lab Control Sample RQ1403837-03			Duplicate Lab Control Sample RQ1403837-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	20.2	20.0	101	20.5	20.0	102	70 - 130	2	20
1,1,2,2-Tetrachloroethane	20.2	20.0	101	20.6	20.0	103	70 - 130	2	20
1,1,2-Trichloroethane	20.8	20.0	104	19.7	20.0	99	70 - 130	5	20
1,1-Dichloroethane (1,1-DCA)	19.5	20.0	98	19.9	20.0	99	70 - 130	2	20
1,1-Dichloroethene (1,1-DCE)	22.7	20.0	114	23.4	20.0	117	70 - 130	3	20
1,2-Dichloroethane	21.3	20.0	106	20.9	20.0	104	70 - 130	2	20
1,2-Dichloropropane	19.7	20.0	98	20.2	20.0	101	70 - 130	3	20
Acetone	24.7	20.0	123	24.5	20.0	122	40 - 160	<1	20
Bromodichloromethane	21.4	20.0	107	22.0	20.0	110	70 - 130	3	20
Bromoform	21.1	20.0	105	21.3	20.0	107	70 - 130	1	20
Bromomethane	22.7	20.0	114	22.1	20.0	111	40 - 160	3	20
Carbon Tetrachloride	19.6	20.0	98	20.4	20.0	102	70 - 130	4	20
Chlorobenzene	21.1	20.0	105	21.2	20.0	106	70 - 130	<1	20
Chloroethane	21.7	20.0	109	21.6	20.0	108	70 - 130	<1	20
Chloroform	19.5	20.0	98	20.3	20.0	102	70 - 130	4	20
Chloromethane	21.1	20.0	106	22.0	20.0	110	40 - 160	4	20
Dibromochloromethane	21.9	20.0	110	22.2	20.0	111	70 - 130	1	20
Methylene Chloride	19.4	20.0	97	19.8	20.0	99	70 - 130	2	20
Tetrachloroethene (PCE)	21.1	20.0	106	21.5	20.0	108	70 - 130	2	20
Trichloroethene (TCE)	20.8	20.0	104	21.8	20.0	109	70 - 130	5	20
Trichlorofluoromethane (CFC 11)	20.3	20.0	102	20.5	20.0	102	70 - 130	<1	20
Vinyl Chloride	22.9	20.0	114	23.6	20.0	118	70 - 130	3	20
cis-1,2-Dichloroethene	19.7	20.0	98	20.3	20.0	101	70 - 130	3	20
cis-1,3-Dichloropropene	20.2	20.0	101	20.1	20.0	101	70 - 130	<1	20
trans-1,2-Dichloroethene	19.8	20.0	99	20.2	20.0	101	70 - 130	2	20
trans-1,3-Dichloropropene	22.1	20.0	110	22.4	20.0	112	70 - 130	1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																		
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <b>1</b>																		
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 625 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCB's <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) <b>Chloride</b>																	
150 Royall Street																						
Canton, MA 02021																						
Phone # <b>617-589-6102</b> E-mail <b>Raymond.Cadorette@CBI.com</b>																						
Sampler's Signature <i>Michael Leary</i>		Sampler's Printed Name <b>RAYMOND C. CADORETTE</b>		Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____  REMARKS/ ALTERNATE DESCRIPTION																		
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME													MATRIX						
<b>OB5-BR (100')</b>			<b>4/8/14 1330</b>		<b>GW</b>	<b>3</b>	<b>3</b>															
<b>OB5-DO (80')</b>			<b>4/8/14 1400</b>			<b>5</b>	<b>3</b>															
<b>CL3-DO (71')</b>			<b>4/9/14 0730</b>			<b>5</b>	<b>3</b>															
<b>W-1 (10')</b>			<b>4/9/14 0830</b>			<b>3</b>	<b>3</b>															
<b>OB42-5 (14')</b>			<b>4/9/14 0930</b>			<b>3</b>	<b>3</b>															
<b>MW-34 (62')</b>			<b>4/9/14 1030</b>			<b>3</b>	<b>3</b>															
<b>EB-2</b>			<b>4/9/14 1100</b>			<b>3</b>	<b>3</b>															
<b>CULVERT OUTFALL</b>			<b>4/9/14 1145</b>			<b>3</b>	<b>3</b>															
<b>OB6-BR (99')</b>			<b>4/9/14 1230</b>			<b>3</b>	<b>3</b>															
<b>OB6-DO (65')</b>			<b>4/9/14 1300</b>		<b>✓</b>	<b>5</b>	<b>3</b>															
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field filtered Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD and PDF of report to: Catherine.Joe@CBI.com.				TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) ___ 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day <input checked="" type="checkbox"/> Standard				REPORT REQUIREMENTS ___ I. Results Only ___ II. Results + OC Summaries (LCS, DUP, MSMSD as required) ___ III. Results + OC and Calibration Summaries ___ IV. Data Validation Report with R				INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>										
See QAPP <input type="checkbox"/>				REQUESTED REPORT DATE				Edata <input checked="" type="checkbox"/> Yes ___ No				<b>R1402598 7 Y</b> CB&I Environmental & Infrastructure Varian Beverly 										
STATE WHERE SAMPLES WERE COLLECTED: <b>MASS</b>																						
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY								
Signature <i>Michael Leary</i>		Signature <i>J. Swann</i>		Signature		Signature		Signature		Signature		Signature		Signature								
Printed Name <b>Michael Leary</b>		Printed Name <b>J. Swann</b>		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name								
Firm <b>CBI</b>		Firm <b>MS</b>		Firm		Firm		Firm		Firm		Firm		Firm								
Date/Time <b>4/11/14 1430</b>		Date/Time <b>4/11/14 0845</b>		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time								

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)												
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE												
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 825 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCBs <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) chloride												
150 Royall Street																
Canton, MA 02021																
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@CBI.com</b>														
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <b>Daniel C. Vandy</b>		Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____												
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME MATRIX													REMARKS/ ALTERNATE DESCRIPTION
CL8-DO (31')			4/9/14 1330 GW													
CL10-S (12')			4/10/14 0700													
CL10-DO (30')			4/10/14 0800		1 1											
CL10-BR (44')			4/10/14 0900													
OB16-BR (20')			4/10/14 0930													
OB16-S (15')			4/10/14 1000													
MW2-32 TOZER (17')			4/10/14 1030													
CL4-DO (28')			4/10/14 1100													
CL4-BR (54')			4/10/14 1130													
EB-3			4/10/14 1200													
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field filtered Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD and PDF of report to: Catherine.Joe@CBI.com.				TURNAROUND REQUIREMENTS ___ RUSH (SURCHARGES APPLY) ___ 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day <input checked="" type="checkbox"/> Standard				REPORT REQUIREMENTS ___ I. Results Only ___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required) ___ III. Results + QC and Calibration Summaries ___ IV. Data Validation Report with R...				INVOICE INFORMATION PO #: 873489 BILL TO: CB&I R1402598 7 Y CB&I Environmental & Infrastructure Varian Beverly				
																See OAPP <input type="checkbox"/>
STATE WHERE SAMPLES WERE COLLECTED: <b>MASS</b>																
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		
Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature		Signature		Signature		Signature		Signature		Signature		
Printed Name <b>Daniel C. Vandy</b>		Printed Name <b>D. Vandy</b>		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		
Firm <b>CBI</b>		Firm <b>ACS</b>		Firm		Firm		Firm		Firm		Firm		Firm		
Date/Time <b>4/10/14 14:00</b>		Date/Time <b>4/11/14 0845</b>		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		



# Cooler Receipt and Preservation Check Form

Project/Client CB&I Folder Number 214-2598

Cooler received on 4/11 by: JS COURIER: ALS UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler? YES NO
2. Were custody papers properly filled out (ink, signed, etc.)? YES NO
3. Did all bottles arrive in good condition (unbroken)? YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES NO N/A
5. Were Ice or Ice packs present? YES NO
6. Where did the bottles originate? ALS/ROE, CLIENT
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
8. Temperature of cooler(s) upon receipt: 5.7 5.5 \_\_\_\_\_

Is the temperature within 0° - 6° C?: Y N Y N Y N Y N Y N  
If No, Explain Below Date/Time Temperatures Taken: 4/11/14 0905

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location room by JS on 4/11/14 at 0906  
5035 samples placed in storage location \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: MSW 4/11/14

Cooler Breakdown: Date: 4/14/14 Time: 0848 by: JS

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	YES NO		Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK No = Samples were preserved at lab as listed PM OK to Adjust: _____
		YES	NO							
≥12	NaOH									
≤2	HNO <sub>3</sub>	✓		B032L134B	2/15					
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-			*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet				
	Zn Aceta	-	-							
	HCl	*	*	4112120	3/15					

Bottle lot numbers: 4-002-003  
Other Comments:

PC Secondary Review: MSW 4/22/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

<b>Project Name :</b>	Varian Medical Systems, Inc	<b>Job Number :</b>	150148.05
<b>Prepared By:</b>	Dale Dailey	<b>Date :</b>	6/2/2014
<b>Matrix:</b>	Groundwater		
<b>Analyte Group :</b>	Volatile Organics Metals Chloride	<b>Analytical Method :</b>	SW-846 8260C 6010 C SM 4500-CL-E
<b>Completed MADEP CAM Certification Form included:</b>	Yes	<b>Laboratory ID No. :</b>	R1402601
<b>Chain of Custody included in Data Package ?</b>	Yes	<b>Is it Complete ?</b>	Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/9, 4/10/14	SW-846 8260C	14 days	10 days	4/18-4/21/14
4/9, 4/10/14	6010 C	180 Days	180 Days	4/17/2014
4/9, 4/10/14	SM 4500-CL-E	28 Days	28 Days	4/22/14

**Sample temperature within QC limits:** Yes, 5.7 C

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? No

If no, list sample ID where range was exceeded: See Notes

**Equipment Field Blank ID :** NA  
**Trip Blank ID :** TB-2

<b>Method Blank:</b>	SW-846 8260C	4/17, 4/18/14
	6010 C	4/16, 4/17/14
	SM 4500-CL-E	4/22/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. RW-22 (104), OB 12 DO (47), MW-16 (35), AP12-S (26), and AP12-DO (48) were re-analyzed at larger dilutions to bring the target analytes within the calibration range of the method. Both dilutions were reported with analytes over the range flagged with an "E" and the diluted analytes flagged with a "D"

All LCS and LCSD recoveries were within QC limits except Bromomethane was outside limits high in batch 389045.

The data was not impacted since the analytical results were non-detect for this analyte in this batch.

All RPD's were acceptable except various RPD's were outside limits in batch 388873. All outlying QC has been flagged with an "".

The data was impacted for analyte Vinyl Chloride which was given a J qualifier in OB9-DO (92), OB9-BR (117), and MW-9A (13)

No other data was impacted since the analytical results were non-detect for these analytes in these batches.

**Reviewed By:** Pernilla Haley, 6/5/14





April 23, 2014

Service Request No: R1402601

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150148-05000000**

Dear Mr. Cadorette:

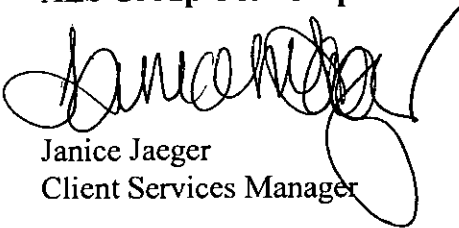
Enclosed are the results of the sample(s) submitted to our laboratory on April 11, 2014. For your reference, these analyses have been assigned our service request number **R1402601**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**



Janice Jaeger  
Client Services Manager

Page 1 of 67

CC: Pernilla Haley

## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Water

**Service Request No.:** R1402601  
**Project Number:** 150148-05000000  
**Date Received:** 04/11/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Water samples were collected on 04/09-10/14 and received at ALS in good condition at cooler temperatures of 5.5 – 5.7 °C as noted on the cooler receipt and preservation check form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #.

### Volatile Organics

Twenty nine water samples were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples RW-22 (104), OB 12 DO (47), MW-16 (35), AP12-S (26) and AP12-DO (48) were re-analyzed at larger dilutions to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D".

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Surrogate Standard recoveries were within QC limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits except Bromomethane was outside limits high on the 04/21/14 LCS. All RPD's were acceptable except various RPD's were outside limits on 04/19/14 RPD (Run #388873). All outlying QC has been flagged with an "\*\*". No data was affected.

All samples were analyzed within the required holding time of 14 days.

### Inorganic Analyses

Four water samples were analyzed for Chloride by SM3400-CI-E and Soluble Iron and Manganese by method 6010C. Soluble Metals were filtered in the field.

The initial and continuing calibration criteria were met for all analytes.

All Blank Spike (LCS) recoveries were within QC limits.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150148

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1402601-001-029

Matrices: Groundwater/Surface Water  Soil/Sediment Drinking Water Air Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X	Yes	No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X	Yes	No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X	Yes	No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X	Yes	No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes	No	No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X	Yes	No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X	Yes	No <sup>1</sup>
----------	---	---	-----	-----------------

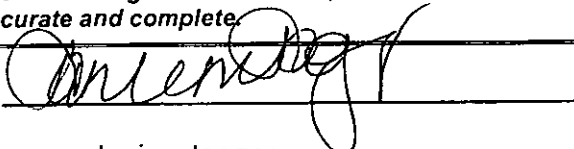
**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X	Yes	No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes	X	No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature: \_\_\_\_\_



Position: Client Services  
Manager

Printed Name: Janice Jaeger

Date: 04/28/14

**00003**

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402601

<u>Lab ID</u>	<u>Client ID</u>
R1402601-001	MW-14-A (58)
R1402601-002	OB14-DO (55)
R1402601-003	RW-22 (104)
R1402601-004	OB11 BR (86)
R1402601-005	OB11 DO (60)
R1402601-006	OB12 S (27)
R1402601-007	MW-13 (41)
R1402601-008	OB12 DO (47)
R1402601-009	TB-2
R1402601-010	OB9-DO (92)
R1402601-011	OB9-BR (117)
R1402601-012	STR-3
R1402601-013	UNNAMED STREAM
R1402601-014	BW-5 (9)
R1402601-015	BW-6 (13)
R1402601-016	BW-8 (13)
R1402601-017	BW-9 (12)
R1402601-018	MW-9A (13)
R1402601-019	B-3 (12)
R1402601-020	AP13-S (16)
R1402601-021	MW-8 (17)
R1402601-022	MW-5 (21)
R1402601-023	MW-4 (25)
R1402601-024	MW-16 (35)
R1402601-025	OB10-S (29)
R1402601-026	OB10-BR (72)
R1402601-027	AP12-S (26)
R1402601-028	AP12-DO (48)
R1402601-029	AP12-BR (73)

00004

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.



## INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

### Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	3010A
200.8	ILM05.3
6010C	3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

### Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3010A
6010 SPLP (1312) extract	3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

RIGHT SOLUTIONS | RIGHT PARTNER

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

  
\_\_\_\_\_  
*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: **01 JUL 2013**

**M-NY032          ALS ENVIRONMENTAL ROCHESTER  
                      ROCHESTER NY**

<b>NON POTABLE WATER (CHEMISTRY)</b>	<b>Effective Date</b>	<b>01 JUL 2013</b>	<b>Expiration Date</b>	<b>30 JUN 2014</b>
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CaCO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	





**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: 01 JUL 2013

M-NY032           ALS ENVIRONMENTAL ROCHESTER  
                          ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)           Effective Date           01 JUL 2013           Expiration Date           30 JUN 2014

<u>Analytes</u>	<u>Methods</u>
CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 385.1
PHOSPHORUS, TOTAL	EPA 385.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/ 9/14 1100  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 20:28

Sample Name: MW-14-A (58)  
 Lab Code: R1402601-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041914\F7711.D\

Analysis Lot: 388959  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	3.1	2.0	
79-01-6	Trichloroethene (TCE)	57	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	190	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	70-130	4/19/14 20:28	
Dibromofluoromethane	99	70-130	4/19/14 20:28	
Toluene-d8	97	70-130	4/19/14 20:28	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/9/14 1130  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 20:06

Sample Name: OB14-DO (55)  
 Lab Code: R1402601-002

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7664.D\

Analysis Lot: 388871  
 Instrument Name: R-MS-10  
 Dilution Factor: 10

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	20 U	20	
79-34-5	1,1,2,2-Tetrachloroethane	20 U	20	
79-00-5	1,1,2-Trichloroethane	20 U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20 U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	20 U	20	
107-06-2	1,2-Dichloroethane	20 U	20	
78-87-5	1,2-Dichloropropane	20 U	20	
67-64-1	Acetone	100 U	100	
75-27-4	Bromodichloromethane	20 U	20	
75-25-2	Bromoform	20 U	20	
74-83-9	Bromomethane	20 U	20	
56-23-5	Carbon Tetrachloride	20 U	20	
108-90-7	Chlorobenzene	20 U	20	
75-00-3	Chloroethane	20 U	20	
67-66-3	Chloroform	20 U	20	
74-87-3	Chloromethane	20 U	20	
124-48-1	Dibromochloromethane	20 U	20	
75-09-2	Methylene Chloride	20 U	20	
127-18-4	Tetrachloroethene (PCE)	110	20	
79-01-6	Trichloroethene (TCE)	1300	20	
75-69-4	Trichlorofluoromethane (CFC 11)	20 U	20	
75-01-4	Vinyl Chloride	20 U	20	
156-59-2	cis-1,2-Dichloroethene	170	20	
10061-01-5	cis-1,3-Dichloropropene	20 U	20	
156-60-5	trans-1,2-Dichloroethene	20 U	20	
10061-02-6	trans-1,3-Dichloropropene	20 U	20	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	70-130	4/18/14 20:06	
Dibromofluoromethane	98	70-130	4/18/14 20:06	
Toluene-d8	99	70-130	4/18/14 20:06	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/ 9/14 1200  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 20:37

Sample Name: RW-22 (104)  
 Lab Code: R1402601-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\msvoa10\data\041814\F7665.D\

Analysis Lot: 388871  
 Instrument Name: R-MS-10  
 Dilution Factor: 2

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	4.0	U	4.0	
79-34-5	1,1,2,2-Tetrachloroethane	4.0	U	4.0	
79-00-5	1,1,2-Trichloroethane	4.0	U	4.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4.0	U	4.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	4.0	U	4.0	
107-06-2	1,2-Dichloroethane	4.0	U	4.0	
78-87-5	1,2-Dichloropropane	4.0	U	4.0	
67-64-1	Acetone	20	U	20	
75-27-4	Bromodichloromethane	4.0	U	4.0	
75-25-2	Bromoform	4.0	U	4.0	
74-83-9	Bromomethane	4.0	U	4.0	
56-23-5	Carbon Tetrachloride	4.0	U	4.0	
108-90-7	Chlorobenzene	4.0	U	4.0	
75-00-3	Chloroethane	4.0	U	4.0	
67-66-3	Chloroform	4.0	U	4.0	
74-87-3	Chloromethane	4.0	U	4.0	
124-48-1	Dibromochloromethane	4.0	U	4.0	
75-09-2	Methylene Chloride	4.0	U	4.0	
127-18-4	Tetrachloroethene (PCE)	4.0	U	4.0	
79-01-6	Trichloroethene (TCE)	35		4.0	
75-69-4	Trichlorofluoromethane (CFC 11)	4.0	U	4.0	
75-01-4	Vinyl Chloride	11		4.0	
156-59-2	cis-1,2-Dichloroethene	540	E	4.0	
10061-01-5	cis-1,3-Dichloropropene	4.0	U	4.0	
156-60-5	trans-1,2-Dichloroethene	4.0	U	4.0	
10061-02-6	trans-1,3-Dichloropropene	4.0	U	4.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/18/14 20:37	
Dibromofluoromethane	98	70-130	4/18/14 20:37	
Toluene-d8	97	70-130	4/18/14 20:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/9/14 1200  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 20:58

Sample Name: RW-22 (104)  
 Lab Code: R1402601-003  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\041914\F7712.D\

Analysis Lot: 388959  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10	U	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	50	U	50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	10	U	10	
79-01-6	Trichloroethene (TCE)	34	D	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	11	D	10	
156-59-2	cis-1,2-Dichloroethene	520	D	10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	70-130	4/19/14 20:58	
Dibromofluoromethane	97	70-130	4/19/14 20:58	
Toluene-d8	97	70-130	4/19/14 20:58	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/9/14 1230  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 21:07

Sample Name: OB11 BR (86)  
 Lab Code: R1402601-004

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7666.D\

Analysis Lot: 388871  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	5.5		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	35		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	6.7		2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/18/14 21:07	
Dibromofluoromethane	96	70-130	4/18/14 21:07	
Toluene-d8	98	70-130	4/18/14 21:07	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/ 9/14 1300  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 21:38

Sample Name: OB11 DO (60)  
 Lab Code: R1402601-005

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7667.D\

Analysis Lot: 388871  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	91		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	20		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	70-130	4/18/14 21:38	
Dibromofluoromethane	96	70-130	4/18/14 21:38	
Toluene-d8	98	70-130	4/18/14 21:38	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/9/14 1330  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 21:29

Sample Name: OB12 S (27)  
 Lab Code: R1402601-006

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041914\F7713.D\

Analysis Lot: 388959  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.2	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.9	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	160	2.0	
79-01-6	Trichloroethene (TCE)	96	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0 U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed Q
4-Bromofluorobenzene	94	70-130	4/19/14 21:29
Dibromofluoromethane	98	70-130	4/19/14 21:29
Toluene-d8	98	70-130	4/19/14 21:29



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: MW-13 (41)  
Lab Code: R1402601-007

Service Request: R1402601  
Date Collected: 4/9/14 1430  
Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	506	mg/L	10	10	NA	4/22/14 13:06	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: MW-13 (41)  
 Lab Code: R1402601-007

Service Request: R1402601  
 Date Collected: 4/9/14 1430  
 Date Received: 4/11/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 00:50	
Manganese, Dissolved	6010C	23000		µg/L	100	10	4/15/14	4/17/14 15:02	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/9/14 1430  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 22:39

Sample Name: MW-13 (41)  
 Lab Code: R1402601-007

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7669.D\

Analysis Lot: 388871  
 Instrument Name: R-MS-10  
 Dilution Factor: 2.5

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	190	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U	5.0	
79-00-5	1,1,2-Trichloroethane	9.1	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.1	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0 U	5.0	
107-06-2	1,2-Dichloroethane	5.0 U	5.0	
78-87-5	1,2-Dichloropropane	5.0 U	5.0	
67-64-1	Acetone	25 U	25	
75-27-4	Bromodichloromethane	5.0 U	5.0	
75-25-2	Bromoform	5.0 U	5.0	
74-83-9	Bromomethane	5.0 U	5.0	
56-23-5	Carbon Tetrachloride	230	5.0	
108-90-7	Chlorobenzene	5.2	5.0	
75-00-3	Chloroethane	5.0 U	5.0	
67-66-3	Chloroform	360	5.0	
74-87-3	Chloromethane	5.0 U	5.0	
124-48-1	Dibromochloromethane	5.0 U	5.0	
75-09-2	Methylene Chloride	5.0 U	5.0	
127-18-4	Tetrachloroethene (PCE)	14	5.0	
79-01-6	Trichloroethene (TCE)	5.0 U	5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0 U	5.0	
75-01-4	Vinyl Chloride	5.0 U	5.0	
156-59-2	cis-1,2-Dichloroethene	5.0 U	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0 U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0 U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0 U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/18/14 22:39	
Dibromofluoromethane	94	70-130	4/18/14 22:39	
Toluene-d8	98	70-130	4/18/14 22:39	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: OB12 DO (47)  
Lab Code: R1402601-008

Service Request: R1402601  
Date Collected: 4/9/14 1400  
Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	39.4		mg/L	1.0	1	NA	4/22/14 13:07	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: OB12 DO (47)  
 Lab Code: R1402601-008

Service Request: R1402601  
 Date Collected: 4/9/14 1400  
 Date Received: 4/11/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 00:57	
Manganese, Dissolved	6010C	176		µg/L	10	1	4/15/14	4/17/14 15:15	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/9/14 1400  
 Date Received: 4/11/14  
 Date Analyzed: 4/18/14 23:09

Sample Name: OB12 DO (47)  
 Lab Code: R1402601-008

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7670.D\

Analysis Lot: 388871  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.9		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	59		2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	1700	E	2.0	
79-01-6	Trichloroethene (TCE)	5300	E	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	5.3		2.0	
156-59-2	cis-1,2-Dichloroethene	3400	E	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	110		2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	70-130	4/18/14 23:09	
Dibromofluoromethane	99	70-130	4/18/14 23:09	
Toluene-d8	98	70-130	4/18/14 23:09	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/ 9/14 1400  
 Date Received: 4/11/14  
 Date Analyzed: 4/21/14 16:08

Sample Name: OB12 DO (47)  
 Lab Code: R1402601-008  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7739.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 250

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	500	U	500	
79-34-5	1,1,2,2-Tetrachloroethane	500	U	500	
79-00-5	1,1,2-Trichloroethane	500	U	500	
75-34-3	1,1-Dichloroethane (1,1-DCA)	500	U	500	
75-35-4	1,1-Dichloroethene (1,1-DCE)	500	U	500	
107-06-2	1,2-Dichloroethane	500	U	500	
78-87-5	1,2-Dichloropropane	500	U	500	
67-64-1	Acetone	2500	U	2500	
75-27-4	Bromodichloromethane	500	U	500	
75-25-2	Bromoform	500	U	500	
74-83-9	Bromomethane	500	U	500	
56-23-5	Carbon Tetrachloride	500	U	500	
108-90-7	Chlorobenzene	500	U	500	
75-00-3	Chloroethane	500	U	500	
67-66-3	Chloroform	500	U	500	
74-87-3	Chloromethane	500	U	500	
124-48-1	Dibromochloromethane	500	U	500	
75-09-2	Methylene Chloride	500	U	500	
127-18-4	Tetrachloroethene (PCE)	2000	D	500	
79-01-6	Trichloroethene (TCE)	28000	D	500	
75-69-4	Trichlorofluoromethane (CFC 11)	500	U	500	
75-01-4	Vinyl Chloride	500	U	500	
156-59-2	cis-1,2-Dichloroethene	16000	D	500	
10061-01-5	cis-1,3-Dichloropropene	500	U	500	
156-60-5	trans-1,2-Dichloroethene	500	U	500	
10061-02-6	trans-1,3-Dichloropropene	500	U	500	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/21/14 16:08	
Dibromofluoromethane	98	70-130	4/21/14 16:08	
Toluene-d8	98	70-130	4/21/14 16:08	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 0730  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 03:13

Sample Name: TB-2  
 Lab Code: R1402601-009

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7678.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/19/14 03:13	
Dibromofluoromethane	99	70-130	4/19/14 03:13	
Toluene-d8	98	70-130	4/19/14 03:13	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 0800  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 03:44

Sample Name: OB9-DO (92)  
 Lab Code: R1402601-010

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7679.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 20

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	40	U	40	
79-34-5	1,1,2,2-Tetrachloroethane	40	U	40	
79-00-5	1,1,2-Trichloroethane	40	U	40	
75-34-3	1,1-Dichloroethane (1,1-DCA)	40	U	40	
75-35-4	1,1-Dichloroethene (1,1-DCE)	40	U	40	
107-06-2	1,2-Dichloroethane	40	U	40	
78-87-5	1,2-Dichloropropane	40	U	40	
67-64-1	Acetone	200	U	200	
75-27-4	Bromodichloromethane	40	U	40	
75-25-2	Bromoform	40	U	40	
74-83-9	Bromomethane	40	U	40	
56-23-5	Carbon Tetrachloride	40	U	40	
108-90-7	Chlorobenzene	40	U	40	
75-00-3	Chloroethane	40	U	40	
67-66-3	Chloroform	40	U	40	
74-87-3	Chloromethane	40	U	40	
124-48-1	Dibromochloromethane	40	U	40	
75-09-2	Methylene Chloride	40	U	40	
127-18-4	Tetrachloroethene (PCE)	40	U	40	
79-01-6	Trichloroethene (TCE)	40	U	40	
75-69-4	Trichlorofluoromethane (CFC 11)	40	U	40	
75-01-4	Vinyl Chloride	1900		40	
156-59-2	cis-1,2-Dichloroethene	2300		40	
10061-01-5	cis-1,3-Dichloropropene	40	U	40	
156-60-5	trans-1,2-Dichloroethene	40	U	40	
10061-02-6	trans-1,3-Dichloropropene	40	U	40	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/19/14 03:44	
Dibromofluoromethane	96	70-130	4/19/14 03:44	
Toluene-d8	98	70-130	4/19/14 03:44	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 0830  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 04:14

Sample Name: OB9-BR (117)  
 Lab Code: R1402601-011

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7680.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 25

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	50 U	50	
79-34-5	1,1,2,2-Tetrachloroethane	50 U	50	
79-00-5	1,1,2-Trichloroethane	50 U	50	
75-34-3	1,1-Dichloroethane (1,1-DCA)	50 U	50	
75-35-4	1,1-Dichloroethene (1,1-DCE)	50 U	50	
107-06-2	1,2-Dichloroethane	50 U	50	
78-87-5	1,2-Dichloropropane	50 U	50	
67-64-1	Acetone	250 U	250	
75-27-4	Bromodichloromethane	50 U	50	
75-25-2	Bromoform	50 U	50	
74-83-9	Bromomethane	50 U	50	
56-23-5	Carbon Tetrachloride	50 U	50	
108-90-7	Chlorobenzene	50 U	50	
75-00-3	Chloroethane	50 U	50	
67-66-3	Chloroform	50 U	50	
74-87-3	Chloromethane	50 U	50	
124-48-1	Dibromochloromethane	50 U	50	
75-09-2	Methylene Chloride	50 U	50	
127-18-4	Tetrachloroethene (PCE)	110	50	
79-01-6	Trichloroethene (TCE)	110	50	
75-69-4	Trichlorofluoromethane (CFC 11)	50 U	50	
75-01-4	Vinyl Chloride	740	50	
156-59-2	cis-1,2-Dichloroethene	4600	50	
10061-01-5	cis-1,3-Dichloropropene	50 U	50	
156-60-5	trans-1,2-Dichloroethene	50 U	50	
10061-02-6	trans-1,3-Dichloropropene	50 U	50	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	70-130	4/19/14 04:14	
Dibromofluoromethane	97	70-130	4/19/14 04:14	
Toluene-d8	99	70-130	4/19/14 04:14	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 0900  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 04:45

Sample Name: STR-3  
 Lab Code: R1402601-012

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7681.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.3	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed Q
4-Bromofluorobenzene	93	70-130	4/19/14 04:45
Dibromofluoromethane	98	70-130	4/19/14 04:45
Toluene-d8	98	70-130	4/19/14 04:45

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 0930  
 Date Received: 4/11/14  
 Date Analyzed: 4/21/14 15:07

Sample Name: UNNAMED STREAM  
 Lab Code: R1402601-013

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7737.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.6	2.0	
79-01-6	Trichloroethene (TCE)	3.0	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	12	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 15:07	
Dibromofluoromethane	98	70-130	4/21/14 15:07	
Toluene-d8	98	70-130	4/21/14 15:07	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1000  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 05:46

Sample Name: BW-5 (9)  
 Lab Code: R1402601-014

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7683.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/19/14 05:46	
Dibromofluoromethane	98	70-130	4/19/14 05:46	
Toluene-d8	99	70-130	4/19/14 05:46	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1030  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 06:16

Sample Name: BW-6 (13)  
 Lab Code: R1402601-015

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7684.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/19/14 06:16	
Dibromofluoromethane	100	70-130	4/19/14 06:16	
Toluene-d8	98	70-130	4/19/14 06:16	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1100  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 06:47

Sample Name: BW-8 (13)  
 Lab Code: R1402601-016

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7685.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/19/14 06:47	
Dibromofluoromethane	99	70-130	4/19/14 06:47	
Toluene-d8	99	70-130	4/19/14 06:47	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1130  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 07:17

Sample Name: BW-9 (12)  
 Lab Code: R1402601-017

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7686.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	70-130	4/19/14 07:17	
Dibromofluoromethane	97	70-130	4/19/14 07:17	
Toluene-d8	97	70-130	4/19/14 07:17	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1200  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 07:48

Sample Name: MW-9A (13)  
 Lab Code: R1402601-018

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7687.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	32		2.0	
156-59-2	cis-1,2-Dichloroethene	28		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/19/14 07:48	
Dibromofluoromethane	99	70-130	4/19/14 07:48	
Toluene-d8	98	70-130	4/19/14 07:48	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1300  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 08:18

Sample Name: B-3 (12)  
 Lab Code: R1402601-019

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7688.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	34		2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.1		2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	16		2.0	
79-01-6	Trichloroethene (TCE)	6.1		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/19/14 08:18	
Dibromofluoromethane	99	70-130	4/19/14 08:18	
Toluene-d8	98	70-130	4/19/14 08:18	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1330  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 08:49

Sample Name: AP13-S (16)  
 Lab Code: R1402601-020

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7689.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	8.7	2.0	
79-01-6	Trichloroethene (TCE)	5.9	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.2	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/19/14 08:49	
Dibromofluoromethane	97	70-130	4/19/14 08:49	
Toluene-d8	98	70-130	4/19/14 08:49	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1400  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 23:00

Sample Name: MW-8 (17)  
 Lab Code: R1402601-021

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041914\F7716.D\

Analysis Lot: 388959  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	70-130	4/19/14 23:00	
Dibromofluoromethane	99	70-130	4/19/14 23:00	
Toluene-d8	98	70-130	4/19/14 23:00	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1430  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 09:50

Sample Name: MW-5 (21)  
 Lab Code: R1402601-022

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\041814\F7691.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	16		2.0	
79-01-6	Trichloroethene (TCE)	5.7		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/19/14 09:50	
Dibromofluoromethane	98	70-130	4/19/14 09:50	
Toluene-d8	98	70-130	4/19/14 09:50	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1500  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 10:20

Sample Name: MW-4 (25)  
 Lab Code: R1402601-023

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7692.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/19/14 10:20	
Dibromofluoromethane	98	70-130	4/19/14 10:20	
Toluene-d8	97	70-130	4/19/14 10:20	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1600  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 10:51

Sample Name: MW-16 (35)  
 Lab Code: R1402601-024

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7693.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10	U	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	50	U	50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	58		10	
79-01-6	Trichloroethene (TCE)	1800	E	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	10	U	10	
156-59-2	cis-1,2-Dichloroethene	360		10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/19/14 10:51	
Dibromofluoromethane	100	70-130	4/19/14 10:51	
Toluene-d8	98	70-130	4/19/14 10:51	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1600  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 23:30

Sample Name: MW-16 (35)  
 Lab Code: R1402601-024  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041914\F7717.D\

Analysis Lot: 388959  
 Instrument Name: R-MS-10  
 Dilution Factor: 20

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	40 U	40	
79-34-5	1,1,2,2-Tetrachloroethane	40 U	40	
79-00-5	1,1,2-Trichloroethane	40 U	40	
75-34-3	1,1-Dichloroethane (1,1-DCA)	40 U	40	
75-35-4	1,1-Dichloroethene (1,1-DCE)	40 U	40	
107-06-2	1,2-Dichloroethane	40 U	40	
78-87-5	1,2-Dichloropropane	40 U	40	
67-64-1	Acetone	200 U	200	
75-27-4	Bromodichloromethane	40 U	40	
75-25-2	Bromoform	40 U	40	
74-83-9	Bromomethane	40 U	40	
56-23-5	Carbon Tetrachloride	40 U	40	
108-90-7	Chlorobenzene	40 U	40	
75-00-3	Chloroethane	40 U	40	
67-66-3	Chloroform	40 U	40	
74-87-3	Chloromethane	40 U	40	
124-48-1	Dibromochloromethane	40 U	40	
75-09-2	Methylene Chloride	40 U	40	
127-18-4	Tetrachloroethene (PCE)	62 D	40	
79-01-6	Trichloroethene (TCE)	1700 D	40	
75-69-4	Trichlorofluoromethane (CFC 11)	40 U	40	
75-01-4	Vinyl Chloride	40 U	40	
156-59-2	cis-1,2-Dichloroethene	340 D	40	
10061-01-5	cis-1,3-Dichloropropene	40 U	40	
156-60-5	trans-1,2-Dichloroethene	40 U	40	
10061-02-6	trans-1,3-Dichloropropene	40 U	40	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/19/14 23:30	
Dibromofluoromethane	99	70-130	4/19/14 23:30	
Toluene-d8	99	70-130	4/19/14 23:30	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1530  
 Date Received: 4/11/14  
 Date Analyzed: 4/20/14 00:01

Sample Name: OB10-S (29)  
 Lab Code: R1402601-025

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041914\F7718.D\

Analysis Lot: 388959  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.9		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/20/14 00:01	
Dibromofluoromethane	99	70-130	4/20/14 00:01	
Toluene-d8	98	70-130	4/20/14 00:01	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1630  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 18:26

Sample Name: OB10-BR (72)  
 Lab Code: R1402601-026

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\041914\F7707.D\

Analysis Lot: 388959  
 Instrument Name: R-MS-10  
 Dilution Factor: 50

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	100	U	100	
79-34-5	1,1,2,2-Tetrachloroethane	100	U	100	
79-00-5	1,1,2-Trichloroethane	100	U	100	
75-34-3	1,1-Dichloroethane (1,1-DCA)	100	U	100	
75-35-4	1,1-Dichloroethene (1,1-DCE)	100	U	100	
107-06-2	1,2-Dichloroethane	100	U	100	
78-87-5	1,2-Dichloropropane	100	U	100	
67-64-1	Acetone	500	U	500	
75-27-4	Bromodichloromethane	100	U	100	
75-25-2	Bromoform	100	U	100	
74-83-9	Bromomethane	100	U	100	
56-23-5	Carbon Tetrachloride	100	U	100	
108-90-7	Chlorobenzene	100	U	100	
75-00-3	Chloroethane	100	U	100	
67-66-3	Chloroform	100	U	100	
74-87-3	Chloromethane	100	U	100	
124-48-1	Dibromochloromethane	100	U	100	
75-09-2	Methylene Chloride	100	U	100	
127-18-4	Tetrachloroethene (PCE)	890		100	
79-01-6	Trichloroethene (TCE)	4900		100	
75-69-4	Trichlorofluoromethane (CFC 11)	100	U	100	
75-01-4	Vinyl Chloride	100	U	100	
156-59-2	cis-1,2-Dichloroethene	760		100	
10061-01-5	cis-1,3-Dichloropropene	100	U	100	
156-60-5	trans-1,2-Dichloroethene	100	U	100	
10061-02-6	trans-1,3-Dichloropropene	100	U	100	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/19/14 18:26	
Dibromofluoromethane	99	70-130	4/19/14 18:26	
Toluene-d8	98	70-130	4/19/14 18:26	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1700  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 18:56

Sample Name: AP12-S (26)  
 Lab Code: R1402601-027

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoal0\data\041914\F7708.D\

Analysis Lot: 388959  
 Instrument Name: R-MS-10  
 Dilution Factor: 2

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	4.3		4.0	
79-34-5	1,1,2,2-Tetrachloroethane	4.0	U	4.0	
79-00-5	1,1,2-Trichloroethane	4.0	U	4.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4.0	U	4.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	4.0	U	4.0	
107-06-2	1,2-Dichloroethane	4.0	U	4.0	
78-87-5	1,2-Dichloropropane	4.0	U	4.0	
67-64-1	Acetone	20	U	20	
75-27-4	Bromodichloromethane	4.0	U	4.0	
75-25-2	Bromoform	4.0	U	4.0	
74-83-9	Bromomethane	4.0	U	4.0	
56-23-5	Carbon Tetrachloride	4.0	U	4.0	
108-90-7	Chlorobenzene	4.0	U	4.0	
75-00-3	Chloroethane	4.0	U	4.0	
67-66-3	Chloroform	4.0	U	4.0	
74-87-3	Chloromethane	4.0	U	4.0	
124-48-1	Dibromochloromethane	4.0	U	4.0	
75-09-2	Methylene Chloride	4.0	U	4.0	
127-18-4	Tetrachloroethene (PCE)	1900	E	4.0	
79-01-6	Trichloroethene (TCE)	1800	E	4.0	
75-69-4	Trichlorofluoromethane (CFC 11)	4.0	U	4.0	
75-01-4	Vinyl Chloride	4.0	U	4.0	
156-59-2	cis-1,2-Dichloroethene	380		4.0	
10061-01-5	cis-1,3-Dichloropropene	4.0	U	4.0	
156-60-5	trans-1,2-Dichloroethene	6.7		4.0	
10061-02-6	trans-1,3-Dichloropropene	4.0	U	4.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/19/14 18:56	
Dibromofluoromethane	100	70-130	4/19/14 18:56	
Toluene-d8	99	70-130	4/19/14 18:56	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1700  
 Date Received: 4/11/14  
 Date Analyzed: 4/21/14 16:38

Sample Name: AP12-S (26)  
 Lab Code: R1402601-027  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7740.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 20

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	40 U	40	
79-34-5	1,1,2,2-Tetrachloroethane	40 U	40	
79-00-5	1,1,2-Trichloroethane	40 U	40	
75-34-3	1,1-Dichloroethane (1,1-DCA)	40 U	40	
75-35-4	1,1-Dichloroethene (1,1-DCE)	40 U	40	
107-06-2	1,2-Dichloroethane	40 U	40	
78-87-5	1,2-Dichloropropane	40 U	40	
67-64-1	Acetone	200 U	200	
75-27-4	Bromodichloromethane	40 U	40	
75-25-2	Bromoform	40 U	40	
74-83-9	Bromomethane	40 U	40	
56-23-5	Carbon Tetrachloride	40 U	40	
108-90-7	Chlorobenzene	40 U	40	
75-00-3	Chloroethane	40 U	40	
67-66-3	Chloroform	40 U	40	
74-87-3	Chloromethane	40 U	40	
124-48-1	Dibromochloromethane	40 U	40	
75-09-2	Methylene Chloride	40 U	40	
127-18-4	Tetrachloroethene (PCE)	1900 D	40	
79-01-6	Trichloroethene (TCE)	1800 D	40	
75-69-4	Trichlorofluoromethane (CFC 11)	40 U	40	
75-01-4	Vinyl Chloride	40 U	40	
156-59-2	cis-1,2-Dichloroethene	350 D	40	
10061-01-5	cis-1,3-Dichloropropene	40 U	40	
156-60-5	trans-1,2-Dichloroethene	40 U	40	
10061-02-6	trans-1,3-Dichloropropene	40 U	40	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 16:38	
Dibromofluoromethane	99	70-130	4/21/14 16:38	
Toluene-d8	99	70-130	4/21/14 16:38	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP12-DO (48)  
 Lab Code: R1402601-028

Service Request: R1402601  
 Date Collected: 4/10/14 1730  
 Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	124	mg/L	2.0	2	NA	4/22/14 13:09	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP12-DO (48)  
 Lab Code: R1402601-028

Service Request: R1402601  
 Date Collected: 4/10/14 1730  
 Date Received: 4/11/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 01:03	
Manganese, Dissolved	6010C	322		µg/L	10	1	4/15/14	4/17/14 15:21	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1730  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 19:27

Sample Name: AP12-DO (48)  
 Lab Code: R1402601-028

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041914\F7709.D\

Analysis Lot: 388959  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	3.2		2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	7.4		2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	110		2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	1700	E	2.0	
79-01-6	Trichloroethene (TCE)	12		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	70-130	4/19/14 19:27	
Dibromofluoromethane	98	70-130	4/19/14 19:27	
Toluene-d8	98	70-130	4/19/14 19:27	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1730  
 Date Received: 4/11/14  
 Date Analyzed: 4/21/14 17:08

Sample Name: AP12-DO (48)  
 Lab Code: R1402601-028  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7741.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 20

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	40	U	40	
79-34-5	1,1,2,2-Tetrachloroethane	40	U	40	
79-00-5	1,1,2-Trichloroethane	40	U	40	
75-34-3	1,1-Dichloroethane (1,1-DCA)	40	U	40	
75-35-4	1,1-Dichloroethene (1,1-DCE)	40	U	40	
107-06-2	1,2-Dichloroethane	40	U	40	
78-87-5	1,2-Dichloropropane	40	U	40	
67-64-1	Acetone	200	U	200	
75-27-4	Bromodichloromethane	40	U	40	
75-25-2	Bromoform	40	U	40	
74-83-9	Bromomethane	40	U	40	
56-23-5	Carbon Tetrachloride	40	U	40	
108-90-7	Chlorobenzene	40	U	40	
75-00-3	Chloroethane	40	U	40	
67-66-3	Chloroform	100	D	40	
74-87-3	Chloromethane	40	U	40	
124-48-1	Dibromochloromethane	40	U	40	
75-09-2	Methylene Chloride	40	U	40	
127-18-4	Tetrachloroethene (PCE)	1900	D	40	
79-01-6	Trichloroethene (TCE)	40	U	40	
75-69-4	Trichlorofluoromethane (CFC 11)	40	U	40	
75-01-4	Vinyl Chloride	40	U	40	
156-59-2	cis-1,2-Dichloroethene	40	U	40	
10061-01-5	cis-1,3-Dichloropropene	40	U	40	
156-60-5	trans-1,2-Dichloroethene	40	U	40	
10061-02-6	trans-1,3-Dichloropropene	40	U	40	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 17:08	
Dibromofluoromethane	99	70-130	4/21/14 17:08	
Toluene-d8	99	70-130	4/21/14 17:08	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP12-BR (73)  
Lab Code: R1402601-029

Service Request: R1402601  
Date Collected: 4/10/14 1800  
Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	75.5	mg/L	1.0	1	NA	4/22/14 13:11	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP12-BR (73)  
 Lab Code: R1402601-029

Service Request: R1402601  
 Date Collected: 4/10/14 1800  
 Date Received: 4/11/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	900		µg/L	100	1	4/15/14	4/17/14 01:09	
Manganese, Dissolved	6010C	564		µg/L	10	1	4/15/14	4/17/14 15:40	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: 4/10/14 1800  
 Date Received: 4/11/14  
 Date Analyzed: 4/21/14 15:37

Sample Name: AP12-BR (73)  
 Lab Code: R1402601-029

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7738.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	16		2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/21/14 15:37	
Dibromofluoromethane	99	70-130	4/21/14 15:37	
Toluene-d8	99	70-130	4/21/14 15:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: Method Blank  
 Lab Code: R1402601-MB

Service Request: R1402601  
 Date Collected: NA  
 Date Received: NA

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	1.0 U	mg/L	1.0	1	NA	4/22/14 13:02	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: Method Blank  
 Lab Code: R1402601-MB

Service Request: R1402601  
 Date Collected: NA  
 Date Received: NA  
 Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/16/14 23:10	
Manganese, Dissolved	6010C	10	U	µg/L	10	1	4/15/14	4/17/14 14:25	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/18/14 16:03

Sample Name: Method Blank  
 Lab Code: RQ1403966-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041814\F7656.D\

Analysis Lot: 388871  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/18/14 16:03	
Dibromofluoromethane	96	70-130	4/18/14 16:03	
Toluene-d8	99	70-130	4/18/14 16:03	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/19/14 02:43

Sample Name: Method Blank  
 Lab Code: RQ1403974-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\041814\F7677.D\

Analysis Lot: 388873  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/19/14 02:43	
Dibromofluoromethane	99	70-130	4/19/14 02:43	
Toluene-d8	99	70-130	4/19/14 02:43	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/19/14 16:25

Sample Name: Method Blank  
 Lab Code: RQ1403991-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041914\F7703.D\

Analysis Lot: 388959  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/19/14 16:25	
Dibromofluoromethane	96	70-130	4/19/14 16:25	
Toluene-d8	98	70-130	4/19/14 16:25	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/21/14 14:37

Sample Name: Method Blank  
 Lab Code: RQ1404008-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7736.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 14:37	
Dibromofluoromethane	99	70-130	4/21/14 14:37	
Toluene-d8	100	70-130	4/21/14 14:37	

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 General Chemistry Parameters

Units: mg/L  
 Basis: NA

Analyte Name	Method	Lab Control Sample R1402601-LCS			% Rec Limits
		Result	Spike Amount	% Rec	
Chloride	SM 4500-Cl-E-1997(20)	23.8	25.0	95	86 - 110

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Analyzed: 4/16/14 -  
 4/17/14

Lab Control Sample Summary  
 Inorganic Parameters

Units: µg/L  
 Basis: NA

Analyte Name	Method	Lab Control Sample R1402601-LCS			% Rec Limits
		Result	Spike Amount	% Rec	
Iron, Dissolved	6010C	1040	1000	104	80 - 120
Manganese, Dissolved	6010C	489	500	98	80 - 120

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 388871

Analyte Name	Lab Control Sample RQ1403966-02			Duplicate Lab Control Sample RQ1403966-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	20.6	20.0	103	20.7	20.0	103	70 - 130	<1	20
1,1,2,2-Tetrachloroethane	22.3	20.0	112	23.0	20.0	115	70 - 130	3	20
1,1,2-Trichloroethane	22.6	20.0	113	21.8	20.0	109	70 - 130	3	20
1,1-Dichloroethane (1,1-DCA)	22.1	20.0	110	22.1	20.0	110	70 - 130	<1	20
1,1-Dichloroethene (1,1-DCE)	25.2	20.0	126	24.9	20.0	125	70 - 130	1	20
1,2-Dichloroethane	19.2	20.0	96	19.6	20.0	98	70 - 130	2	20
1,2-Dichloropropane	23.7	20.0	119	24.0	20.0	120	70 - 130	1	20
Acetone	18.4	20.0	92	21.9	20.0	109	40 - 160	17	20
Bromodichloromethane	21.5	20.0	107	21.3	20.0	106	70 - 130	<1	20
Bromoform	22.4	20.0	112	22.7	20.0	113	70 - 130	1	20
Bromomethane	27.7	20.0	139	29.1	20.0	145	40 - 160	5	20
Carbon Tetrachloride	20.6	20.0	103	21.2	20.0	106	70 - 130	3	20
Chlorobenzene	22.0	20.0	110	22.4	20.0	112	70 - 130	2	20
Chloroethane	20.8	20.0	104	20.9	20.0	105	70 - 130	<1	20
Chloroform	20.8	20.0	104	20.5	20.0	103	70 - 130	1	20
Chloromethane	23.3	20.0	116	23.4	20.0	117	40 - 160	<1	20
Dibromochloromethane	22.4	20.0	112	22.6	20.0	113	70 - 130	1	20
Methylene Chloride	22.0	20.0	110	22.3	20.0	112	70 - 130	2	20
Tetrachloroethene (PCE)	22.5	20.0	112	23.3	20.0	116	70 - 130	3	20
Trichloroethene (TCE)	21.5	20.0	107	22.3	20.0	112	70 - 130	4	20
Trichlorofluoromethane (CFC 11)	19.3	20.0	96	19.9	20.0	100	70 - 130	3	20
Vinyl Chloride	22.9	20.0	114	23.1	20.0	115	70 - 130	<1	20
cis-1,2-Dichloroethene	21.1	20.0	106	21.7	20.0	109	70 - 130	3	20
cis-1,3-Dichloropropene	22.8	20.0	114	22.5	20.0	112	70 - 130	2	20
trans-1,2-Dichloroethene	21.6	20.0	108	22.1	20.0	111	70 - 130	2	20
trans-1,3-Dichloropropene	22.6	20.0	113	22.7	20.0	113	70 - 130	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Analyzed: 4/19/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 388873

Analyte Name	Lab Control Sample RQ1403974-02			Duplicate Lab Control Sample RQ1403974-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	17.0	20.0	85	21.3	20.0	106	70 - 130	23 *	20
1,1,2,2-Tetrachloroethane	18.8	20.0	94	23.9	20.0	120	70 - 130	24 *	20
1,1,2-Trichloroethane	21.9	20.0	109	23.3	20.0	116	70 - 130	6	20
1,1-Dichloroethane (1,1-DCA)	19.0	20.0	95	23.1	20.0	115	70 - 130	19	20
1,1-Dichloroethene (1,1-DCE)	21.1	20.0	105	24.8	20.0	124	70 - 130	16	20
1,2-Dichloroethane	18.5	20.0	92	20.5	20.0	102	70 - 130	10	20
1,2-Dichloropropane	20.5	20.0	103	24.1	20.0	120	70 - 130	16	20
Acetone	21.2	20.0	106	16.6	20.0	83	40 - 160	25 *	20
Bromodichloromethane	19.9	20.0	100	22.2	20.0	111	70 - 130	11	20
Bromoform	22.4	20.0	112	22.4	20.0	112	70 - 130	<1	20
Bromomethane	23.8	20.0	119	18.7	20.0	93	40 - 160	24 *	20
Carbon Tetrachloride	17.4	20.0	87	22.1	20.0	110	70 - 130	24 *	20
Chlorobenzene	19.5	20.0	98	22.1	20.0	111	70 - 130	12	20
Chloroethane	17.6	20.0	88	21.7	20.0	108	70 - 130	21 *	20
Chloroform	18.0	20.0	90	21.4	20.0	107	70 - 130	17	20
Chloromethane	20.8	20.0	104	24.5	20.0	122	40 - 160	16	20
Dibromochloromethane	21.7	20.0	109	23.3	20.0	117	70 - 130	7	20
Methylene Chloride	20.3	20.0	101	23.1	20.0	115	70 - 130	13	20
Tetrachloroethene (PCE)	19.1	20.0	95	22.7	20.0	113	70 - 130	17	20
Trichloroethene (TCE)	22.8	20.0	114	22.9	20.0	115	70 - 130	<1	20
Trichlorofluoromethane (CFC 11)	15.8	20.0	79	20.5	20.0	103	70 - 130	26 *	20
Vinyl Chloride	18.9	20.0	95	23.7	20.0	118	70 - 130	22 *	20
cis-1,2-Dichloroethene	19.1	20.0	96	21.9	20.0	109	70 - 130	13	20
cis-1,3-Dichloropropene	19.8	20.0	99	23.0	20.0	115	70 - 130	15	20
trans-1,2-Dichloroethene	18.4	20.0	92	22.8	20.0	114	70 - 130	21 *	20
trans-1,3-Dichloropropene	20.7	20.0	104	22.8	20.0	114	70 - 130	9	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Analyzed: 4/19/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 388959

Analyte Name	Lab Control Sample RQ1403991-02			Duplicate Lab Control Sample RQ1403991-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	17.9	20.0	90	17.1	20.0	85	70 - 130	5	20
1,1,2,2-Tetrachloroethane	19.6	20.0	98	21.0	20.0	105	70 - 130	7	20
1,1,2-Trichloroethane	19.9	20.0	100	20.7	20.0	103	70 - 130	4	20
1,1-Dichloroethane (1,1-DCA)	19.9	20.0	100	19.1	20.0	96	70 - 130	4	20
1,1-Dichloroethene (1,1-DCE)	21.3	20.0	106	21.3	20.0	107	70 - 130	<1	20
1,2-Dichloroethane	18.0	20.0	90	18.1	20.0	90	70 - 130	<1	20
1,2-Dichloropropane	21.4	20.0	107	20.9	20.0	105	70 - 130	2	20
Acetone	20.8	20.0	104	22.4	20.0	112	40 - 160	7	20
Bromodichloromethane	19.3	20.0	96	18.9	20.0	94	70 - 130	2	20
Bromoform	18.9	20.0	94	19.5	20.0	98	70 - 130	3	20
Bromomethane	28.6	20.0	143	26.9	20.0	134	40 - 160	6	20
Carbon Tetrachloride	18.4	20.0	92	17.1	20.0	85	70 - 130	8	20
Chlorobenzene	19.6	20.0	98	18.9	20.0	94	70 - 130	4	20
Chloroethane	18.9	20.0	95	17.4	20.0	87	70 - 130	9	20
Chloroform	18.6	20.0	93	18.2	20.0	91	70 - 130	2	20
Chloromethane	20.9	20.0	104	20.2	20.0	101	40 - 160	4	20
Dibromochloromethane	19.5	20.0	98	20.3	20.0	101	70 - 130	4	20
Methylene Chloride	20.4	20.0	102	20.4	20.0	102	70 - 130	<1	20
Tetrachloroethene (PCE)	19.9	20.0	99	18.3	20.0	91	70 - 130	8	20
Trichloroethene (TCE)	19.4	20.0	97	18.6	20.0	93	70 - 130	4	20
Trichlorofluoromethane (CFC 11)	17.4	20.0	87	16.2	20.0	81	70 - 130	7	20
Vinyl Chloride	20.4	20.0	102	19.2	20.0	96	70 - 130	6	20
cis-1,2-Dichloroethene	19.5	20.0	98	18.7	20.0	94	70 - 130	4	20
cis-1,3-Dichloropropene	20.0	20.0	100	19.8	20.0	99	70 - 130	<1	20
trans-1,2-Dichloroethene	19.8	20.0	99	18.4	20.0	92	70 - 130	7	20
trans-1,3-Dichloropropene	19.4	20.0	97	20.1	20.0	100	70 - 130	3	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402601  
 Date Analyzed: 4/21/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389045

Analyte Name	Lab Control Sample RQ1404008-02			Duplicate Lab Control Sample RQ1404008-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	19.7	20.0	99	17.2	20.0	86	70 - 130	14	20
1,1,2,2-Tetrachloroethane	20.1	20.0	100	19.0	20.0	95	70 - 130	6	20
1,1,2-Trichloroethane	21.2	20.0	106	19.0	20.0	95	70 - 130	11	20
1,1-Dichloroethane (1,1-DCA)	21.3	20.0	106	18.9	20.0	95	70 - 130	12	20
1,1-Dichloroethene (1,1-DCE)	23.4	20.0	117	20.3	20.0	102	70 - 130	14	20
1,2-Dichloroethane	18.8	20.0	94	16.9	20.0	84	70 - 130	11	20
1,2-Dichloropropane	22.2	20.0	111	19.3	20.0	97	70 - 130	14	20
Acetone	21.6	20.0	108	22.0	20.0	110	40 - 160	2	20
Bromodichloromethane	20.9	20.0	105	18.6	20.0	93	70 - 130	12	20
Bromoform	19.9	20.0	100	18.5	20.0	93	70 - 130	7	20
Bromomethane	32.7	20.0	163 *	28.4	20.0	142	40 - 160	14	20
Carbon Tetrachloride	19.8	20.0	99	17.7	20.0	89	70 - 130	11	20
Chlorobenzene	21.0	20.0	105	18.6	20.0	93	70 - 130	12	20
Chloroethane	20.3	20.0	101	18.2	20.0	91	70 - 130	11	20
Chloroform	20.2	20.0	101	18.2	20.0	91	70 - 130	11	20
Chloromethane	22.9	20.0	114	20.2	20.0	101	40 - 160	12	20
Dibromochloromethane	21.2	20.0	106	18.7	20.0	94	70 - 130	12	20
Methylene Chloride	21.4	20.0	107	19.5	20.0	97	70 - 130	9	20
Tetrachloroethene (PCE)	20.7	20.0	103	18.7	20.0	93	70 - 130	10	20
Trichloroethene (TCE)	20.7	20.0	104	18.2	20.0	91	70 - 130	13	20
Trichlorofluoromethane (CFC 11)	19.2	20.0	96	16.8	20.0	84	70 - 130	13	20
Vinyl Chloride	21.7	20.0	108	19.6	20.0	98	70 - 130	10	20
cis-1,2-Dichloroethene	20.5	20.0	102	18.3	20.0	91	70 - 130	12	20
cis-1,3-Dichloropropene	21.1	20.0	105	18.9	20.0	94	70 - 130	11	20
trans-1,2-Dichloroethene	20.9	20.0	105	18.4	20.0	92	70 - 130	13	20
trans-1,3-Dichloropropene	20.7	20.0	103	18.1	20.0	91	70 - 130	13	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)													
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE													
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">                 GC/MS VOA's  <input type="checkbox"/> 8060 <input type="checkbox"/> 824 <input type="checkbox"/> CLP                  GC/MS S/VOA's  <input type="checkbox"/> 8270 <input type="checkbox"/> 825                  GC VOA's  <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602                  PESTICIDES  <input type="checkbox"/> 8081 <input type="checkbox"/> 608                  PCB's  <input type="checkbox"/> 8082 <input type="checkbox"/> 608                  METALS, TOTAL                  (List in comments below)                  METALS, DISSOLVED                  (List in comments below)             </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 2em; font-weight: bold;">                 Chloride             </div> </div>												
150 Royall Street																	
Canton, MA 02021																	
Phone # <b>617-589-6102</b> E-mail <b>Raymond.Cadorette@cbi.com</b> Sampler's Signature <i>[Signature]</i> Sampler's Printed Name <b>Paul Rodon</b>																	
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID	SAMPLING DATE      TIME		MATRIX	REMARKS/ ALTERNATE DESCRIPTION											
MW-14-A (58)			4-9-14 1100		GW												
OB14-DO (55)			1130														
RW-22 (104)			1200														
OB11 BR (86)			1230														
OB11 DO (60)			1300														
OB12 S (27)			1330														
① <del>OB12</del> MW-13 (41)			1430														
OB12 DO (47)			1400														
TB-2			4-10-14 0730														
OB9-DO (92)			4-10-14 0800														
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field filtered Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD & PDF of report to: Catherine.Joe@cbi.com.					TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) ___ 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day <input checked="" type="checkbox"/> Standard				REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data Edata <input checked="" type="checkbox"/> Yes ___ No				INVOICE INFORMATION PO #: 873489 BILL TO: CB&I  <b>R1402601 7 Y</b> CB&I Environmental & Infrastructure Varian Beverly				
See QAPP <input type="checkbox"/>																	
STATE WHERE SAMPLES WERE COLLECTED:																	
RELINQUISHED BY				RECEIVED BY				RELINQUISHED BY				RECEIVED BY					
<i>[Signature]</i>				<i>[Signature]</i>													
Signature				Signature				Signature				Signature					
Printed Name <b>CB&amp;I</b>				Printed Name <b>J. S. [Name]</b>													
Firm				Firm				Firm				Firm					
Date/Time <b>4-10-14 1830</b>				Date/Time <b>4-11-14 0845</b>													



Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)												
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE												
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">                 GC/MS VOA's  <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP                  GC/MS SVOA's  <input type="checkbox"/> 8270 <input type="checkbox"/> 825                  GC VOA's  <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602                  PESTICIDES  <input type="checkbox"/> 8081 <input type="checkbox"/> 608                  PCBs  <input type="checkbox"/> 8082 <input type="checkbox"/> 608                  METALS, TOTAL                  (List in comments below)                  METALS, DISSOLVED                  (List in comments below)             </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">                 Chloride             </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">                 20             </div> </div>											
150 Royall Street																
Canton, MA 02021																
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@cbi.com</b>														
Sampler's Signature 		Sampler's Printed Name <b>Paul Hedoux</b>		Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____												
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME		MATRIX	REMARKS/ ALTERNATE DESCRIPTION											
DB9-BR (117)		410.14	0830	GW	3	3										
STR-3			0900		3	3										
unnamed stream			0930		3	3										
BW-5 (9)			1000		3	3										
BW-6 (13)			1030		3	3										
BW-8 (13)			1100		3	3										
BW-9 (12)			1130		3	3										
MW-9A (13)			1200		3	3										
B-3 (12)			1300		3	3										
AP13.5 (16)			1330	✓	3	3										
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field filtered Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD and PDF of report to: Catherine.Joe@cbi.com.					TURNAROUND REQUIREMENTS _____ RUSH (SURCHARGES APPLY) _____ 1 day _____ 2 day _____ 3 day _____ 4 day _____ 5 day <input checked="" type="checkbox"/> Standard				REPORT REQUIREMENTS _____ I. Results Only _____ II. Results + OC Summaries (LCS, DUP, MS/MSD as required) _____ III. Results + OC and Calibration Summaries _____ IV. Data Validation Report with Raw Data				INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>			
					REQUESTED REPORT DATE _____				Edata <input checked="" type="checkbox"/> Yes				<b>R1402601 7 Y</b> CB&I Environmental & Infrastructure Varian Beverly 			
See OAPP <input type="checkbox"/>																
STATE WHERE SAMPLES WERE COLLECTED:																
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		
Signature <b>Paul Hedoux</b>		Signature <b>J. Serrano</b>		Signature		Signature		Signature		Signature		Signature		Signature		
Printed Name <b>CB&amp;I</b>		Printed Name <b>J. Serrano</b>		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		
Firm <b>4.10.14 1830</b>		Firm <b>AS</b>		Firm		Firm		Firm		Firm		Firm		Firm		
Date/Time		Date/Time <b>7/11/14 0845</b>		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)															
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <b>1</b>															
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP            GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 825            GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602            PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608            PCBs <input type="checkbox"/> 8082 <input type="checkbox"/> 608            METALS, TOTAL (List in comments below)            METALS, DISSOLVED (List in comments below)</p> </div> <div style="width: 45%; font-size: 2em; font-weight: bold; text-align: center;">             Chloride 20           </div> </div>														
150 Royall Street																			
Canton, MA 02021																			
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@CBI.com</b>																	
Sampler's Signature <i>Paul Hedoux</i>		Sampler's Printed Name <b>Raymond Cadorette</b>		Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____															
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME MATRIX																
MW-8 (17)			4.10.14 1400 GW 3 3		REMARKS/ ALTERNATE DESCRIPTION														
MW-5 (21)			1430 3 3																
MW-4 (25)			1500 3 3																
MW-16 (35)			1600/600 3 3																
OB 10-S (29)			1530 3 3																
OB 10-BR (72)			1630 3 3																
AP 12-S (26)			1700 3 3																
AP 12-00 (48)			1730 5 3																
AP 12-BR (73)			1800 5 3																
SPECIAL INSTRUCTIONS/COMMENTS <b>Metals = Field filtered</b> Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD and PDF of report to: <b>Catherine.Joe@cbi.com.</b>				TURNAROUND REQUIREMENTS <input type="checkbox"/> RUSH (SURCHARGES APPLY) <input type="checkbox"/> 1 day <input type="checkbox"/> 2 day <input type="checkbox"/> 3 day <input type="checkbox"/> 4 day <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard  REQUESTED REPORT DATE _____													REPORT REQUIREMENTS <input type="checkbox"/> I. Results Only <input type="checkbox"/> II. Results + QC Summaries (LCS, DUP, MS/MSO as required) <input type="checkbox"/> III. Results + QC and Calibration Summaries <input type="checkbox"/> IV. Data Validation Report with Raw Data  Edata <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
								See QAPP <input type="checkbox"/>											
								STATE WHERE SAMPLES WERE COLLECTED:											
RELINQUISHED BY <i>Paul Hedoux</i> Signature <b>Paul Hedoux</b> Printed Name <b>CB&amp;I</b> Firm <b>4.10.14 1830</b> Date/Time		RECEIVED BY <i>[Signature]</i> Signature <b>J. Seward</b> Printed Name <b>Ans</b> Firm <b>4/11/14 0845</b> Date/Time		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY									



# Cooler Receipt and Preservation Check Form

Project/Client CB&I Folder Number 1214-2601

Cooler received on 4/11 by: JCS COURIER: ALS UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler? YES NO
2. Were custody papers properly filled out (ink, signed, etc.)? YES NO
3. Did all bottles arrive in good condition (unbroken)? YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES NO N/A
5. Were Ice or Ice packs present? YES NO
6. Where did the bottles originate? ALS/ROE, CLIENT
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
8. Temperature of cooler(s) upon receipt: 5.7 5.5

Is the temperature within 0° - 6° C?: Y N Y N Y N Y N Y N  
If No, Explain Below Date/Time Temperatures Taken: 4/11/14 0905

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location room by JCS on 4/11/14 at 0906  
5035 samples placed in storage location by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: JMU 4/11/14

Cooler Breakdown: Date: 4/14/14 Time: 1133 by: JCS

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

### Explain any discrepancies:

pH	Reagent			Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK
		YES	NO							
≥12	NaOH									No = Samples were preserved at lab as listed
≤2	HNO <sub>3</sub>	✓		BDB261JYB	3/15					
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						PM OK to Adjust: _____
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-							
	Zn Aceta	-	-							
	HCl	*	*							

\*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet

Bottle lot numbers: 4-002-003 081213-2A10  
Other Comments:

PC Secondary Review: JMU 4/22/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

<b>Project Name :</b> Varian Medical Systems, Inc	<b>Job Number :</b> 150151.03
<b>Prepared By:</b> Dale Dailey	<b>Date :</b> 6/3/2014
<b>Matrix:</b> Groundwater	
<b>Analyte Group :</b> Volatile Organics Total Organics Methane, Ethane, Ethylene	<b>Analytical Method :</b> EPA Method 8260C EPA Method SM20 5310 C EPA Method RSK 175
<b>Completed MADEP CAM Certification Form included:</b> Yes	<b>Laboratory ID No. :</b> R1402604
<b>Chain of Custody included in Data Package ?</b> Yes	<b>Is it Complete ?</b> Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/8, 4/9/14	8260C		14 Days	4/19-4/21/14
4/8, 4/9/14	SM20 5310 C		28 Days	4/17/14
4/8, 4/9/14	RSK 175		14 Days	4/15/14

**Sample temperature within QC limits:** Yes, 5.7° C

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? No

If no, list sample ID where range was exceeded: See Notes

**Equipment Field Blank ID :** NA  
**Trip Blank ID :** NA

<b>Method Blank:</b>	8260C	4/19 and 4/21/14
	RSK 175	4/15/2014
	SM20 5310 C	4/17/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

If so, list Sample ID/Compound/Concentration/Units: NA

**Notes:**

VOC: Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples AP34-DO (36) and MW-9 (20) were re-analyzed at a larger dilution to bring target analytes within the calibration range of the method. The analytes over the calibration range are flagged with an "E" and the diluted analytes flagged with a "D".

Dissolved Gases: Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Sample AP23-DO (48) was re-analyzed at a larger dilution to bring target analytes within the calibration range of the method. The analytes over the calibration range are flagged with an "E" and the diluted analytes flagged with a "D".

VOC: All LCS and LCSD recoveries were within QC limits. All RPD's were acceptable except the Acetone RPD on 4/19/14, which has been flagged with an "\*\*\*". The data was not impacted since the analytical results were non-detect for these analytes in these batches.

**Reviewed By:** Pernilla Haley 6/9/14



April 23, 2014

Service Request No: R1402604

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150151-03000000**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on April 11, 2014. For your reference, these analyses have been assigned our service request number **R1402604**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**



Janice Jaeger  
Client Services Manager

Page 1 of 68

CC: Pernilla Haley

## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Water

**Service Request No.:** R1402604  
**Project Number:** 150151-03000000  
**Date Received:** 04/11/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Water samples were collected on 04/08-09/14 and received at ALS in good condition at cooler temperatures of 5.5 – 5.7 °C as noted on the cooler receipt and preservation check form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #.

### Volatile Organics

Thirteen water samples were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples AP34-DO (36) and MW-9 (20) were re-analyzed at larger dilutions to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D".

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Surrogate Standard recoveries were within QC limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. All RPD's were acceptable except the Acetone RPD on 04/19/14 and has been flagged with an "\*\*\*".

All samples were analyzed within the required holding time of 14 days.

### Dissolved Gases

Thirteen water samples were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Sample AP23-DO (48) was re-analyzed at larger dilutions to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D".

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits.

All samples were analyzed within the required holding time of 14 days.

**Inorganic Analyses**

Six water samples were analyzed for TOC by method SM5310C.

The initial and continuing calibration criteria were met for all analytes.

All Blank Spike (LCS) recoveries were within QC limits.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150151

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1402604-001-013

Matrices: Groundwater/Surface Water  Soil/Sediment Drinking Water Air Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X	Yes	No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X	Yes	No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X	Yes	No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X	Yes	No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes	No	Yes
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X	Yes	No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X	Yes	No <sup>1</sup>
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*Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X	Yes	No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes	X	No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:

Position: Client Services  
Manager

Printed Name: Janice Jaeger

Date: 04/28/14

**00004**



## CASE NARRATIVE

This report contains analytical results for the following samples:

Service Request Number: R1402604

<u>Lab ID</u>	<u>Client ID</u>
R1402604-001	AP13-DO (51)
R1402604-002	AP23-DO (48)
R1402604-003	AP24-DO (47)
R1402604-004	AP33-DO (36)
R1402604-005	AP34-DO (36)
R1402604-006	AP35-DO (35)
R1402604-007	AP25-DO (46)
R1402604-008	AP30R-DO (30)
R1402604-009	MW-9 (20)
R1402604-010	OB15-S (18)
R1402604-011	RW-1 (37)
R1402604-012	OB9-S (23)
R1402604-013	OB25-DO (46)

00005

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of:* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

  
\_\_\_\_\_  
*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014

<u>Analytes</u>	<u>Methods</u>
ALUMINUM	EPA 200.7
ANTIMONY	EPA 200.7
ANTIMONY	EPA 200.8
ARSENIC	EPA 200.7
ARSENIC	EPA 200.8
BERYLLIUM	EPA 200.7
BERYLLIUM	EPA 200.8
CADMIUM	EPA 200.7
CADMIUM	EPA 200.8
CHROMIUM	EPA 200.7
CHROMIUM	EPA 200.8
COBALT	EPA 200.7
COBALT	EPA 200.8
COPPER	EPA 200.7
COPPER	EPA 200.8
IRON	EPA 200.7
LEAD	EPA 200.7
LEAD	EPA 200.8
MANGANESE	EPA 200.7
MANGANESE	EPA 200.8
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
MOLYBDENUM	EPA 200.8
NICKEL	EPA 200.7
NICKEL	EPA 200.8
SELENIUM	EPA 200.7
SELENIUM	EPA 200.8
SILVER	EPA 200.7
SILVER	EPA 200.8
THALLIUM	EPA 200.7
THALLIUM	EPA 200.8
VANADIUM	EPA 200.7
VANADIUM	EPA 200.8
ZINC	EPA 200.7
ZINC	EPA 200.8
SPECIFIC CONDUCTIVITY	EPA 120.1
TOTAL DISSOLVED SOLIDS	SM 2540C
HARDNESS (CACO3), TOTAL	SM 2340C
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
ALKALINITY, TOTAL	SM 2320B



**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: **01 JUL 2013**

**M-NY032      ALS ENVIRONMENTAL ROCHESTER  
                 ROCHESTER NY**

<b>NON POTABLE WATER (CHEMISTRY)</b>	<b>Effective Date</b>	<b>01 JUL 2013</b>	<b>Expiration Date</b>	<b>30 JUN 2014</b>
<u>Analytes</u>			<u>Methods</u>	
CHLORIDE			SM 4500-CL-E	
CHLORIDE			EPA 300.0	
FLUORIDE			EPA 300.0	
SULFATE			EPA 300.0	
AMMONIA-N			EPA 350.1	
NITRATE-N			EPA 300.0	
NITRATE-N			EPA 353.2	
KJELDAHL-N			EPA 351.2	
ORTHOPHOSPHATE			EPA 365.1	
PHOSPHORUS, TOTAL			EPA 365.1	
CHEMICAL OXYGEN DEMAND			EPA 410.4	
BIOCHEMICAL OXYGEN DEMAND			SM 5210B	
TOTAL ORGANIC CARBON			SM 5310C	
CYANIDE, TOTAL			EPA 335.4	
NON-FILTERABLE RESIDUE			SM 2540D	
OIL AND GREASE			EPA 1664	
PHENOLICS, TOTAL			EPA 420.4	
VOLATILE HALOCARBONS			EPA 601	
VOLATILE HALOCARBONS			EPA 624	
VOLATILE AROMATICS			EPA 602	
VOLATILE AROMATICS			EPA 624	
SVOC-ACID EXTRACTABLES			EPA 625	
SVOC-BASE/NEUTRAL EXTRACTABLES			EPA 625	
POLYCHLORINATED BIPHENYLS (WATEF			EPA 608	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water  
 Sample Name: AP13-DO (51)  
 Lab Code: R1402604-001

Service Request: R1402604  
 Date Collected: 4/ 8/14 1030  
 Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	569	mg/L	40	40	NA	4/17/14 04:09	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 1030  
 Date Received: 4/11/14  
 Date Analyzed: 4/21/14 22:09

Sample Name: AP13-DO (51)  
 Lab Code: R1402604-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\042114J4969.D\

Analysis Lot: 389054  
 Instrument Name: R-MS-12  
 Dilution Factor: 2000

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	25000		4000	
79-34-5	1,1,2,2-Tetrachloroethane	4000	U	4000	
79-00-5	1,1,2-Trichloroethane	4000	U	4000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4000	U	4000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	4000	U	4000	
107-06-2	1,2-Dichloroethane	4000	U	4000	
78-87-5	1,2-Dichloropropane	4000	U	4000	
67-64-1	Acetone	24000		20000	
75-27-4	Bromodichloromethane	4000	U	4000	
75-25-2	Bromoform	4000	U	4000	
74-83-9	Bromomethane	4000	U	4000	
56-23-5	Carbon Tetrachloride	4000	U	4000	
108-90-7	Chlorobenzene	4000	U	4000	
75-00-3	Chloroethane	4000	U	4000	
67-66-3	Chloroform	4000	U	4000	
74-87-3	Chloromethane	4000	U	4000	
124-48-1	Dibromochloromethane	4000	U	4000	
75-09-2	Methylene Chloride	4000	U	4000	
127-18-4	Tetrachloroethene (PCE)	85000		4000	
79-01-6	Trichloroethene (TCE)	340000		4000	
75-69-4	Trichlorofluoromethane (CFC 11)	4000	U	4000	
75-01-4	Vinyl Chloride	4000	U	4000	
156-59-2	cis-1,2-Dichloroethene	5400		4000	
10061-01-5	cis-1,3-Dichloropropene	4000	U	4000	
156-60-5	trans-1,2-Dichloroethene	4000	U	4000	
10061-02-6	trans-1,3-Dichloropropene	4000	U	4000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/21/14 22:09	
Dibromofluoromethane	102	70-130	4/21/14 22:09	
Toluene-d8	98	70-130	4/21/14 22:09	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: 4/ 8/14 1030  
Date Received: 4/11/14  
Date Analyzed: 4/15/14 10:23

Sample Name: AP13-DO (51)  
Lab Code: R1402604-001

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1012.run

Analysis Lot: 388215  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	1.0 U	1.0	
74-85-1	Ethene	9.9	1.0	
74-82-8	Methane	1.0 U	1.0	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water  
 Sample Name: AP23-DO (48)  
 Lab Code: R1402604-002

Service Request: R1402604  
 Date Collected: 4/ 8/14 0900  
 Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	387	mg/L	40	40	NA	4/17/14 18:10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 0900  
 Date Received: 4/11/14  
 Date Analyzed: 4/21/14 22:41

Sample Name: AP23-DO (48)  
 Lab Code: R1402604-002

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\042114\J4970.D\

Analysis Lot: 389054  
 Instrument Name: R-MS-12  
 Dilution Factor: 2000

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	4000	U	4000	
79-34-5	1,1,2,2-Tetrachloroethane	4000	U	4000	
79-00-5	1,1,2-Trichloroethane	4000	U	4000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4000	U	4000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	4000	U	4000	
107-06-2	1,2-Dichloroethane	4000	U	4000	
78-87-5	1,2-Dichloropropane	4000	U	4000	
67-64-1	Acetone	21000		20000	
75-27-4	Bromodichloromethane	4000	U	4000	
75-25-2	Bromoform	4000	U	4000	
74-83-9	Bromomethane	4000	U	4000	
56-23-5	Carbon Tetrachloride	4000	U	4000	
108-90-7	Chlorobenzene	4000	U	4000	
75-00-3	Chloroethane	4000	U	4000	
67-66-3	Chloroform	4000	U	4000	
74-87-3	Chloromethane	4000	U	4000	
124-48-1	Dibromochloromethane	4000	U	4000	
75-09-2	Methylene Chloride	4000	U	4000	
127-18-4	Tetrachloroethene (PCE)	41000		4000	
79-01-6	Trichloroethene (TCE)	360000		4000	
75-69-4	Trichlorofluoromethane (CFC 11)	4000	U	4000	
75-01-4	Vinyl Chloride	5200		4000	
156-59-2	cis-1,2-Dichloroethene	32000		4000	
10061-01-5	cis-1,3-Dichloropropene	4000	U	4000	
156-60-5	trans-1,2-Dichloroethene	4000	U	4000	
10061-02-6	trans-1,3-Dichloropropene	4000	U	4000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/21/14 22:41	
Dibromofluoromethane	99	70-130	4/21/14 22:41	
Toluene-d8	97	70-130	4/21/14 22:41	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 0900  
 Date Received: 4/11/14  
 Date Analyzed: 4/15/14 12:02

Sample Name: AP23-DO (48)  
 Lab Code: R1402604-002

Units: µg/L  
 Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
 Data File Name: 1017.run

Analysis Lot: 388215  
 Instrument Name: R-GC-02  
 Dilution Factor: 5

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	5.0 U	5.0	
74-85-1	Ethene	620 E	5.0	
74-82-8	Methane	280	5.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: 4/ 8/14 0900  
Date Received: 4/11/14  
Date Analyzed: 4/15/14 12:12

Sample Name: AP23-DO (48)  
Lab Code: R1402604-002  
Run Type: Dilution

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1018.run

Analysis Lot: 388215  
Instrument Name: R-GC-02  
Dilution Factor: 10

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	10 U	10	
74-85-1	Ethene	610 D	10	
74-82-8	Methane	280 D	10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water  
 Sample Name: AP24-DO (47)  
 Lab Code: R1402604-003

Service Request: R1402604  
 Date Collected: 4/ 8/14 1100  
 Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	38.2	mg/L	2.0	2	NA	4/17/14 18:31	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 1100  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 08:25

Sample Name: AP24-DO (47)  
 Lab Code: R1402604-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041814U4920.D\

Analysis Lot: 388888  
 Instrument Name: R-MS-12  
 Dilution Factor: 2000

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	30000		4000	
79-34-5	1,1,2,2-Tetrachloroethane	4000	U	4000	
79-00-5	1,1,2-Trichloroethane	4000	U	4000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4000	U	4000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	4000	U	4000	
107-06-2	1,2-Dichloroethane	4000	U	4000	
78-87-5	1,2-Dichloropropane	4000	U	4000	
67-64-1	Acetone	20000	U	20000	
75-27-4	Bromodichloromethane	4000	U	4000	
75-25-2	Bromoform	4000	U	4000	
74-83-9	Bromomethane	4000	U	4000	
56-23-5	Carbon Tetrachloride	4000	U	4000	
108-90-7	Chlorobenzene	4000	U	4000	
75-00-3	Chloroethane	4000	U	4000	
67-66-3	Chloroform	4000	U	4000	
74-87-3	Chloromethane	4000	U	4000	
124-48-1	Dibromochloromethane	4000	U	4000	
75-09-2	Methylene Chloride	4000	U	4000	
127-18-4	Tetrachloroethene (PCE)	31000		4000	
79-01-6	Trichloroethene (TCE)	340000		4000	
75-69-4	Trichlorofluoromethane (CFC 11)	4000	U	4000	
75-01-4	Vinyl Chloride	7900		4000	
156-59-2	cis-1,2-Dichloroethene	64000		4000	
10061-01-5	cis-1,3-Dichloropropene	4000	U	4000	
156-60-5	trans-1,2-Dichloroethene	4000	U	4000	
10061-02-6	trans-1,3-Dichloropropene	4000	U	4000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	70-130	4/19/14 08:25	
Dibromofluoromethane	104	70-130	4/19/14 08:25	
Toluene-d8	99	70-130	4/19/14 08:25	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: 4/ 8/14 1100  
Date Received: 4/11/14  
Date Analyzed: 4/15/14 12:35

Sample Name: AP24-DO (47)  
Lab Code: R1402604-003

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1020.run

Analysis Lot: 388215  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	1.0 U	1.0	
74-85-1	Ethene	16	1.0	
74-82-8	Methane	1.0 U	1.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water  
Sample Name: AP33-DO (36)  
Lab Code: R1402604-004

Service Request: R1402604  
Date Collected: 4/ 8/14 1200  
Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	625	mg/L	40	40	NA	4/17/14 18:52	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 1200  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 08:58

Sample Name: AP33-DO (36)  
 Lab Code: R1402604-004

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041814J4921.D\

Analysis Lot: 388888  
 Instrument Name: R-MS-12  
 Dilution Factor: 2500

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	60000		5000	
79-34-5	1,1,2,2-Tetrachloroethane	5000	U	5000	
79-00-5	1,1,2-Trichloroethane	5000	U	5000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5000	U	5000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5000	U	5000	
107-06-2	1,2-Dichloroethane	5000	U	5000	
78-87-5	1,2-Dichloropropane	5000	U	5000	
67-64-1	Acetone	25000	U	25000	
75-27-4	Bromodichloromethane	5000	U	5000	
75-25-2	Bromoform	5000	U	5000	
74-83-9	Bromomethane	5000	U	5000	
56-23-5	Carbon Tetrachloride	5000	U	5000	
108-90-7	Chlorobenzene	5000	U	5000	
75-00-3	Chloroethane	5000	U	5000	
67-66-3	Chloroform	5000	U	5000	
74-87-3	Chloromethane	5000	U	5000	
124-48-1	Dibromochloromethane	5000	U	5000	
75-09-2	Methylene Chloride	5000	U	5000	
127-18-4	Tetrachloroethene (PCE)	69000		5000	
79-01-6	Trichloroethene (TCE)	290000		5000	
75-69-4	Trichlorofluoromethane (CFC 11)	5000	U	5000	
75-01-4	Vinyl Chloride	10000		5000	
156-59-2	cis-1,2-Dichloroethene	290000		5000	
10061-01-5	cis-1,3-Dichloropropene	5000	U	5000	
156-60-5	trans-1,2-Dichloroethene	5000	U	5000	
10061-02-6	trans-1,3-Dichloropropene	5000	U	5000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/19/14 08:58	
Dibromofluoromethane	102	70-130	4/19/14 08:58	
Toluene-d8	97	70-130	4/19/14 08:58	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 1200  
 Date Received: 4/11/14  
 Date Analyzed: 4/15/14 12:45

Sample Name: AP33-DO (36)  
 Lab Code: R1402604-004

Units: µg/L  
 Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
 Data File Name: 1021.run

Analysis Lot: 388215  
 Instrument Name: R-GC-02  
 Dilution Factor: 50

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	50 U	50	
74-85-1	Ethene	2400	50	
74-82-8	Methane	60	50	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water  
 Sample Name: AP34-DO (36)  
 Lab Code: R1402604-005

Service Request: R1402604  
 Date Collected: 4/ 8/14 1245  
 Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	215	mg/L	10	10	NA	4/17/14 19:13	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 1245  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 06:16

Sample Name: AP34-DO (36)  
 Lab Code: R1402604-005

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041814J4916.D\

Analysis Lot: 388888  
 Instrument Name: R-MS-12  
 Dilution Factor: 250

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	8100	500	
79-34-5	1,1,2,2-Tetrachloroethane	500 U	500	
79-00-5	1,1,2-Trichloroethane	500 U	500	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1000	500	
75-35-4	1,1-Dichloroethene (1,1-DCE)	920	500	
107-06-2	1,2-Dichloroethane	500 U	500	
78-87-5	1,2-Dichloropropane	500 U	500	
67-64-1	Acetone	2500 U	2500	
75-27-4	Bromodichloromethane	500 U	500	
75-25-2	Bromoform	500 U	500	
74-83-9	Bromomethane	500 U	500	
56-23-5	Carbon Tetrachloride	500 U	500	
108-90-7	Chlorobenzene	500 U	500	
75-00-3	Chloroethane	500 U	500	
67-66-3	Chloroform	500 U	500	
74-87-3	Chloromethane	500 U	500	
124-48-1	Dibromochloromethane	500 U	500	
75-09-2	Methylene Chloride	500 U	500	
127-18-4	Tetrachloroethene (PCE)	500 U	500	
79-01-6	Trichloroethene (TCE)	640	500	
75-69-4	Trichlorofluoromethane (CFC 11)	500 U	500	
75-01-4	Vinyl Chloride	2100	500	
156-59-2	cis-1,2-Dichloroethene	55000 E	500	
10061-01-5	cis-1,3-Dichloropropene	500 U	500	
156-60-5	trans-1,2-Dichloroethene	500 U	500	
10061-02-6	trans-1,3-Dichloropropene	500 U	500	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/19/14 06:16	
Dibromofluoromethane	101	70-130	4/19/14 06:16	
Toluene-d8	98	70-130	4/19/14 06:16	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 1245  
 Date Received: 4/11/14  
 Date Analyzed: 4/21/14 21:37

Sample Name: AP34-DO (36)  
 Lab Code: R1402604-005  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\042114J4968.D\

Analysis Lot: 389054  
 Instrument Name: R-MS-12  
 Dilution Factor: 500

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	8200	D	1000	
79-34-5	1,1,2,2-Tetrachloroethane	1000	U	1000	
79-00-5	1,1,2-Trichloroethane	1000	U	1000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1000	D	1000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1000	U	1000	
107-06-2	1,2-Dichloroethane	1000	U	1000	
78-87-5	1,2-Dichloropropane	1000	U	1000	
67-64-1	Acetone	5000	U	5000	
75-27-4	Bromodichloromethane	1000	U	1000	
75-25-2	Bromoform	1000	U	1000	
74-83-9	Bromomethane	1000	U	1000	
56-23-5	Carbon Tetrachloride	1000	U	1000	
108-90-7	Chlorobenzene	1000	U	1000	
75-00-3	Chloroethane	1000	U	1000	
67-66-3	Chloroform	1000	U	1000	
74-87-3	Chloromethane	1000	U	1000	
124-48-1	Dibromochloromethane	1000	U	1000	
75-09-2	Methylene Chloride	1000	U	1000	
127-18-4	Tetrachloroethene (PCE)	1000	U	1000	
79-01-6	Trichloroethene (TCE)	1000	U	1000	
75-69-4	Trichlorofluoromethane (CFC 11)	1000	U	1000	
75-01-4	Vinyl Chloride	2100	D	1000	
156-59-2	cis-1,2-Dichloroethene	55000	D	1000	
10061-01-5	cis-1,3-Dichloropropene	1000	U	1000	
156-60-5	trans-1,2-Dichloroethene	1000	U	1000	
10061-02-6	trans-1,3-Dichloropropene	1000	U	1000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/21/14 21:37	
Dibromofluoromethane	101	70-130	4/21/14 21:37	
Toluene-d8	97	70-130	4/21/14 21:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: 4/ 8/14 1245  
Date Received: 4/11/14  
Date Analyzed: 4/15/14 12:55

Sample Name: AP34-DO (36)  
Lab Code: R1402604-005

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1022.run

Analysis Lot: 388215  
Instrument Name: R-GC-02  
Dilution Factor: 4

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	4.0 U	4.0	
74-85-1	Ethene	210	4.0	
74-82-8	Methane	25	4.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water  
Sample Name: AP35-DO (35)  
Lab Code: R1402604-006

Service Request: R1402604  
Date Collected: 4/ 8/14 1330  
Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	670	mg/L	100	100	NA	4/17/14 06:35	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 1330  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 06:48

Sample Name: AP35-DO (35)  
 Lab Code: R1402604-006

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041814VJ4917.D\

Analysis Lot: 388888  
 Instrument Name: R-MS-12  
 Dilution Factor: 1000

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2000	U	2000	
79-34-5	1,1,2,2-Tetrachloroethane	2000	U	2000	
79-00-5	1,1,2-Trichloroethane	2000	U	2000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2000	U	2000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2000	U	2000	
107-06-2	1,2-Dichloroethane	2000	U	2000	
78-87-5	1,2-Dichloropropane	2000	U	2000	
67-64-1	Acetone	10000	U	10000	
75-27-4	Bromodichloromethane	2000	U	2000	
75-25-2	Bromoform	2000	U	2000	
74-83-9	Bromomethane	2000	U	2000	
56-23-5	Carbon Tetrachloride	2000	U	2000	
108-90-7	Chlorobenzene	2000	U	2000	
75-00-3	Chloroethane	2000	U	2000	
67-66-3	Chloroform	2000	U	2000	
74-87-3	Chloromethane	2000	U	2000	
124-48-1	Dibromochloromethane	2000	U	2000	
75-09-2	Methylene Chloride	2000	U	2000	
127-18-4	Tetrachloroethene (PCE)	2100		2000	
79-01-6	Trichloroethene (TCE)	25000		2000	
75-69-4	Trichlorofluoromethane (CFC 11)	2000	U	2000	
75-01-4	Vinyl Chloride	2000	U	2000	
156-59-2	cis-1,2-Dichloroethene	130000		2000	
10061-01-5	cis-1,3-Dichloropropene	2000	U	2000	
156-60-5	trans-1,2-Dichloroethene	2000	U	2000	
10061-02-6	trans-1,3-Dichloropropene	2000	U	2000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/19/14 06:48	
Dibromofluoromethane	102	70-130	4/19/14 06:48	
Toluene-d8	96	70-130	4/19/14 06:48	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: 4/ 8/14 1330  
Date Received: 4/11/14  
Date Analyzed: 4/15/14 13:05

Sample Name: AP35-DO (35)  
Lab Code: R1402604-006

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1023.run

Analysis Lot: 388215  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	4.3	1.0	
74-85-1	Ethene	38	1.0	
74-82-8	Methane	62	1.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water  
Sample Name: AP25-DO (46)  
Lab Code: R1402604-007

Service Request: R1402604  
Date Collected: 4/ 8/14 0800  
Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	2.5		mg/L	1.0	1	NA	4/17/14 06:56	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 0800  
 Date Received: 4/11/14  
 Date Analyzed: 4/20/14 01:18

Sample Name: AP25-DO (46)  
 Lab Code: R1402604-007

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041914\J4941.D\

Analysis Lot: 388968  
 Instrument Name: R-MS-12  
 Dilution Factor: 20

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	40	U	40	
79-34-5	1,1,2,2-Tetrachloroethane	40	U	40	
79-00-5	1,1,2-Trichloroethane	40	U	40	
75-34-3	1,1-Dichloroethane (1,1-DCA)	40	U	40	
75-35-4	1,1-Dichloroethene (1,1-DCE)	40	U	40	
107-06-2	1,2-Dichloroethane	40	U	40	
78-87-5	1,2-Dichloropropane	40	U	40	
67-64-1	Acetone	200	U	200	
75-27-4	Bromodichloromethane	40	U	40	
75-25-2	Bromoform	40	U	40	
74-83-9	Bromomethane	40	U	40	
56-23-5	Carbon Tetrachloride	40	U	40	
108-90-7	Chlorobenzene	40	U	40	
75-00-3	Chloroethane	40	U	40	
67-66-3	Chloroform	40	U	40	
74-87-3	Chloromethane	40	U	40	
124-48-1	Dibromochloromethane	40	U	40	
75-09-2	Methylene Chloride	40	U	40	
127-18-4	Tetrachloroethene (PCE)	40	U	40	
79-01-6	Trichloroethene (TCE)	190		40	
75-69-4	Trichlorofluoromethane (CFC 11)	40	U	40	
75-01-4	Vinyl Chloride	120		40	
156-59-2	cis-1,2-Dichloroethene	2400		40	
10061-01-5	cis-1,3-Dichloropropene	40	U	40	
156-60-5	trans-1,2-Dichloroethene	40	U	40	
10061-02-6	trans-1,3-Dichloropropene	40	U	40	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/20/14 01:18	
Dibromofluoromethane	102	70-130	4/20/14 01:18	
Toluene-d8	97	70-130	4/20/14 01:18	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: 4/ 8/14 0800  
Date Received: 4/11/14  
Date Analyzed: 4/15/14 13:25

Sample Name: AP25-DO (46)  
Lab Code: R1402604-007

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1025.run

Analysis Lot: 388215  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	1.0 U	1.0	
74-85-1	Ethene	47	1.0	
74-82-8	Methane	9.1	1.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water  
Sample Name: AP30R-DO (30)  
Lab Code: R1402604-008

Service Request: R1402604  
Date Collected: 4/8/14 1000  
Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	4.1	mg/L	1.0	1	NA	4/17/14 07:17	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 1000  
 Date Received: 4/11/14  
 Date Analyzed: 4/20/14 02:23

Sample Name: AP30R-DO (30)  
 Lab Code: R1402604-008

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041914J4943.D\

Analysis Lot: 388968  
 Instrument Name: R-MS-12  
 Dilution Factor: 50

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	530		100	
79-34-5	1,1,2,2-Tetrachloroethane	100	U	100	
79-00-5	1,1,2-Trichloroethane	100	U	100	
75-34-3	1,1-Dichloroethane (1,1-DCA)	100	U	100	
75-35-4	1,1-Dichloroethene (1,1-DCE)	100	U	100	
107-06-2	1,2-Dichloroethane	100	U	100	
78-87-5	1,2-Dichloropropane	100	U	100	
67-64-1	Acetone	500	U	500	
75-27-4	Bromodichloromethane	100	U	100	
75-25-2	Bromoform	100	U	100	
74-83-9	Bromomethane	100	U	100	
56-23-5	Carbon Tetrachloride	470		100	
108-90-7	Chlorobenzene	100	U	100	
75-00-3	Chloroethane	100	U	100	
67-66-3	Chloroform	1400		100	
74-87-3	Chloromethane	100	U	100	
124-48-1	Dibromochloromethane	100	U	100	
75-09-2	Methylene Chloride	100	U	100	
127-18-4	Tetrachloroethene (PCE)	3100		100	
79-01-6	Trichloroethene (TCE)	4800		100	
75-69-4	Trichlorofluoromethane (CFC 11)	100	U	100	
75-01-4	Vinyl Chloride	100	U	100	
156-59-2	cis-1,2-Dichloroethene	250		100	
10061-01-5	cis-1,3-Dichloropropene	100	U	100	
156-60-5	trans-1,2-Dichloroethene	100	U	100	
10061-02-6	trans-1,3-Dichloropropene	100	U	100	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/20/14 02:23	
Dibromofluoromethane	101	70-130	4/20/14 02:23	
Toluene-d8	97	70-130	4/20/14 02:23	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: 4/ 8/14 1000  
Date Received: 4/11/14  
Date Analyzed: 4/15/14 14:47

Sample Name: AP30R-DO (30)  
Lab Code: R1402604-008

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1031.run

Analysis Lot: 388221  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	1.7	1.0	
74-85-1	Ethene	1.0 U	1.0	
74-82-8	Methane	6.4	1.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water  
 Sample Name: MW-9 (20)  
 Lab Code: R1402604-009

Service Request: R1402604  
 Date Collected: 4/ 8/14 1500  
 Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1110	mg/L	100	100	NA	4/17/14 08:20	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 1500  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 03:34

Sample Name: MW-9 (20)  
 Lab Code: R1402604-009

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa12\Data\041814U4911.D\

Analysis Lot: 388888  
 Instrument Name: R-MS-12  
 Dilution Factor: 25

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	50 U	50	
79-34-5	1,1,2,2-Tetrachloroethane	50 U	50	
79-00-5	1,1,2-Trichloroethane	50 U	50	
75-34-3	1,1-Dichloroethane (1,1-DCA)	50 U	50	
75-35-4	1,1-Dichloroethene (1,1-DCE)	50 U	50	
107-06-2	1,2-Dichloroethane	50 U	50	
78-87-5	1,2-Dichloropropane	50 U	50	
67-64-1	Acetone	250 U	250	
75-27-4	Bromodichloromethane	50 U	50	
75-25-2	Bromoform	50 U	50	
74-83-9	Bromomethane	50 U	50	
56-23-5	Carbon Tetrachloride	50 U	50	
108-90-7	Chlorobenzene	50 U	50	
75-00-3	Chloroethane	50 U	50	
67-66-3	Chloroform	50 U	50	
74-87-3	Chloromethane	50 U	50	
124-48-1	Dibromochloromethane	50 U	50	
75-09-2	Methylene Chloride	50 U	50	
127-18-4	Tetrachloroethene (PCE)	50 U	50	
79-01-6	Trichloroethene (TCE)	50 U	50	
75-69-4	Trichlorofluoromethane (CFC 11)	50 U	50	
75-01-4	Vinyl Chloride	2400	50	
156-59-2	cis-1,2-Dichloroethene	5300 E	50	
10061-01-5	cis-1,3-Dichloropropene	50 U	50	
156-60-5	trans-1,2-Dichloroethene	50 U	50	
10061-02-6	trans-1,3-Dichloropropene	50 U	50	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	4/19/14 03:34	
Dibromofluoromethane	99	70-130	4/19/14 03:34	
Toluene-d8	97	70-130	4/19/14 03:34	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 1500  
 Date Received: 4/11/14  
 Date Analyzed: 4/20/14 02:56

Sample Name: MW-9 (20)  
 Lab Code: R1402604-009  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041914\J4944.D\

Analysis Lot: 388968  
 Instrument Name: R-MS-12  
 Dilution Factor: 50

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	100	U	100	
79-34-5	1,1,2,2-Tetrachloroethane	100	U	100	
79-00-5	1,1,2-Trichloroethane	100	U	100	
75-34-3	1,1-Dichloroethane (1,1-DCA)	100	U	100	
75-35-4	1,1-Dichloroethene (1,1-DCE)	100	U	100	
107-06-2	1,2-Dichloroethane	100	U	100	
78-87-5	1,2-Dichloropropane	100	U	100	
67-64-1	Acetone	500	U	500	
75-27-4	Bromodichloromethane	100	U	100	
75-25-2	Bromoform	100	U	100	
74-83-9	Bromomethane	100	U	100	
56-23-5	Carbon Tetrachloride	100	U	100	
108-90-7	Chlorobenzene	100	U	100	
75-00-3	Chloroethane	100	U	100	
67-66-3	Chloroform	100	U	100	
74-87-3	Chloromethane	100	U	100	
124-48-1	Dibromochloromethane	100	U	100	
75-09-2	Methylene Chloride	100	U	100	
127-18-4	Tetrachloroethene (PCE)	100	U	100	
79-01-6	Trichloroethene (TCE)	100	U	100	
75-69-4	Trichlorofluoromethane (CFC 11)	100	U	100	
75-01-4	Vinyl Chloride	1900	D	100	
156-59-2	cis-1,2-Dichloroethene	4100	D	100	
10061-01-5	cis-1,3-Dichloropropene	100	U	100	
156-60-5	trans-1,2-Dichloroethene	100	U	100	
10061-02-6	trans-1,3-Dichloropropene	100	U	100	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	4/20/14 02:56	
Dibromofluoromethane	103	70-130	4/20/14 02:56	
Toluene-d8	97	70-130	4/20/14 02:56	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: 4/ 8/14 1500  
Date Received: 4/11/14  
Date Analyzed: 4/15/14 14:57

Sample Name: MW-9 (20)  
Lab Code: R1402604-009

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1032.run

Analysis Lot: 388221  
Instrument Name: R-GC-02  
Dilution Factor: 125

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	670	130	
74-85-1	Ethene	5300	130	
74-82-8	Methane	13000	130	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water  
 Sample Name: OB15-S (18)  
 Lab Code: R1402604-010

Service Request: R1402604  
 Date Collected: 4/ 8/14 1400  
 Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	17.5	mg/L	1.0	1	NA	4/17/14 19:34	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 8/14 1400  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 02:29

Sample Name: OB15-S (18)  
 Lab Code: R1402604-010

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041814J4909.D\

Analysis Lot: 388888  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	11		2.0	
156-59-2	cis-1,2-Dichloroethene	2.9		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	4/19/14 02:29	
Dibromofluoromethane	103	70-130	4/19/14 02:29	
Toluene-d8	98	70-130	4/19/14 02:29	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: 4/ 8/14 1400  
Date Received: 4/11/14  
Date Analyzed: 4/15/14 15:09

Sample Name: OB15-S (18)  
Lab Code: R1402604-010

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1033.run

Analysis Lot: 388221  
Instrument Name: R-GC-02  
Dilution Factor: 125

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	340	130	
74-85-1	Ethene	160	130	
74-82-8	Methane	11000	130	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water  
 Sample Name: RW-1 (37)  
 Lab Code: R1402604-011

Service Request: R1402604  
 Date Collected: 4/9/14 0900  
 Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	50.9	mg/L	4.0	4	NA	4/17/14 19:55	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 9/14 0900  
 Date Received: 4/11/14  
 Date Analyzed: 4/20/14 01:51

Sample Name: RW-1 (37)  
 Lab Code: R1402604-011

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041914\J4942.D\

Analysis Lot: 388968  
 Instrument Name: R-MS-12  
 Dilution Factor: 25

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	50	U	50	
79-34-5	1,1,2,2-Tetrachloroethane	50	U	50	
79-00-5	1,1,2-Trichloroethane	50	U	50	
75-34-3	1,1-Dichloroethane (1,1-DCA)	50	U	50	
75-35-4	1,1-Dichloroethene (1,1-DCE)	50	U	50	
107-06-2	1,2-Dichloroethane	50	U	50	
78-87-5	1,2-Dichloropropane	50	U	50	
67-64-1	Acetone	250	U	250	
75-27-4	Bromodichloromethane	50	U	50	
75-25-2	Bromoform	50	U	50	
74-83-9	Bromomethane	50	U	50	
56-23-5	Carbon Tetrachloride	50	U	50	
108-90-7	Chlorobenzene	50	U	50	
75-00-3	Chloroethane	50	U	50	
67-66-3	Chloroform	50	U	50	
74-87-3	Chloromethane	50	U	50	
124-48-1	Dibromochloromethane	50	U	50	
75-09-2	Methylene Chloride	50	U	50	
127-18-4	Tetrachloroethene (PCE)	50	U	50	
79-01-6	Trichloroethene (TCE)	50	U	50	
75-69-4	Trichlorofluoromethane (CFC 11)	50	U	50	
75-01-4	Vinyl Chloride	480		50	
156-59-2	cis-1,2-Dichloroethene	4300		50	
10061-01-5	cis-1,3-Dichloropropene	50	U	50	
156-60-5	trans-1,2-Dichloroethene	50	U	50	
10061-02-6	trans-1,3-Dichloropropene	50	U	50	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/20/14 01:51	
Dibromofluoromethane	100	70-130	4/20/14 01:51	
Toluene-d8	96	70-130	4/20/14 01:51	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: 4/ 9/14 0900  
Date Received: 4/11/14  
Date Analyzed: 4/15/14 15:19

Sample Name: RW-1 (37)  
Lab Code: R1402604-011

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1034.run

Analysis Lot: 388221  
Instrument Name: R-GC-02  
Dilution Factor: 4

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	4.0 U	4.0	
74-85-1	Ethene	15	4.0	
74-82-8	Methane	370	4.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water  
Sample Name: OB9-S (23)  
Lab Code: R1402604-012

Service Request: R1402604  
Date Collected: 4/9/14 0930  
Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	26.4	mg/L	4.0	4	NA	4/17/14 20:15	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/ 9/14 0930  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 03:01

Sample Name: OB9-S (23)  
 Lab Code: R1402604-012

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041814\J4910.D\

Analysis Lot: 388888  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.3		2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.9		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/19/14 03:01	
Dibromofluoromethane	102	70-130	4/19/14 03:01	
Toluene-d8	97	70-130	4/19/14 03:01	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: 4/ 9/14 0930  
Date Received: 4/11/14  
Date Analyzed: 4/15/14 15:29

Sample Name: OB9-S (23)  
Lab Code: R1402604-012

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1035.run

Analysis Lot: 388221  
Instrument Name: R-GC-02  
Dilution Factor: 250

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	250 U	250	
74-85-1	Ethene	250 U	250	
74-82-8	Methane	15000	250	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water  
 Sample Name: OB25-DO (46)  
 Lab Code: R1402604-013

Service Request: R1402604  
 Date Collected: 4/ 9/14 1030  
 Date Received: 4/11/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.4	mg/L	1.0	1	NA	4/17/14 20:36	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/9/14 1030  
 Date Received: 4/11/14  
 Date Analyzed: 4/19/14 05:11

Sample Name: OB25-DO (46)  
 Lab Code: R1402604-013

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041814J4914.D\

Analysis Lot: 388888  
 Instrument Name: R-MS-12  
 Dilution Factor: 100

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	200	U	200	
79-34-5	1,1,2,2-Tetrachloroethane	200	U	200	
79-00-5	1,1,2-Trichloroethane	200	U	200	
75-34-3	1,1-Dichloroethane (1,1-DCA)	200	U	200	
75-35-4	1,1-Dichloroethene (1,1-DCE)	200	U	200	
107-06-2	1,2-Dichloroethane	200	U	200	
78-87-5	1,2-Dichloropropane	200	U	200	
67-64-1	Acetone	1000	U	1000	
75-27-4	Bromodichloromethane	200	U	200	
75-25-2	Bromoform	200	U	200	
74-83-9	Bromomethane	200	U	200	
56-23-5	Carbon Tetrachloride	200	U	200	
108-90-7	Chlorobenzene	200	U	200	
75-00-3	Chloroethane	200	U	200	
67-66-3	Chloroform	200	U	200	
74-87-3	Chloromethane	200	U	200	
124-48-1	Dibromochloromethane	200	U	200	
75-09-2	Methylene Chloride	200	U	200	
127-18-4	Tetrachloroethene (PCE)	470		200	
79-01-6	Trichloroethene (TCE)	17000		200	
75-69-4	Trichlorofluoromethane (CFC 11)	200	U	200	
75-01-4	Vinyl Chloride	200	U	200	
156-59-2	cis-1,2-Dichloroethene	480		200	
10061-01-5	cis-1,3-Dichloropropene	200	U	200	
156-60-5	trans-1,2-Dichloroethene	200	U	200	
10061-02-6	trans-1,3-Dichloropropene	200	U	200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/19/14 05:11	
Dibromofluoromethane	102	70-130	4/19/14 05:11	
Toluene-d8	97	70-130	4/19/14 05:11	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: 4/9/14 1030  
 Date Received: 4/11/14  
 Date Analyzed: 4/15/14 15:39

Sample Name: OB25-DO (46)  
 Lab Code: R1402604-013

Units: µg/L  
 Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
 Data File Name: 1036.run

Analysis Lot: 388221  
 Instrument Name: R-GC-02  
 Dilution Factor: 4

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	4.0 U	4.0	
74-85-1	Ethene	4.0 U	4.0	
74-82-8	Methane	320	4.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water  
 Sample Name: Method Blank  
 Lab Code: R1402604-MB1

Service Request: R1402604  
 Date Collected: NA  
 Date Received: NA

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0	U	mg/L	1.0	1	NA	4/17/14 01:01	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water  
Sample Name: Method Blank  
Lab Code: R1402604-MB2

Service Request: R1402604  
Date Collected: NA  
Date Received: NA

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	1.0 U	mg/L	1.0	1	NA	4/17/14 17:28	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/19/14 01:57

Sample Name: Method Blank  
 Lab Code: RQ1403848-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\041814J4908.D\

Analysis Lot: 388888  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/19/14 01:57	
Dibromofluoromethane	101	70-130	4/19/14 01:57	
Toluene-d8	98	70-130	4/19/14 01:57	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/19/14 18:49

Sample Name: Method Blank  
 Lab Code: RQ1403864-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa12\Data\041914\4929.D\

Analysis Lot: 388968  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	4/19/14 18:49	
Dibromofluoromethane	100	70-130	4/19/14 18:49	
Toluene-d8	98	70-130	4/19/14 18:49	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/21/14 13:34

Sample Name: Method Blank  
 Lab Code: RQ1403905-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\042114J4953.D\

Analysis Lot: 389054  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	4/21/14 13:34	
Dibromofluoromethane	101	70-130	4/21/14 13:34	
Toluene-d8	97	70-130	4/21/14 13:34	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: NA  
Date Received: NA  
Date Analyzed: 4/15/14 08:39

Sample Name: Method Blank  
Lab Code: RQ1403617-01

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1002.run

Analysis Lot: 388215  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	1.0 U	1.0	
74-85-1	Ethene	1.0 U	1.0	
74-82-8	Methane	1.0 U	1.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-03000000  
Sample Matrix: Water

Service Request: R1402604  
Date Collected: NA  
Date Received: NA  
Date Analyzed: 4/15/14 14:07

Sample Name: Method Blank  
Lab Code: RQ1403619-01

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1028.run

Analysis Lot: 388221  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	1.0 U	1.0	
74-85-1	Ethene	1.0 U	1.0	
74-82-8	Methane	1.0 U	1.0	

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Analyzed: 4/17/14

Lab Control Sample Summary  
 General Chemistry Parameters

Units: mg/L  
 Basis: NA

Analyte Name	Method	Lab Control Sample R1402604-LCS1			% Rec Limits
		Result	Spike Amount	% Rec	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	10.0	10.0	100	86 - 119

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Analyzed: 4/17/14

Lab Control Sample Summary  
 General Chemistry Parameters

Units: mg/L  
 Basis: NA

Lab Control Sample  
 R1402604-LCS2

Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	10.3	10.0	103	86 - 119

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Analyzed: 4/19/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 388888

Analyte Name	Lab Control Sample RQ1403848-03			Duplicate Lab Control Sample RQ1403848-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	18.6	20.0	93	20.6	20.0	103	70 - 130	10	20
1,1,2,2-Tetrachloroethane	18.6	20.0	93	19.3	20.0	96	70 - 130	4	20
1,1,2-Trichloroethane	20.1	20.0	101	22.0	20.0	110	70 - 130	9	20
1,1-Dichloroethane (1,1-DCA)	18.0	20.0	90	20.0	20.0	100	70 - 130	11	20
1,1-Dichloroethene (1,1-DCE)	20.8	20.0	104	22.7	20.0	113	70 - 130	9	20
1,2-Dichloroethane	20.7	20.0	104	22.3	20.0	112	70 - 130	7	20
1,2-Dichloropropane	18.2	20.0	91	19.6	20.0	98	70 - 130	7	20
Acetone	28.3	20.0	142	30.3	20.0	151	40 - 160	7	20
Bromodichloromethane	19.8	20.0	99	22.0	20.0	110	70 - 130	11	20
Bromoform	20.8	20.0	104	22.0	20.0	110	70 - 130	6	20
Bromomethane	21.8	20.0	109	23.3	20.0	116	40 - 160	7	20
Carbon Tetrachloride	18.5	20.0	92	20.6	20.0	103	70 - 130	11	20
Chlorobenzene	18.9	20.0	94	20.6	20.0	103	70 - 130	9	20
Chloroethane	19.9	20.0	99	21.6	20.0	108	70 - 130	9	20
Chloroform	18.4	20.0	92	20.2	20.0	101	70 - 130	9	20
Chloromethane	20.3	20.0	102	21.7	20.0	108	40 - 160	6	20
Dibromochloromethane	21.3	20.0	107	22.6	20.0	113	70 - 130	6	20
Methylene Chloride	18.6	20.0	93	20.0	20.0	100	70 - 130	7	20
Tetrachloroethene (PCE)	18.8	20.0	94	21.0	20.0	105	70 - 130	11	20
Trichloroethene (TCE)	21.1	20.0	106	23.8	20.0	119	70 - 130	12	20
Trichlorofluoromethane (CFC 11)	18.5	20.0	93	20.7	20.0	103	70 - 130	11	20
Vinyl Chloride	21.0	20.0	105	23.9	20.0	120	70 - 130	13	20
cis-1,2-Dichloroethene	18.2	20.0	91	19.8	20.0	99	70 - 130	9	20
cis-1,3-Dichloropropene	18.9	20.0	94	20.3	20.0	101	70 - 130	7	20
trans-1,2-Dichloroethene	18.1	20.0	91	20.4	20.0	102	70 - 130	12	20
trans-1,3-Dichloropropene	20.6	20.0	103	22.4	20.0	112	70 - 130	8	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Analyzed: 4/19/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 388968

Analyte Name	Lab Control Sample RQ1403864-03			Duplicate Lab Control Sample RQ1403864-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	19.7	20.0	98	20.0	20.0	100	70 - 130	2	20
1,1,2,2-Tetrachloroethane	20.1	20.0	100	19.7	20.0	98	70 - 130	2	20
1,1,2-Trichloroethane	20.0	20.0	100	20.2	20.0	101	70 - 130	<1	20
1,1-Dichloroethane (1,1-DCA)	19.0	20.0	95	19.4	20.0	97	70 - 130	2	20
1,1-Dichloroethene (1,1-DCE)	22.0	20.0	110	23.0	20.0	115	70 - 130	5	20
1,2-Dichloroethane	21.3	20.0	106	21.2	20.0	106	70 - 130	<1	20
1,2-Dichloropropane	19.3	20.0	96	19.4	20.0	97	70 - 130	<1	20
Acetone	14.7	20.0	74	20.4	20.0	102	40 - 160	33 *	20
Bromodichloromethane	21.1	20.0	106	21.1	20.0	106	70 - 130	<1	20
Bromoform	21.2	20.0	106	20.9	20.0	105	70 - 130	1	20
Bromomethane	20.5	20.0	102	22.5	20.0	112	40 - 160	9	20
Carbon Tetrachloride	20.5	20.0	103	20.2	20.0	101	70 - 130	2	20
Chlorobenzene	20.3	20.0	102	20.6	20.0	103	70 - 130	2	20
Chloroethane	20.7	20.0	103	21.1	20.0	105	70 - 130	2	20
Chloroform	19.6	20.0	98	19.5	20.0	98	70 - 130	<1	20
Chloromethane	20.7	20.0	103	21.6	20.0	108	40 - 160	4	20
Dibromochloromethane	22.3	20.0	112	22.0	20.0	110	70 - 130	1	20
Methylene Chloride	18.8	20.0	94	19.3	20.0	97	70 - 130	3	20
Tetrachloroethene (PCE)	21.0	20.0	105	21.3	20.0	107	70 - 130	2	20
Trichloroethene (TCE)	20.9	20.0	104	21.2	20.0	106	70 - 130	2	20
Trichlorofluoromethane (CFC 11)	20.2	20.0	101	20.4	20.0	102	70 - 130	1	20
Vinyl Chloride	22.8	20.0	114	22.5	20.0	113	70 - 130	1	20
cis-1,2-Dichloroethene	18.9	20.0	95	19.7	20.0	98	70 - 130	4	20
cis-1,3-Dichloropropene	20.2	20.0	101	20.0	20.0	100	70 - 130	<1	20
trans-1,2-Dichloroethene	20.0	20.0	100	20.3	20.0	101	70 - 130	1	20
trans-1,3-Dichloropropene	22.1	20.0	110	21.5	20.0	107	70 - 130	3	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Analyzed: 4/21/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389054

Analyte Name	Lab Control Sample RQ1403905-03			Duplicate Lab Control Sample RQ1403905-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	20.3	20.0	101	20.7	20.0	103	70 - 130	2	20
1,1,2,2-Tetrachloroethane	19.9	20.0	99	19.4	20.0	97	70 - 130	2	20
1,1,2-Trichloroethane	21.2	20.0	106	20.8	20.0	104	70 - 130	1	20
1,1-Dichloroethane (1,1-DCA)	19.7	20.0	99	20.0	20.0	100	70 - 130	1	20
1,1-Dichloroethene (1,1-DCE)	22.9	20.0	115	23.4	20.0	117	70 - 130	2	20
1,2-Dichloroethane	20.9	20.0	105	20.9	20.0	105	70 - 130	<1	20
1,2-Dichloropropane	19.9	20.0	99	19.8	20.0	99	70 - 130	<1	20
Acetone	20.5	20.0	102	18.6	20.0	93	40 - 160	10	20
Bromodichloromethane	21.9	20.0	109	21.8	20.0	109	70 - 130	<1	20
Bromoform	21.4	20.0	107	21.8	20.0	109	70 - 130	2	20
Bromomethane	22.0	20.0	110	21.7	20.0	108	40 - 160	2	20
Carbon Tetrachloride	20.5	20.0	102	21.0	20.0	105	70 - 130	3	20
Chlorobenzene	20.8	20.0	104	21.6	20.0	108	70 - 130	4	20
Chloroethane	21.5	20.0	108	22.4	20.0	112	70 - 130	4	20
Chloroform	20.1	20.0	101	20.0	20.0	100	70 - 130	<1	20
Chloromethane	22.1	20.0	110	22.4	20.0	112	40 - 160	1	20
Dibromochloromethane	22.1	20.0	110	22.5	20.0	112	70 - 130	2	20
Methylene Chloride	19.7	20.0	98	20.2	20.0	101	70 - 130	2	20
Tetrachloroethene (PCE)	21.6	20.0	108	22.1	20.0	111	70 - 130	3	20
Trichloroethene (TCE)	21.6	20.0	108	21.9	20.0	109	70 - 130	1	20
Trichlorofluoromethane (CFC 11)	20.3	20.0	101	20.7	20.0	104	70 - 130	2	20
Vinyl Chloride	23.1	20.0	115	23.5	20.0	118	70 - 130	2	20
cis-1,2-Dichloroethene	19.8	20.0	99	20.2	20.0	101	70 - 130	2	20
cis-1,3-Dichloropropene	20.9	20.0	104	20.9	20.0	104	70 - 130	<1	20
trans-1,2-Dichloroethene	20.2	20.0	101	20.3	20.0	101	70 - 130	<1	20
trans-1,3-Dichloropropene	21.8	20.0	109	22.2	20.0	111	70 - 130	2	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Analyzed: 4/15/14

Lab Control Sample Summary  
 Dissolved Gases by GC/FID

Analytical Method: RSK 175

Units: µg/L  
 Basis: NA

Analysis Lot: 388215

Analyte Name	Lab Control Sample RQ1403617-02			Duplicate Lab Control Sample RQ1403617-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Ethane	26.2	26.1	101	26.9	26.1	103	78 - 134	3	30
Ethene	26.8	24.3	110	27.3	24.3	112	73 - 129	2	30
Methane	25.7	26.2	98	26.1	26.2	100	76 - 138	1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151-03000000  
 Sample Matrix: Water

Service Request: R1402604  
 Date Analyzed: 4/15/14

Lab Control Sample Summary  
 Dissolved Gases by GC/FID

Analytical Method: RSK 175


Units: µg/L  
 Basis: NA

Analysis Lot: 388221

Analyte Name	Lab Control Sample RQ1403619-02			Duplicate Lab Control Sample RQ1403619-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Ethane	27.4	26.1	105	26.3	26.1	101	78 - 134	4	30
Ethene	28.6	24.3	117	27.3	24.3	112	73 - 129	4	30
Methane	26.4	26.2	101	25.2	26.2	96	76 - 138	5	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Project Name <b>Varian Beverly</b>		Project Number <b>150151-03000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)														
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <u>1</u> <u>3</u>														
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 825 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCB's <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) Methanol, Ethane, Ethene, TOC												Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____	
150 Royall Street																		
Canton, MA 02021																		
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@cbi.com</b>																
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <b>Paul Ledoux</b>		REMARKS/ ALTERNATE DESCRIPTION														
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME MATRIX																
AP 13-DO (51)		4.8.14	1030 GW															
AP 23-DO (48)			0900															
AP 24-DO (47)			1100															
AP 33-DO (36)			1200															
AP 34-DO (36)			1245															
AP 35-DO (35)			1330															
AP 25-DO (46)			0800															
AP 30R-DO (30)			1000															
MW-9 (20)			1500															
OB 15-S (18)			1400															
SPECIAL INSTRUCTIONS/COMMENTS <b>Metals</b>  Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD & PDF of report to: <b>Catherine.Joe@cbi.com.</b>				TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY)  <input type="checkbox"/> 1 day <input type="checkbox"/> 2 day <input type="checkbox"/> 3 day <input type="checkbox"/> 4 day <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard  REQUESTED REPORT DATE _____				REPORT REQUIREMENTS <input type="checkbox"/> I. Results Only <input type="checkbox"/> II. Results + OC Summaries (LCS, DUP, MSMSD as required) <input type="checkbox"/> III. Results + OC and Calibration Summaries <input type="checkbox"/> IV. Data Validation Report with Re-				INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>  <b>R1402604 7 Y</b> CB&I Environmental & Infrastructure Varian Beverly 						
See QAPP <input type="checkbox"/>				Edate <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No														
STATE WHERE SAMPLES WERE COLLECTED:																		
RELINQUISHED BY <i>[Signature]</i> Signature <b>Paul Ledoux</b> Printed Name <b>CBE</b> Firm <b>4.10.14 1830</b> Date/Time		RECEIVED BY <i>[Signature]</i> Signature <b>S. Seaman</b> Printed Name <b>AUS</b> Firm <b>4/11/14 0845</b> Date/Time		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY								

Project Name <b>Varian Beverly</b>		Project Number <b>150151-03000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <u>1</u> <u>2</u> <u>3</u>																
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOA's <input checked="" type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 625 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCBs <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) Methanol, Ethanol, Toluene TOC												Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____			
150 Royall Street																				
Canton, MA 02021																				
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@cbi.com</b>																		
Sampler's Signature		Sampler's Printed Name		REMARKS/ ALTERNATE DESCRIPTION																
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME		MATRIX																
<b>RW-1 (37)</b>		<b>4.9.14</b>	<b>0900</b>	<b>GW</b>	<b>7</b>	<b>3</b>														
<b>OB9-S (23)</b>		<b>↓</b>	<b>0930</b>	<b>↓</b>	<b>7</b>	<b>3</b>														
<b>OB25-DO (46)</b>		<b>↓</b>	<b>1030</b>	<b>↓</b>	<b>7</b>	<b>3</b>														

**SPECIAL INSTRUCTIONS/COMMENTS**  
**Metals**  
 Site specific VOC list.  
 Massachusetts CAM analyses reporting and QA/QC.  
 Please email GISKey formatted EDD and PDF of report to:  
 Catherine.Joe@cbi.com.

See OAPP

**TURNAROUND REQUIREMENTS**  
 RUSH (SURCHARGES APPLY)  
 1 day  2 day  3 day  
 4 dgy  5 day  
 Standard


REQUESTED REPORT DATE \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Results Only  
 II. Results + QC Summaries (LCS, DUP, MS/MSD as required)  
 III. Results + QC and Calibration Summaries  
 IV. Data Validation Report with Raw I

Edata  Yes  No

**INVOICE INFORMATION**  
 PO #: **873489**  
 BILL TO: **CB&I**

**R1402604** **7 Y**  
 CB&I Environmental & Infrastructure  
 Varian Beverly



STATE WHERE SAMPLES WERE COLLECTED:					
RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm	Firm	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time



# Cooler Receipt and Preservation Check Form

Project/Client CB&T Folder Number 114-2607

Cooler received on 4/11 by: JCS COURIER: ALS UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler? YES NO
2. Were custody papers properly filled out (ink, signed, etc.)? YES NO
3. Did all bottles arrive in good condition (unbroken)? YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES NO N/A
5. Were Ice or Ice packs present? YES NO
6. Where did the bottles originate? ALS/ROC, CLIENT
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
8. Temperature of cooler(s) upon receipt: 5.7 5.5

Is the temperature within 0° - 6° C?: Y N Y N Y N Y N Y N  
If No, Explain Below Date/Time Temperatures Taken: 4/11/14 0905

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location room by JCS on 4/11/14 at 0906  
5035 samples placed in storage location \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: SMJ 4/11/14

Cooler Breakdown: Date: 4/14/14 Time: 0909 by: JCS

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	YES NO		Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
		YES	NO						
≥12	NaOH								
≤2	HNO <sub>3</sub>								
≤2	H <sub>2</sub> SO <sub>4</sub>	✓		WC126 10 10	4/15				
<4	NaHSO <sub>4</sub>								
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)					
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-						
	Zn Aceta	-	-						
	HCl	*	*	4112120	3/15				

Yes = All samples OK  
No = Samples were preserved at lab as listed  
PM OK to Adjust: \_\_\_\_\_

Bottle lot numbers: 4-002-003  
Other Comments:

0B25-DO (46) is labeled 0B25-DO (67) → sample labels do not match CDC

PC Secondary Review: SMJ 4/22/14  
G:\SMODOCS\Cooler Receipt.6.doc .11/6/12

\*significant air bubbles: VOA > 5-6 mm ; WC > 1 in. diameter



## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150148.05  
**Prepared By:** Dale Dailey **Date :** 6/2/2014  
**Matrix:** Groundwater  
**Analyte Group :** Volatile Organics **Analytical Method :** SW-846 8260C  
Metals 6010 C  
Chloride SM 4500-CL-E  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1402638  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/8, 4/10, 4/11/14	SW-846 8260C	14 days	10 days	4/21, 4/22/14
4/11/14	6010 C	180 Days	180 Days	4/16, 4/17/14
4/11/14	SM 4500-CL-E	28 Days	28 Days	4/22/14

**Sample temperature within QC limits:** Cooler 1: No, 13.1 C  
Cooler 2: Yes, 5.7 C

### Surrogate Recovery

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

### MS/MSD

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

### Laboratory Control Samples

Are all laboratory control sample recoveries within the QC limits ? No

If no, list sample ID where range was exceeded: See Notes

**Equipment Field Blank ID :** EB-4

**Trip Blank ID :** TB-3

**Method Blank:** SW-846 8260C 4/21, 4/22/14

6010 C 4/16, 4/17/14

SM 4500-CL-E 4/22/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

### Notes:

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples AP21 (23) AP-27-DO (56), BR5 ZONE 2, BR5 ZONE 3, CL9-BR ZONE 2 AND BR6 ZONE 2 were re-analyzed at larger dilutions to bring the target analytes within the calibration range of the method. Both dilutions were reported with analytes over the range flagged with an "E" and the diluted analytes flagged with a "D"

All LCS and LCSD recoveries were within QC limits except Bromomethane was outside limits in batch 389045 the 4/21/14 LCS. All RPD's were acceptable except Acetone, which was outside limits in batches 389046 and 389330 on 4/22/14. All outlying QC has been flagged with an "\*\*\*". The data was not impacted since the analytical results were non-detect for these analytes in these batches.

**Reviewed By:** Pernilla Haley, 6/9/14



April 25, 2014

Service Request No: R1402638

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150148-05000000**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory between April 11, 2014 and April 14, 2014. For your reference, these analyses have been assigned our service request number **R1402638**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

Janice Jaeger  
Client Services Manager

Page 1 of 76

CC: Pemilla Haley

## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Water

**Service Request No.:** R1402638  
**Project Number:** 150148-05000000  
**Date Received:** 04/14/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Water samples were collected on 04/08-11/14 and received at ALS in good condition at cooler temperatures of 5.5 – 13.1 °C as noted on the cooler receipt and preservation check form. The client was notified of the out of temperature cooler and the samples were analyzed. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #.

### Volatile Organics

Twenty nine water samples were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples AO-21 (23'), AP-27-DO (56'), BR5 ZONE 2, BR5 ZONE 3, CL9-BR ZONE 2 and BR6 ZONE 2 were re-analyzed at larger dilutions to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D".

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Surrogate Standard recoveries were within QC limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits except Bromomethane was outside limits high on the 04/21/14 LCS. All RPD's were acceptable except Acetone was outside limits on 04/22/14 RPD's. All outlying QC has been flagged with an "\*\*\*". No data was affected.

All samples were analyzed within the required holding time of 14 days.

### Inorganic Analyses

Seven water samples were analyzed for Chloride by SM3400-CI-E and Soluble Iron and Manganese by method 6010C. Soluble Metals were filtered in the field.

The initial and continuing calibration criteria were met for all analytes.

All Blank Spike (LCS) recoveries were within QC limits.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150148

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1402638-001-029

 Matrices: Groundwater/Surface Water  Soil/Sediment Drinking Water Air Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X Yes	No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X Yes	No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X Yes	No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X Yes	No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes	No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X Yes	No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X Yes	No <sup>1</sup>
----------	---	-------	-----------------

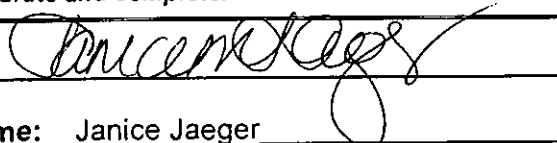
**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X Yes	No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes	X No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:



 Position: Client Services  
Manager

Printed Name: Janice Jaeger

Date: 04/29/14

00003

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402638

<u>Lab ID</u>	<u>Client ID</u>
R1402638-001	STRHA-7A
R1402638-002	STRHA-7B
R1402638-003	OB24-S
R1402638-004	MW-33B
R1402638-005	TB-3
R1402638-006	AP-19 (25')
R1402638-007	AP-20 (16')
R1402638-008	AP-21 (23')
R1402638-009	AP-22 (20')
R1402638-010	B-2 (11')
R1402638-011	OB38-DO (44')
R1402638-012	AP-27-DO (56')
R1402638-013	EB-4
R1402638-014	OB27-BR (74')
R1402638-015	CL-11S (24')
R1402638-016	CL-11DO (48')
R1402638-017	OB43-S (15')
R1402638-018	BR5 ZONE 1
R1402638-019	BR5 ZONE 2
R1402638-020	BR5 ZONE 3
R1402638-021	CL9-BR ZONE 1
R1402638-022	CL9-BR ZONE 2
R1402638-023	CL9-BR ZONE 3
R1402638-024	BR6 ZONE 1
R1402638-025	BR6 ZONE 2
R1402638-026	BR6 ZONE 3
R1402638-027	CL8-BR ZONE 1
R1402638-028	CL8-BR ZONE 2
R1402638-029	CL8-BR ZONE 3

00004

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.



# INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

## Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	3010A
200.8	ILM05.3
6010C	3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

## Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3010A
6010 SPLP (1312) extract	3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

RIGHT SOLUTIONS | RIGHT PARTNER



*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

A handwritten signature in cursive script, reading "Oscar C. Jacobo".

*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014



COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CaCO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
CHLORIDE			SM 4500-CL-E	
CHLORIDE			EPA 300.0	
FLUORIDE			EPA 300.0	
SULFATE			EPA 300.0	
AMMONIA-N			EPA 350.1	
NITRATE-N			EPA 300.0	
NITRATE-N			EPA 353.2	
KJELDAHL-N			EPA 351.2	
ORTHOPHOSPHATE			EPA 365.1	
PHOSPHORUS, TOTAL			EPA 365.1	
CHEMICAL OXYGEN DEMAND			EPA 410.4	
BIOCHEMICAL OXYGEN DEMAND			SM 5210B	
TOTAL ORGANIC CARBON			SM 5310C	
CYANIDE, TOTAL			EPA 335.4	
NON-FILTERABLE RESIDUE			SM 2540D	
OIL AND GREASE			EPA 1664	
PHENOLICS, TOTAL			EPA 420.4	
VOLATILE HALOCARBONS			EPA 601	
VOLATILE HALOCARBONS			EPA 624	
VOLATILE AROMATICS			EPA 602	
VOLATILE AROMATICS			EPA 624	
SVOC-ACID EXTRACTABLES			EPA 625	
SVOC-BASE/NEUTRAL EXTRACTABLES			EPA 625	
POLYCHLORINATED BIPHENYLS (WATEF			EPA 608	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/10/14 1300  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 17:39

Sample Name: STRHA-7A  
 Lab Code: R1402638-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\042114\F7742.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	8.8		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	9.7		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/21/14 17:39	
Dibromofluoromethane	98	70-130	4/21/14 17:39	
Toluene-d8	97	70-130	4/21/14 17:39	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/10/14 1330  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 18:09

Sample Name: STRHA-7B  
 Lab Code: R1402638-002

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7743.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	9.9		2.0	
79-01-6	Trichloroethene (TCE)	42		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	13		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 18:09	
Dibromofluoromethane	96	70-130	4/21/14 18:09	
Toluene-d8	91	70-130	4/21/14 18:09	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/10/14 1400  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 18:39

Sample Name: OB24-S  
 Lab Code: R1402638-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7744.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	70-130	4/21/14 18:39	
Dibromofluoromethane	98	70-130	4/21/14 18:39	
Toluene-d8	99	70-130	4/21/14 18:39	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0630  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 19:10

Sample Name: MW-33B  
 Lab Code: R1402638-004

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\042114\F7745.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0 U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/21/14 19:10	
Dibromofluoromethane	99	70-130	4/21/14 19:10	
Toluene-d8	99	70-130	4/21/14 19:10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0650  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 03:17

Sample Name: TB-3  
 Lab Code: R1402638-005

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7761.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 03:17	
Dibromofluoromethane	97	70-130	4/22/14 03:17	
Toluene-d8	97	70-130	4/22/14 03:17	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP-19 (25')  
 Lab Code: R1402638-006

Service Request: R1402638  
 Date Collected: 4/11/14 0715  
 Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	25.4	mg/L	1.0	1	NA	4/22/14 13:12	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP-19 (25")  
 Lab Code: R1402638-006

Service Request: R1402638  
 Date Collected: 4/11/14 0715  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 01:16	
Manganese, Dissolved	6010C	1080		µg/L	10	1	4/15/14	4/17/14 15:46	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0715  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 19:40

Sample Name: AP-19 (25')  
 Lab Code: R1402638-006

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7746.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 2

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	4.0	U	4.0	
79-34-5	1,1,2,2-Tetrachloroethane	4.0	U	4.0	
79-00-5	1,1,2-Trichloroethane	4.0	U	4.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4.0	U	4.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	4.0	U	4.0	
107-06-2	1,2-Dichloroethane	4.0	U	4.0	
78-87-5	1,2-Dichloropropane	4.0	U	4.0	
67-64-1	Acetone	20	U	20	
75-27-4	Bromodichloromethane	4.0	U	4.0	
75-25-2	Bromoform	4.0	U	4.0	
74-83-9	Bromomethane	4.0	U	4.0	
56-23-5	Carbon Tetrachloride	4.0	U	4.0	
108-90-7	Chlorobenzene	4.0	U	4.0	
75-00-3	Chloroethane	4.0	U	4.0	
67-66-3	Chloroform	4.0	U	4.0	
74-87-3	Chloromethane	4.0	U	4.0	
124-48-1	Dibromochloromethane	4.0	U	4.0	
75-09-2	Methylene Chloride	4.0	U	4.0	
127-18-4	Tetrachloroethene (PCE)	390		4.0	
79-01-6	Trichloroethene (TCE)	77		4.0	
75-69-4	Trichlorofluoromethane (CFC 11)	4.0	U	4.0	
75-01-4	Vinyl Chloride	4.0	U	4.0	
156-59-2	cis-1,2-Dichloroethene	81		4.0	
10061-01-5	cis-1,3-Dichloropropene	4.0	U	4.0	
156-60-5	trans-1,2-Dichloroethene	4.0	U	4.0	
10061-02-6	trans-1,3-Dichloropropene	4.0	U	4.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 19:40	
Dibromofluoromethane	100	70-130	4/21/14 19:40	
Toluene-d8	99	70-130	4/21/14 19:40	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP-20 (16')  
Lab Code: R1402638-007

Service Request: R1402638  
Date Collected: 4/11/14 0800  
Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	14.1	mg/L	1.0	1	NA	4/22/14 13:13	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP-20 (16')  
 Lab Code: R1402638-007

Service Request: R1402638  
 Date Collected: 4/11/14 0800  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 01:35	
Manganese, Dissolved	6010C	3980		µg/L	10	1	4/15/14	4/17/14 15:52	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0800  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 17:37

Sample Name: AP-20 (16')  
 Lab Code: R1402638-007

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7789.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10	U	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	50	U	50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	550		10	
79-01-6	Trichloroethene (TCE)	69		10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	10	U	10	
156-59-2	cis-1,2-Dichloroethene	97		10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/22/14 17:37	
Dibromofluoromethane	100	70-130	4/22/14 17:37	
Toluene-d8	99	70-130	4/22/14 17:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP-21 (23')  
Lab Code: R1402638-008

Service Request: R1402638  
Date Collected: 4/11/14 0900  
Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	227	mg/L	4.0	4	NA	4/22/14 13:14	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP-21 (23')  
 Lab Code: R1402638-008

Service Request: R1402638  
 Date Collected: 4/11/14 0900  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 01:41	
Manganese, Dissolved	6010C	513		µg/L	10	1	4/15/14	4/17/14 15:58	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0900  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 20:41

Sample Name: AP-21 (23')  
 Lab Code: R1402638-008

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7748.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10 U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10 U	10	
79-00-5	1,1,2-Trichloroethane	10 U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	110	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	35	10	
107-06-2	1,2-Dichloroethane	10 U	10	
78-87-5	1,2-Dichloropropane	10 U	10	
67-64-1	Acetone	50 U	50	
75-27-4	Bromodichloromethane	10 U	10	
75-25-2	Bromoform	10 U	10	
74-83-9	Bromomethane	10 U	10	
56-23-5	Carbon Tetrachloride	10 U	10	
108-90-7	Chlorobenzene	10 U	10	
75-00-3	Chloroethane	10 U	10	
67-66-3	Chloroform	10 U	10	
74-87-3	Chloromethane	10 U	10	
124-48-1	Dibromochloromethane	10 U	10	
75-09-2	Methylene Chloride	10 U	10	
127-18-4	Tetrachloroethene (PCE)	830	10	
79-01-6	Trichloroethene (TCE)	470	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10 U	10	
75-01-4	Vinyl Chloride	10 U	10	
156-59-2	cis-1,2-Dichloroethene	5300 E	10	
10061-01-5	cis-1,3-Dichloropropene	10 U	10	
156-60-5	trans-1,2-Dichloroethene	10 U	10	
10061-02-6	trans-1,3-Dichloropropene	10 U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/21/14 20:41	
Dibromofluoromethane	99	70-130	4/21/14 20:41	
Toluene-d8	98	70-130	4/21/14 20:41	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0900  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 18:07

Sample Name: AP-21 (23')  
 Lab Code: R1402638-008  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7790.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 50

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	100	U	100	
79-34-5	1,1,2,2-Tetrachloroethane	100	U	100	
79-00-5	1,1,2-Trichloroethane	100	U	100	
75-34-3	1,1-Dichloroethane (1,1-DCA)	100	D	100	
75-35-4	1,1-Dichloroethene (1,1-DCE)	100	U	100	
107-06-2	1,2-Dichloroethane	100	U	100	
78-87-5	1,2-Dichloropropane	100	U	100	
67-64-1	Acetone	500	U	500	
75-27-4	Bromodichloromethane	100	U	100	
75-25-2	Bromoform	100	U	100	
74-83-9	Bromomethane	100	U	100	
56-23-5	Carbon Tetrachloride	100	U	100	
108-90-7	Chlorobenzene	100	U	100	
75-00-3	Chloroethane	100	U	100	
67-66-3	Chloroform	100	U	100	
74-87-3	Chloromethane	100	U	100	
124-48-1	Dibromochloromethane	100	U	100	
75-09-2	Methylene Chloride	100	U	100	
127-18-4	Tetrachloroethene (PCE)	760	D	100	
79-01-6	Trichloroethene (TCE)	420	D	100	
75-69-4	Trichlorofluoromethane (CFC 11)	100	U	100	
75-01-4	Vinyl Chloride	100	U	100	
156-59-2	cis-1,2-Dichloroethene	4900	D	100	
10061-01-5	cis-1,3-Dichloropropene	100	U	100	
156-60-5	trans-1,2-Dichloroethene	100	U	100	
10061-02-6	trans-1,3-Dichloropropene	100	U	100	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 18:07	
Dibromofluoromethane	99	70-130	4/22/14 18:07	
Toluene-d8	98	70-130	4/22/14 18:07	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP-22 (20')  
Lab Code: R1402638-009

Service Request: R1402638  
Date Collected: 4/11/14 0930  
Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	919	mg/L	20	20	NA	4/22/14 13:15	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP-22 (20')  
Lab Code: R1402638-009

Service Request: R1402638  
Date Collected: 4/11/14 0930  
Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	260		µg/L	100	1	4/15/14	4/17/14 01:48	
Manganese, Dissolved	6010C	50900		µg/L	200	20	4/15/14	4/17/14 16:05	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0930  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 21:11

Sample Name: AP-22 (20')  
 Lab Code: R1402638-009

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7749.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.4		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	5.0		2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	25		2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 21:11	
Dibromofluoromethane	99	70-130	4/21/14 21:11	
Toluene-d8	98	70-130	4/21/14 21:11	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1000  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 18:38

Sample Name: B-2 (11')  
 Lab Code: R1402638-010

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7791.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 2.5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.0	U	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
67-64-1	Acetone	25	U	25	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-09-2	Methylene Chloride	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	5.0	U	5.0	
79-01-6	Trichloroethene (TCE)	74		5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	15		5.0	
156-59-2	cis-1,2-Dichloroethene	330		5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0	U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 18:38	
Dibromofluoromethane	99	70-130	4/22/14 18:38	
Toluene-d8	98	70-130	4/22/14 18:38	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1030  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 19:08

Sample Name: OB38-DO (44')  
 Lab Code: R1402638-011

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7792.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	57		2.0	
79-01-6	Trichloroethene (TCE)	99		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	45		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	3.4		2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 19:08	
Dibromofluoromethane	99	70-130	4/22/14 19:08	
Toluene-d8	98	70-130	4/22/14 19:08	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP-27-DO (56')  
Lab Code: R1402638-012

Service Request: R1402638  
Date Collected: 4/11/14 1100  
Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	342	mg/L	4.0	4	NA	4/22/14 13:16	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP-27-DO (56')  
 Lab Code: R1402638-012

Service Request: R1402638  
 Date Collected: 4/11/14 1100  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 01:55	
Manganese, Dissolved	6010C	194		µg/L	10	1	4/15/14	4/17/14 16:11	



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1100  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 22:43

Sample Name: AP-27-DO (56')  
 Lab Code: R1402638-012

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7752.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	3.0		2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	270	E	2.0	
79-01-6	Trichloroethene (TCE)	4200	E	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.3		2.0	
156-59-2	cis-1,2-Dichloroethene	72		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	23		2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 22:43	
Dibromofluoromethane	98	70-130	4/21/14 22:43	
Toluene-d8	100	70-130	4/21/14 22:43	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1100  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 19:39

Sample Name: AP-27-DO (56')  
 Lab Code: R1402638-012  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7793.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 100

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	200	U	200	
79-34-5	1,1,2,2-Tetrachloroethane	200	U	200	
79-00-5	1,1,2-Trichloroethane	200	U	200	
75-34-3	1,1-Dichloroethane (1,1-DCA)	200	U	200	
75-35-4	1,1-Dichloroethene (1,1-DCE)	200	U	200	
107-06-2	1,2-Dichloroethane	200	U	200	
78-87-5	1,2-Dichloropropane	200	U	200	
67-64-1	Acetone	1000	U	1000	
75-27-4	Bromodichloromethane	200	U	200	
75-25-2	Bromoform	200	U	200	
74-83-9	Bromomethane	200	U	200	
56-23-5	Carbon Tetrachloride	200	U	200	
108-90-7	Chlorobenzene	200	U	200	
75-00-3	Chloroethane	200	U	200	
67-66-3	Chloroform	200	U	200	
74-87-3	Chloromethane	200	U	200	
124-48-1	Dibromochloromethane	200	U	200	
75-09-2	Methylene Chloride	200	U	200	
127-18-4	Tetrachloroethene (PCE)	240	D	200	
79-01-6	Trichloroethene (TCE)	11000	D	200	
75-69-4	Trichlorofluoromethane (CFC 11)	200	U	200	
75-01-4	Vinyl Chloride	200	U	200	
156-59-2	cis-1,2-Dichloroethene	200	U	200	
10061-01-5	cis-1,3-Dichloropropene	200	U	200	
156-60-5	trans-1,2-Dichloroethene	200	U	200	
10061-02-6	trans-1,3-Dichloropropene	200	U	200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/22/14 19:39	
Dibromofluoromethane	101	70-130	4/22/14 19:39	
Toluene-d8	100	70-130	4/22/14 19:39	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1130  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 03:47

Sample Name: EB-4  
 Lab Code: R1402638-013

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7762.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/22/14 03:47	
Dibromofluoromethane	98	70-130	4/22/14 03:47	
Toluene-d8	98	70-130	4/22/14 03:47	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: OB27-BR (74')  
 Lab Code: R1402638-014

Service Request: R1402638  
 Date Collected: 4/11/14 1200  
 Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	36.6	mg/L	1.0	1	NA	4/22/14 13:16	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: OB27-BR (74')  
 Lab Code: R1402638-014

Service Request: R1402638  
 Date Collected: 4/11/14 1200  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	760	µg/L	100	1	4/15/14	4/17/14 02:01	
Manganese, Dissolved	6010C	370000	µg/L	2000	200	4/15/14	4/17/14 16:18	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1200  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 20:10

Sample Name: OB27-BR (74')  
 Lab Code: R1402638-014

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7794.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	14		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	57		2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/22/14 20:10	
Dibromofluoromethane	101	70-130	4/22/14 20:10	
Toluene-d8	100	70-130	4/22/14 20:10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1230  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 04:18

Sample Name: CL-11S (24')  
 Lab Code: R1402638-015

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7763.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	4.9		2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	10		2.0	
79-01-6	Trichloroethene (TCE)	5.2		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 04:18	
Dibromofluoromethane	100	70-130	4/22/14 04:18	
Toluene-d8	99	70-130	4/22/14 04:18	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1300  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 04:48

Sample Name: CL-11DO (48')  
 Lab Code: R1402638-016

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7764.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.8		2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.0		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	6.3		2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	3.7		2.0	
79-01-6	Trichloroethene (TCE)	25		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 04:48	
Dibromofluoromethane	98	70-130	4/22/14 04:48	
Toluene-d8	99	70-130	4/22/14 04:48	



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/ 8/14 1300  
 Date Received: 4/11/14  
 Date Analyzed: 4/22/14 05:19

Sample Name: OB43-S (15')  
 Lab Code: R1402638-017

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\042114\F7765.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	3.7		2.0	
79-01-6	Trichloroethene (TCE)	4.0		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 05:19	
Dibromofluoromethane	98	70-130	4/22/14 05:19	
Toluene-d8	99	70-130	4/22/14 05:19	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0830  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 05:49

Sample Name: BR5 ZONE 1  
 Lab Code: R1402638-018

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7766.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	9.1		2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	60		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	72		2.0	
156-59-2	cis-1,2-Dichloroethene	90		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	70-130	4/22/14 05:49	
Dibromofluoromethane	100	70-130	4/22/14 05:49	
Toluene-d8	100	70-130	4/22/14 05:49	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0900  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 06:20

Sample Name: BR5 ZONE 2  
 Lab Code: R1402638-019

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7767.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	18		2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	200	E	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	300	E	2.0	
156-59-2	cis-1,2-Dichloroethene	670	E	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	3.5		2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 06:20	
Dibromofluoromethane	99	70-130	4/22/14 06:20	
Toluene-d8	99	70-130	4/22/14 06:20	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0900  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 20:40

Sample Name: BR5 ZONE 2  
 Lab Code: R1402638-019  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7795.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	14	D	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	50	U	50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	10	U	10	
79-01-6	Trichloroethene (TCE)	170	D	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	280	D	10	
156-59-2	cis-1,2-Dichloroethene	630	D	10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/22/14 20:40	
Dibromofluoromethane	102	70-130	4/22/14 20:40	
Toluene-d8	100	70-130	4/22/14 20:40	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: BRS ZONE 3  
Lab Code: R1402638-020

Service Request: R1402638  
Date Collected: 4/11/14 0800  
Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	136	mg/L	2.0	2	NA	4/22/14 13:18	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: BR5 ZONE 3  
 Lab Code: R1402638-020

Service Request: R1402638  
 Date Collected: 4/11/14 0800  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 02:07	
Manganese, Dissolved	6010C	3100		µg/L	10	1	4/15/14	4/17/14 16:24	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0800  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 06:50

Sample Name: BR5 ZONE 3  
 Lab Code: R1402638-020

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7768.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.7		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.7		2.0	
79-01-6	Trichloroethene (TCE)	14		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	48		2.0	
156-59-2	cis-1,2-Dichloroethene	260	E	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 06:50	
Dibromofluoromethane	101	70-130	4/22/14 06:50	
Toluene-d8	98	70-130	4/22/14 06:50	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0800  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 21:10

Sample Name: BR5 ZONE 3  
 Lab Code: R1402638-020  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7796.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 2.5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.6	D	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
67-64-1	Acetone	25	U	25	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-09-2	Methylene Chloride	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	5.0	U	5.0	
79-01-6	Trichloroethene (TCE)	12	D	5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	42	D	5.0	
156-59-2	cis-1,2-Dichloroethene	230	D	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0	U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 21:10	
Dibromofluoromethane	100	70-130	4/22/14 21:10	
Toluene-d8	100	70-130	4/22/14 21:10	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0930  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 07:21

Sample Name: CL9-BR ZONE 1  
 Lab Code: R1402638-021

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\042114\F7769.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 50

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	100	U	100	
79-34-5	1,1,2,2-Tetrachloroethane	100	U	100	
79-00-5	1,1,2-Trichloroethane	100	U	100	
75-34-3	1,1-Dichloroethane (1,1-DCA)	100	U	100	
75-35-4	1,1-Dichloroethene (1,1-DCE)	100	U	100	
107-06-2	1,2-Dichloroethane	100	U	100	
78-87-5	1,2-Dichloropropane	100	U	100	
67-64-1	Acetone	500	U	500	
75-27-4	Bromodichloromethane	100	U	100	
75-25-2	Bromoform	100	U	100	
74-83-9	Bromomethane	100	U	100	
56-23-5	Carbon Tetrachloride	100	U	100	
108-90-7	Chlorobenzene	100	U	100	
75-00-3	Chloroethane	100	U	100	
67-66-3	Chloroform	100	U	100	
74-87-3	Chloromethane	100	U	100	
124-48-1	Dibromochloromethane	100	U	100	
75-09-2	Methylene Chloride	100	U	100	
127-18-4	Tetrachloroethene (PCE)	110		100	
79-01-6	Trichloroethene (TCE)	230		100	
75-69-4	Trichlorofluoromethane (CFC 11)	100	U	100	
75-01-4	Vinyl Chloride	100	U	100	
156-59-2	cis-1,2-Dichloroethene	4900		100	
10061-01-5	cis-1,3-Dichloropropene	100	U	100	
156-60-5	trans-1,2-Dichloroethene	100	U	100	
10061-02-6	trans-1,3-Dichloropropene	100	U	100	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 07:21	
Dibromofluoromethane	98	70-130	4/22/14 07:21	
Toluene-d8	99	70-130	4/22/14 07:21	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1000  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 07:51

Sample Name: CL9-BR ZONE 2  
 Lab Code: R1402638-022

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7770.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 25

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	50 U	50	
79-34-5	1,1,2,2-Tetrachloroethane	50 U	50	
79-00-5	1,1,2-Trichloroethane	50 U	50	
75-34-3	1,1-Dichloroethane (1,1-DCA)	50 U	50	
75-35-4	1,1-Dichloroethene (1,1-DCE)	50 U	50	
107-06-2	1,2-Dichloroethane	50 U	50	
78-87-5	1,2-Dichloropropane	50 U	50	
67-64-1	Acetone	250 U	250	
75-27-4	Bromodichloromethane	50 U	50	
75-25-2	Bromoform	50 U	50	
74-83-9	Bromomethane	50 U	50	
56-23-5	Carbon Tetrachloride	50 U	50	
108-90-7	Chlorobenzene	50 U	50	
75-00-3	Chloroethane	50 U	50	
67-66-3	Chloroform	50 U	50	
74-87-3	Chloromethane	50 U	50	
124-48-1	Dibromochloromethane	50 U	50	
75-09-2	Methylene Chloride	50 U	50	
127-18-4	Tetrachloroethene (PCE)	250	50	
79-01-6	Trichloroethene (TCE)	400	50	
75-69-4	Trichlorofluoromethane (CFC 11)	50 U	50	
75-01-4	Vinyl Chloride	85	50	
156-59-2	cis-1,2-Dichloroethene	7400 E	50	
10061-01-5	cis-1,3-Dichloropropene	50 U	50	
156-60-5	trans-1,2-Dichloroethene	50 U	50	
10061-02-6	trans-1,3-Dichloropropene	50 U	50	

Surrogate Name	%Rec	Control Limits	Date Analyzed Q
4-Bromofluorobenzene	93	70-130	4/22/14 07:51
Dibromofluoromethane	100	70-130	4/22/14 07:51
Toluene-d8	99	70-130	4/22/14 07:51

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1000  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 21:41

Sample Name: CL9-BR ZONE 2  
 Lab Code: R1402638-022  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7797.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 100

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	200	U	200	
79-34-5	1,1,2,2-Tetrachloroethane	200	U	200	
79-00-5	1,1,2-Trichloroethane	200	U	200	
75-34-3	1,1-Dichloroethane (1,1-DCA)	200	U	200	
75-35-4	1,1-Dichloroethene (1,1-DCE)	200	U	200	
107-06-2	1,2-Dichloroethane	200	U	200	
78-87-5	1,2-Dichloropropane	200	U	200	
67-64-1	Acetone	1000	U	1000	
75-27-4	Bromodichloromethane	200	U	200	
75-25-2	Bromoform	200	U	200	
74-83-9	Bromomethane	200	U	200	
56-23-5	Carbon Tetrachloride	200	U	200	
108-90-7	Chlorobenzene	200	U	200	
75-00-3	Chloroethane	200	U	200	
67-66-3	Chloroform	200	U	200	
74-87-3	Chloromethane	200	U	200	
124-48-1	Dibromochloromethane	200	U	200	
75-09-2	Methylene Chloride	200	U	200	
127-18-4	Tetrachloroethene (PCE)	230	D	200	
79-01-6	Trichloroethene (TCE)	400	D	200	
75-69-4	Trichlorofluoromethane (CFC 11)	200	U	200	
75-01-4	Vinyl Chloride	200	U	200	
156-59-2	cis-1,2-Dichloroethene	6700	D	200	
10061-01-5	cis-1,3-Dichloropropene	200	U	200	
156-60-5	trans-1,2-Dichloroethene	200	U	200	
10061-02-6	trans-1,3-Dichloropropene	200	U	200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 21:41	
Dibromofluoromethane	100	70-130	4/22/14 21:41	
Toluene-d8	98	70-130	4/22/14 21:41	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1030  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 22:12

Sample Name: CL9-BR ZONE 3  
 Lab Code: R1402638-023

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\042214\F7798.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 10

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	20	U	20	
79-34-5	1,1,2,2-Tetrachloroethane	20	U	20	
79-00-5	1,1,2-Trichloroethane	20	U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20	U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	20	U	20	
107-06-2	1,2-Dichloroethane	20	U	20	
78-87-5	1,2-Dichloropropane	20	U	20	
67-64-1	Acetone	100	U	100	
75-27-4	Bromodichloromethane	20	U	20	
75-25-2	Bromoform	20	U	20	
74-83-9	Bromomethane	20	U	20	
56-23-5	Carbon Tetrachloride	20	U	20	
108-90-7	Chlorobenzene	20	U	20	
75-00-3	Chloroethane	20	U	20	
67-66-3	Chloroform	20	U	20	
74-87-3	Chloromethane	20	U	20	
124-48-1	Dibromochloromethane	20	U	20	
75-09-2	Methylene Chloride	20	U	20	
127-18-4	Tetrachloroethene (PCE)	66		20	
79-01-6	Trichloroethene (TCE)	71		20	
75-69-4	Trichlorofluoromethane (CFC 11)	20	U	20	
75-01-4	Vinyl Chloride	52		20	
156-59-2	cis-1,2-Dichloroethene	1000		20	
10061-01-5	cis-1,3-Dichloropropene	20	U	20	
156-60-5	trans-1,2-Dichloroethene	20	U	20	
10061-02-6	trans-1,3-Dichloropropene	20	U	20	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	70-130	4/22/14 22:12	
Dibromofluoromethane	102	70-130	4/22/14 22:12	
Toluene-d8	93	70-130	4/22/14 22:12	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1200  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 08:52

Sample Name: BR6 ZONE 1  
 Lab Code: R1402638-024

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\msvoa10\data\042114\F7772.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	4.0		2.0	
156-59-2	cis-1,2-Dichloroethene	12		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 08:52	
Dibromofluoromethane	101	70-130	4/22/14 08:52	
Toluene-d8	98	70-130	4/22/14 08:52	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1230  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 09:22

Sample Name: BR6 ZONE 2  
 Lab Code: R1402638-025

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7773.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	3.1	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	23	2.0	
156-59-2	cis-1,2-Dichloroethene	390 E	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 09:22	
Dibromofluoromethane	100	70-130	4/22/14 09:22	
Toluene-d8	97	70-130	4/22/14 09:22	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1230  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 22:42

Sample Name: BR6 ZONE 2  
 Lab Code: R1402638-025  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7799.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10 U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10 U	10	
79-00-5	1,1,2-Trichloroethane	10 U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10 U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10 U	10	
107-06-2	1,2-Dichloroethane	10 U	10	
78-87-5	1,2-Dichloropropane	10 U	10	
67-64-1	Acetone	50 U	50	
75-27-4	Bromodichloromethane	10 U	10	
75-25-2	Bromoform	10 U	10	
74-83-9	Bromomethane	10 U	10	
56-23-5	Carbon Tetrachloride	10 U	10	
108-90-7	Chlorobenzene	10 U	10	
75-00-3	Chloroethane	10 U	10	
67-66-3	Chloroform	10 U	10	
74-87-3	Chloromethane	10 U	10	
124-48-1	Dibromochloromethane	10 U	10	
75-09-2	Methylene Chloride	10 U	10	
127-18-4	Tetrachloroethene (PCE)	10 U	10	
79-01-6	Trichloroethene (TCE)	10 U	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10 U	10	
75-01-4	Vinyl Chloride	22 D	10	
156-59-2	cis-1,2-Dichloroethene	350 D	10	
10061-01-5	cis-1,3-Dichloropropene	10 U	10	
156-60-5	trans-1,2-Dichloroethene	10 U	10	
10061-02-6	trans-1,3-Dichloropropene	10 U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/22/14 22:42	
Dibromofluoromethane	102	70-130	4/22/14 22:42	
Toluene-d8	99	70-130	4/22/14 22:42	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1300  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 09:53

Sample Name: BR6 ZONE 3  
 Lab Code: R1402638-026

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7774.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.1		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	78		2.0	
156-59-2	cis-1,2-Dichloroethene	170		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 09:53	
Dibromofluoromethane	101	70-130	4/22/14 09:53	
Toluene-d8	96	70-130	4/22/14 09:53	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1330  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 15:26

Sample Name: CL8-BR ZONE 1  
 Lab Code: R1402638-027

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\042214\J5000.D\

Analysis Lot: 389276  
 Instrument Name: R-MS-12  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10	U	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	95		50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	10	U	10	
79-01-6	Trichloroethene (TCE)	10	U	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	10	U	10	
156-59-2	cis-1,2-Dichloroethene	10	U	10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/22/14 15:26	
Dibromofluoromethane	103	70-130	4/22/14 15:26	
Toluene-d8	97	70-130	4/22/14 15:26	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1400  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 10:54

Sample Name: CL8-BR ZONE 2  
 Lab Code: R1402638-028

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\msvoa10\data\042114\F7776.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 10:54	
Dibromofluoromethane	101	70-130	4/22/14 10:54	
Toluene-d8	97	70-130	4/22/14 10:54	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1430  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 11:24

Sample Name: CL8-BR ZONE 3  
 Lab Code: R1402638-029

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7777.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 11:24	
Dibromofluoromethane	99	70-130	4/22/14 11:24	
Toluene-d8	97	70-130	4/22/14 11:24	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: Method Blank  
Lab Code: R1402638-MB

Service Request: R1402638  
Date Collected: NA  
Date Received: NA  
Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	1.0	U	mg/L	1.0	1	NA	4/22/14 13:02	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: Method Blank  
 Lab Code: R1402638-MB

Service Request: R1402638  
 Date Collected: NA  
 Date Received: NA

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100 U	µg/L	100	1	4/15/14	4/16/14 23:10	
Manganese, Dissolved	6010C	10 U	µg/L	10	1	4/15/14	4/17/14 14:25	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/21/14 14:37

Sample Name: Method Blank  
 Lab Code: RQ1404008-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7736.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 14:37	
Dibromofluoromethane	99	70-130	4/21/14 14:37	
Toluene-d8	100	70-130	4/21/14 14:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/22/14 02:47

Sample Name: Method Blank  
 Lab Code: RQ1404087-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7760.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 02:47	
Dibromofluoromethane	99	70-130	4/22/14 02:47	
Toluene-d8	98	70-130	4/22/14 02:47	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/22/14 14:22

Sample Name: Method Blank  
 Lab Code: RQ1403997-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\042214J4998.D\

Analysis Lot: 389276  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	4/22/14 14:22	
Dibromofluoromethane	100	70-130	4/22/14 14:22	
Toluene-d8	98	70-130	4/22/14 14:22	





Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/22/14 16:04

Sample Name: Method Blank  
 Lab Code: RQ1404075-02

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvov10\data\042214\F7786.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 16:04	
Dibromofluoromethane	98	70-130	4/22/14 16:04	
Toluene-d8	97	70-130	4/22/14 16:04	

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 General Chemistry Parameters

Units: mg/L  
 Basis: NA

Analyte Name	Method	Lab Control Sample R1402638-LCS			% Rec Limits
		Result	Spike Amount	% Rec	
Chloride	SM 4500-Cl-E-1997(20)	23.8	25.0	95	86 - 110

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Analyzed: 4/16/14 -  
 4/17/14

Lab Control Sample Summary  
 Inorganic Parameters

Units: µg/L  
 Basis: NA

Analyte Name	Method	Lab Control Sample R1402638-LCS			% Rec Limits
		Result	Spike Amount	% Rec	
Iron, Dissolved	6010C	1040	1000	104	80 - 120
Manganese, Dissolved	6010C	489	500	98	80 - 120

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



**Client:** CB&I  
**Project:** Varian Beverly/150148-05000000  
**Sample Matrix:** Water

**Service Request:** R1402638  
**Date Analyzed:** 4/21/14

**Lab Control Sample Summary**  
**Volatile Organic Compounds by GC/MS**

**Analytical Method:** 8260C

**Units:** µg/L  
**Basis:** NA

**Analysis Lot:** 389045

Analyte Name	Lab Control Sample RQ1404008-02			Duplicate Lab Control Sample RQ1404008-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	19.7	20.0	99	17.2	20.0	86	70 - 130	14	20
1,1,2,2-Tetrachloroethane	20.1	20.0	100	19.0	20.0	95	70 - 130	6	20
1,1,2-Trichloroethane	21.2	20.0	106	19.0	20.0	95	70 - 130	11	20
1,1-Dichloroethane (1,1-DCA)	21.3	20.0	106	18.9	20.0	95	70 - 130	12	20
1,1-Dichloroethene (1,1-DCE)	23.4	20.0	117	20.3	20.0	102	70 - 130	14	20
1,2-Dichloroethane	18.8	20.0	94	16.9	20.0	84	70 - 130	11	20
1,2-Dichloropropane	22.2	20.0	111	19.3	20.0	97	70 - 130	14	20
Acetone	21.6	20.0	108	22.0	20.0	110	40 - 160	2	20
Bromodichloromethane	20.9	20.0	105	18.6	20.0	93	70 - 130	12	20
Bromoform	19.9	20.0	100	18.5	20.0	93	70 - 130	7	20
Bromomethane	32.7	20.0	163 *	28.4	20.0	142	40 - 160	14	20
Carbon Tetrachloride	19.8	20.0	99	17.7	20.0	89	70 - 130	11	20
Chlorobenzene	21.0	20.0	105	18.6	20.0	93	70 - 130	12	20
Chloroethane	20.3	20.0	101	18.2	20.0	91	70 - 130	11	20
Chloroform	20.2	20.0	101	18.2	20.0	91	70 - 130	11	20
Chloromethane	22.9	20.0	114	20.2	20.0	101	40 - 160	12	20
Dibromochloromethane	21.2	20.0	106	18.7	20.0	94	70 - 130	12	20
Methylene Chloride	21.4	20.0	107	19.5	20.0	97	70 - 130	9	20
Tetrachloroethene (PCE)	20.7	20.0	103	18.7	20.0	93	70 - 130	10	20
Trichloroethene (TCE)	20.7	20.0	104	18.2	20.0	91	70 - 130	13	20
Trichlorofluoromethane (CFC 11)	19.2	20.0	96	16.8	20.0	84	70 - 130	13	20
Vinyl Chloride	21.7	20.0	108	19.6	20.0	98	70 - 130	10	20
cis-1,2-Dichloroethene	20.5	20.0	102	18.3	20.0	91	70 - 130	12	20
cis-1,3-Dichloropropene	21.1	20.0	105	18.9	20.0	94	70 - 130	11	20
trans-1,2-Dichloroethene	20.9	20.0	105	18.4	20.0	92	70 - 130	13	20
trans-1,3-Dichloropropene	20.7	20.0	103	18.1	20.0	91	70 - 130	13	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389276

Analyte Name	Lab Control Sample RQ1403997-03			Duplicate Lab Control Sample RQ1403997-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	21.3	20.0	107	20.3	20.0	102	70 - 130	5	20
1,1,2,2-Tetrachloroethane	20.3	20.0	102	19.4	20.0	97	70 - 130	4	20
1,1,2-Trichloroethane	20.7	20.0	103	20.3	20.0	101	70 - 130	2	20
1,1-Dichloroethane (1,1-DCA)	19.9	20.0	100	19.3	20.0	97	70 - 130	3	20
1,1-Dichloroethene (1,1-DCE)	23.2	20.0	116	22.5	20.0	112	70 - 130	3	20
1,2-Dichloroethane	21.8	20.0	109	21.0	20.0	105	70 - 130	3	20
1,2-Dichloropropane	20.2	20.0	101	19.3	20.0	96	70 - 130	4	20
Acetone	21.1	20.0	106	21.8	20.0	109	40 - 160	3	20
Bromodichloromethane	22.2	20.0	111	21.7	20.0	108	70 - 130	2	20
Bromoform	22.1	20.0	111	20.9	20.0	104	70 - 130	6	20
Bromomethane	23.9	20.0	119	22.0	20.0	110	40 - 160	8	20
Carbon Tetrachloride	22.0	20.0	110	20.5	20.0	102	70 - 130	7	20
Chlorobenzene	21.2	20.0	106	20.5	20.0	103	70 - 130	3	20
Chloroethane	22.3	20.0	112	21.6	20.0	108	70 - 130	3	20
Chloroform	20.3	20.0	102	19.6	20.0	98	70 - 130	3	20
Chloromethane	22.5	20.0	113	21.4	20.0	107	40 - 160	5	20
Dibromochloromethane	22.3	20.0	112	22.2	20.0	111	70 - 130	<1	20
Methylene Chloride	19.6	20.0	98	19.3	20.0	96	70 - 130	2	20
Tetrachloroethene (PCE)	22.4	20.0	112	20.8	20.0	104	70 - 130	8	20
Trichloroethene (TCE)	21.9	20.0	109	21.0	20.0	105	70 - 130	4	20
Trichlorofluoromethane (CFC 11)	21.7	20.0	108	20.4	20.0	102	70 - 130	6	20
Vinyl Chloride	23.3	20.0	116	22.3	20.0	112	70 - 130	4	20
cis-1,2-Dichloroethene	19.9	20.0	99	19.2	20.0	96	70 - 130	3	20
cis-1,3-Dichloropropene	21.0	20.0	105	20.0	20.0	100	70 - 130	5	20
trans-1,2-Dichloroethene	21.4	20.0	107	20.1	20.0	100	70 - 130	6	20
trans-1,3-Dichloropropene	22.2	20.0	111	21.6	20.0	108	70 - 130	2	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389330

Analyte Name	Lab Control Sample RQ1404075-03			Duplicate Lab Control Sample RQ1404075-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	20.3	20.0	101	19.0	20.0	95	70 - 130	6	20
1,1,2,2-Tetrachloroethane	21.6	20.0	108	19.7	20.0	99	70 - 130	9	20
1,1,2-Trichloroethane	22.1	20.0	110	20.2	20.0	101	70 - 130	9	20
1,1-Dichloroethane (1,1-DCA)	21.2	20.0	106	20.7	20.0	104	70 - 130	2	20
1,1-Dichloroethene (1,1-DCE)	23.3	20.0	116	22.7	20.0	113	70 - 130	3	20
1,2-Dichloroethane	19.2	20.0	96	18.2	20.0	91	70 - 130	5	20
1,2-Dichloropropane	23.0	20.0	115	21.3	20.0	107	70 - 130	8	20
Acetone	23.4	20.0	117	18.4	20.0	92	40 - 160	24 *	20
Bromodichloromethane	21.4	20.0	107	20.0	20.0	100	70 - 130	7	20
Bromoform	21.5	20.0	108	21.0	20.0	105	70 - 130	2	20
Bromomethane	19.9	20.0	99	19.8	20.0	99	40 - 160	<1	20
Carbon Tetrachloride	19.9	20.0	100	18.5	20.0	93	70 - 130	7	20
Chlorobenzene	21.5	20.0	107	19.9	20.0	99	70 - 130	8	20
Chloroethane	20.7	20.0	104	19.3	20.0	96	70 - 130	7	20
Chloroform	20.4	20.0	102	19.8	20.0	99	70 - 130	3	20
Chloromethane	23.5	20.0	118	21.8	20.0	109	40 - 160	8	20
Dibromochloromethane	22.8	20.0	114	20.8	20.0	104	70 - 130	9	20
Methylene Chloride	21.8	20.0	109	20.7	20.0	103	70 - 130	5	20
Tetrachloroethene (PCE)	21.9	20.0	110	19.8	20.0	99	70 - 130	10	20
Trichloroethene (TCE)	20.4	20.0	102	20.1	20.0	100	70 - 130	2	20
Trichlorofluoromethane (CFC 11)	19.1	20.0	95	18.4	20.0	92	70 - 130	3	20
Vinyl Chloride	22.0	20.0	110	21.0	20.0	105	70 - 130	5	20
cis-1,2-Dichloroethene	21.3	20.0	106	19.7	20.0	98	70 - 130	8	20
cis-1,3-Dichloropropene	21.6	20.0	108	20.3	20.0	102	70 - 130	6	20
trans-1,2-Dichloroethene	21.4	20.0	107	20.5	20.0	103	70 - 130	4	20
trans-1,3-Dichloropropene	21.7	20.0	108	20.1	20.0	101	70 - 130	7	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389046

Analyte Name	Lab Control Sample RQ1404087-02			Duplicate Lab Control Sample RQ1404087-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	18.1	20.0	90	16.0	20.0	80	70 - 130	12	20
1,1,2,2-Tetrachloroethane	18.9	20.0	94	17.2	20.0	86	70 - 130	9	20
1,1,2-Trichloroethane	22.5	20.0	113	20.3	20.0	102	70 - 130	10	20
1,1-Dichloroethane (1,1-DCA)	20.5	20.0	102	18.1	20.0	90	70 - 130	12	20
1,1-Dichloroethene (1,1-DCE)	20.6	20.0	103	18.6	20.0	93	70 - 130	10	20
1,2-Dichloroethane	19.9	20.0	100	17.7	20.0	88	70 - 130	12	20
1,2-Dichloropropane	22.6	20.0	113	19.6	20.0	98	70 - 130	14	20
Acetone	24.6	20.0	123	19.8	20.0	99	40 - 160	22 *	20
Bromodichloromethane	21.4	20.0	107	18.5	20.0	92	70 - 130	14	20
Bromoform	22.3	20.0	111	20.0	20.0	100	70 - 130	11	20
Bromomethane	30.1	20.0	150	26.4	20.0	132	40 - 160	13	20
Carbon Tetrachloride	17.6	20.0	88	15.3	20.0	76	70 - 130	14	20
Chlorobenzene	20.4	20.0	102	18.0	20.0	90	70 - 130	13	20
Chloroethane	19.0	20.0	95	16.1	20.0	81	70 - 130	17	20
Chloroform	19.7	20.0	99	17.8	20.0	89	70 - 130	10	20
Chloromethane	21.5	20.0	108	19.4	20.0	97	40 - 160	10	20
Dibromochloromethane	22.4	20.0	112	19.8	20.0	99	70 - 130	13	20
Methylene Chloride	22.1	20.0	110	19.7	20.0	98	70 - 130	12	20
Tetrachloroethene (PCE)	18.5	20.0	92	16.9	20.0	84	70 - 130	9	20
Trichloroethene (TCE)	22.5	20.0	113	19.3	20.0	96	70 - 130	15	20
Trichlorofluoromethane (CFC 11)	16.7	20.0	84	15.1	20.0	76	70 - 130	10	20
Vinyl Chloride	20.0	20.0	100	17.8	20.0	89	70 - 130	11	20
cis-1,2-Dichloroethene	20.1	20.0	100	17.8	20.0	89	70 - 130	12	20
cis-1,3-Dichloropropene	20.9	20.0	104	18.1	20.0	90	70 - 130	14	20
trans-1,2-Dichloroethene	20.1	20.0	101	17.6	20.0	88	70 - 130	13	20
trans-1,3-Dichloropropene	21.5	20.0	108	18.6	20.0	93	70 - 130	15	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																																				
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE	1																																			
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOA's 8260 <input type="checkbox"/> 624 <input type="checkbox"/> CLP	GC/MS SVOA's 8270 <input type="checkbox"/> 625	GC VOA's 8021 <input type="checkbox"/> 601/602	PESTICIDES 8081 <input type="checkbox"/> 608	PCB's 8082 <input type="checkbox"/> 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	<i>Ret</i>	<i>chloride</i>	<i>0</i>								Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____																		
Phone # <b>617-589-6102</b>																							E-mail <b>Raymond.Cadorette@cbi.com</b>																	
Sampler's Signature <i>[Signature]</i>																							Sampler's Printed Name <b>DANIEL C. VARRY</b>																	
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID																					SAMPLING DATE TIME		MATRIX		REMARKS/ ALTERNATE DESCRIPTION													
<b>SRHA-7A</b>																							<b>4/10/14 1300</b>		<b>GW</b>															
<b>SRHA-7B</b>				<b>4/10/14 1330</b>																																				
<b>OB24-S</b>				<b>4/10/14 1400</b>																																				
<b>MW-33B</b>				<b>4/11/14 0630</b>																																				
<b>TB-3</b>				<b>4/11/14 0650</b>																																				
<b>AP-19 (25')</b>				<b>4/11/14 0715</b>																																				
<b>AP-20 (16')</b>				<b>4/11/14 0800</b>																																				
<b>AP-21 (23')</b>				<b>4/11/14 0900</b>																																				
<b>AP-22 (20')</b>				<b>4/11/14 0930</b>																																				
<b>B-2 (11')</b>				<b>4/11/14 1000</b>																																				

**SPECIAL INSTRUCTIONS/COMMENTS**  
Metals = Field filtered  
Site specific VOC list.  
Massachusetts CAM analyses reporting and QA/QC.  
Please email GISKey formatted EDD & PDF of report to:  
Catherine.Joe@cbi.com.

See OAPP

**TURNAROUND REQUIREMENTS**  
 RUSH (SURCHARGES APPLY)  
 1 day    2 day    3 day  
 4 day    5 day  
 Standard

REQUESTED REPORT DATE \_\_\_\_\_

**REPORT REQUIREMENTS**  
 I. Results Only  
 II. Results + QC Summaries (LCS, DUP, MS/MSD as required)  
 III. Results + QC and Calibration Summaries  
 IV. Data Validation Report with Raw


Edata  Yes    No

**INVOICE INFORMATION**  
 PO #: **873489**  
 BILL TO: **CB&I**

**R1402638**   **7 Y**  
CB&I Environmental & Infrastructure  
Varian Beverly

STATE WHERE SAMPLES WERE COLLECTED:							
RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY		
Signature <i>[Signature]</i>	Signature <i>[Signature]</i>	Signature	Signature	Signature	Signature		
Printed Name <b>[Name]</b>	Printed Name <b>[Name]</b>	Printed Name	Printed Name	Printed Name	Printed Name		
Firm	Firm	Firm	Firm	Firm	Firm		
Date/Time	Date/Time <b>4/15/14 0825</b>	Date/Time	Date/Time	Date/Time	Date/Time		



Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)														
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <b>1</b> <b>20</b>														
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 625 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCB's <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) <b>Chloride</b>												Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____	
150 Royall Street																		
Canton, MA 02021																		
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@CBI.com</b>																
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <b>DANISLE LORRY</b>		REMARKS/ ALTERNATE DESCRIPTION														
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID														SAMPLING DATE      TIME		MATRIX
<b>OB38-DO (44')</b>				<b>4/11/14 1030</b>		<b>GW</b>		<b>3</b>		<b>3</b>								
<b>AP-27-DO (56')</b>				<b>4/11/14 1100</b>				<b>5</b>		<b>3</b>								
<b>EB-4</b>				<b>4/11/14 1130</b>				<b>3</b>		<b>3</b>								
<b>OB27-BR (74')</b>				<b>4/11/14 1200</b>				<b>5</b>		<b>3</b>		<b>1</b>		<b>1</b>				
<b>CL-115 (24')</b>				<b>4/11/14 1230</b>				<b>3</b>		<b>3</b>								
<b>CL-11DO (48')</b>				<b>4/11/14 1300</b>				<b>3</b>		<b>3</b>								
<b>OB43-S (15')</b>				<b>4/8/14 1300</b>				<b>3</b>		<b>3</b>								
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field Filtered Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD & PDF of report to: Catherine.Joe@CBI.com. <b>OB43-S (15') added as per Perrilla sample rec'd</b> See OAPP <input type="checkbox"/> <b>Haley</b> <b>4/14/14 - 4/11/14</b>				TURNAROUND REQUIREMENTS _____ RUSH (SURCHARGES APPLY) _____ 1 day    _____ 2 day    _____ 3 day _____ 4 day    _____ 5 day <input checked="" type="checkbox"/> Standard REQUESTED REPORT DATE _____				REPORT REQUIREMENTS _____ I. Results Only _____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required) _____ III. Results + QC and Calibration Summaries _____ IV. Data Validation Report with Raw Data Edata <input checked="" type="checkbox"/> Yes    _____ No				INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b> <b>R1402638</b> <b>7 Y</b> CB&I Environmental & Infrastructure Varian Beverly 						
																STATE WHERE SAMPLES WERE COLLECTED:		
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY				
Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>				
Printed Name <b>[Name]</b>		Printed Name <b>[Name]</b>		Printed Name <b>[Name]</b>		Printed Name <b>[Name]</b>		Printed Name <b>[Name]</b>		Printed Name <b>[Name]</b>		Printed Name <b>[Name]</b>		Printed Name <b>[Name]</b>				
Firm <b>[Firm]</b>		Firm <b>[Firm]</b>		Firm <b>[Firm]</b>		Firm <b>[Firm]</b>		Firm <b>[Firm]</b>		Firm <b>[Firm]</b>		Firm <b>[Firm]</b>		Firm <b>[Firm]</b>				
Date/Time <b>4/14/14 0825</b>		Date/Time <b>4/14/14 0825</b>		Date/Time <b>4/14/14 0825</b>		Date/Time <b>4/14/14 0825</b>		Date/Time <b>4/14/14 0825</b>		Date/Time <b>4/14/14 0825</b>		Date/Time <b>4/14/14 0825</b>		Date/Time <b>4/14/14 0825</b>				

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																	
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <u>1</u> <u>2</u> <u>0</u>																	
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 825 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCB's <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS: TOTAL (List in comments below) METALS: DISSOLVED (List in comments below) Chloride												Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____				
150 Royall Street																					
Canton, MA 02021																					
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@cbi.com</b>																			
Sampler's Signature 		Sampler's Printed Name <b>Paul Hedacek</b>																			
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID		SAMPLING DATE TIME		MATRIX															
BR5 Zone 1				4-11-14 0830		GW		3 3													
BR5 Zone 2				0900				3 3													
BR5 Zone 3				0800				5 3													
Ch9-BR Zone 1				0930				3 3													
Ch9-BR Zone 2				000				3 3													
Ch9-BR Zone 3				1030				3 3													
BR6 Zone 1				1200				3 3													
BR6 Zone 2				1230				3 3													
BR6 Zone 3				1300				3 3													
Ch8-BR Zone 1				1330				3 3													
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field filtered Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD and PDF of report to: Catherine.Joe@cbi.com.				TURNAROUND REQUIREMENTS _____ RUSH (SURCHARGES APPLY) _____ 1 day _____ 2 day _____ 3 day _____ 4 day _____ 5 day <input checked="" type="checkbox"/> Standard				REPORT REQUIREMENTS _____ I. Results Only _____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required) _____ III. Results + QC and Calibration Summaries _____ IV. Data Validation Report with Raw Data				INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>									
												See QAPP <input type="checkbox"/>				Edata <input checked="" type="checkbox"/> Yes _____ No					
STATE WHERE SAMPLES WERE COLLECTED:																					
RELINQUISHED BY				RECEIVED BY				RELINQUISHED BY				RECEIVED BY									
Printed Name <b>Paul Hedacek</b>				Printed Name <b>Raymond Cadorette</b>																	
Firm <b>CB&amp;I</b>				Firm <b>CB&amp;I</b>																	
Date/Time <b>4-11-14 1500</b>				Date/Time <b>4/14/14 0825</b>																	

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)												
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <b>1</b> <span style="float:right"><b>20</b></span>												
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">                 GC/MS VOA's  <input checked="" type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP                  GC/MS SVOA's  <input type="checkbox"/> 8270 <input type="checkbox"/> 625                  GC VOA's  <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602                  PESTICIDES  <input type="checkbox"/> 8081 <input type="checkbox"/> 608                  PCB's  <input type="checkbox"/> 8082 <input type="checkbox"/> 608                  METALS TOTAL                  (List in comments below)                  METALS DISSOLVED                  (List in comments below)  <b>Fe + Mn Chloride</b> </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">                 Preservative Key                  0. NONE                  1. HCL                  2. HNO<sub>3</sub>                  3. H<sub>2</sub>SO<sub>4</sub>                  4. NaOH                  5. Zn Acetate                  6. MeOH                  7. NaHSO<sub>4</sub>                  8. Other _____             </div> </div>											
150 Royall Street																
Canton, MA 02021																
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@CBI.com</b>														
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <b>Paul Leduca</b>		REMARKS/ ALTERNATE DESCRIPTION												
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID														SAMPLING DATE TIME
<b>CL8-BR Zone 2</b>				<b>4-11-14 1400</b>		<b>GW</b>		<b>3</b>		<b>3</b>						
<b>CL8-BR Zone 3</b>				<b>↓ 1430</b>				<b>3</b>		<b>3</b>						
SPECIAL INSTRUCTIONS/COMMENTS <b>Metals = Field filtered</b> <b>Site specific VOC list.</b> <b>Massachusetts CAM analyses reporting and QA/QC.</b> <b>Please email GISKey formatted EDD &amp; PDF of report to:</b> <b>Catherine.Joe@cbi.com.</b>				TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) ___ 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day <input checked="" type="checkbox"/> Standard  REQUESTED REPORT DATE				REPORT REQUIREMENTS ___ I. Results Only ___ II. Results + OC Summaries (LCS, DUP, MS/MSD as required) ___ III. Results + OC and Calibration Summaries ___ IV. Data Validation Report with Raw Data  Edata <input checked="" type="checkbox"/> Yes ___ No				INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>  <b>R1402630</b>				
																See QAPP <input type="checkbox"/>
STATE WHERE SAMPLES WERE COLLECTED:																
RELINQUISHED BY <i>[Signature]</i> Signature <b>Paul Leduca</b> Printed Name <b>CBI</b> Firm <b>4-11-14 1500</b> Date/Time				RECEIVED BY <i>[Signature]</i> Signature <b>[Signature]</b> Printed Name <b>[Signature]</b> Firm <b>4/14/14 0825</b> Date/Time				RELINQUISHED BY				RECEIVED BY				
Signature				Signature				Signature				Signature				
Printed Name				Printed Name				Printed Name				Printed Name				
Firm				Firm				Firm				Firm				
Date/Time				Date/Time				Date/Time				Date/Time				



# Cooler Receipt and Preservation Check Form

Project/Client COTE Folder Number 214-2638

Cooler received on 4/14/14 by: [Signature] COURIER: ALS  UPS FEDEX VELOCITY CLIENT

- Were custody seals on outside of cooler? YES  NO
- Were custody papers properly filled out (ink, signed, etc.)? ~~YES~~  NO  signed
- Did all bottles arrive in good condition (unbroken)?  YES  NO
- Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES  NO  N/A
- Were Ice or Ice packs present? melted YES  NO
- Where did the bottles originate? ALS/ROC CLIENT
- Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
- Temperature of cooler(s) upon receipt: 13.1°

Is the temperature within 0° - 6° C?: Y  N  Y N  Y N  Y N  Y N

If No, Explain Below Date/Time Temperatures Taken: 4/14/14 0828

Thermometer ID: IR GUN#3 IR GUN#4 Reading From: Temp Blank Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location R-002 by [Signature] on 4/14/14 at 0833  
5035 samples placed in storage location by on at

PC Secondary Review: [Signature] 4/14/14

Cooler Breakdown: Date: 4/14/14 Time: 1456 by: JFS

- Were all bottle labels complete (i.e. analysis, preservation, etc.)?  YES  NO
- Did all bottle labels and tags agree with custody papers? YES  NO
- Were correct containers used for the tests indicated? YES  NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	YES NO		Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
		YES	NO						
≥12	NaOH								
≤2	HNO <sub>3</sub>	<input checked="" type="checkbox"/>		<u>check</u>					
≤2	H <sub>2</sub> SO <sub>4</sub>								
<4	NaHSO <sub>4</sub>								
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)					
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-						
	Zn Aceta	-	-						
	HCl	*	*	<u>check</u>					

Yes = All samples OK  
No = Samples were preserved at lab as listed  
PM OK to Adjust:

Bottle lot numbers: \_\_\_\_\_  
Other Comments: \_\_\_\_\_

\* TB-3 was labeled as ED-3. This was determined because date & time matched up for missing sample.

PC Secondary Review: [Signature] 4/24/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



# Cooler Receipt and Preservation Check Form

Project/Client OB&T Folder Number 114-2595

Cooler received on 4/11 by: JCS COURIER: ALS  UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler?  YES NO
2. Were custody papers properly filled out (ink, signed, etc.)?  YES NO
3. Did all bottles arrive in good condition (unbroken)?  YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES  NO N/A
5. Were Ice or Ice packs present?  YES NO
6. Where did the bottles originate? ALS/ROE, CLIENT
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set  N/A
8. Temperature of cooler(s) upon receipt: 5.7 5.5

Is the temperature within 0° - 6° C?:  Y N  Y N Y N Y N  
If No, Explain Below Date/Time Temperatures Taken: 4/11/14 0905

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location room by JCS on 4/11/14 at 0906  
5035 samples placed in storage location by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: JMS 4/11/14

Cooler Breakdown: Date: 4/14/14 Time: 0804 by: JCS

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)?  YES  NO
2. Did all bottle labels and tags agree with custody papers?  YES  NO
3. Were correct containers used for the tests indicated?  YES  NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated  N/A

### Explain any discrepancies:

pH	Reagent			Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK
		YES	NO							
≥12	NaOH									No = Samples were preserved at lab as listed
≤2	HNO <sub>3</sub>									
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						PM OK to Adjust: _____
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-						*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet	
	Zn Aceta	-	-							
	HCl	*	*	<u>4112120</u>	<u>3/15</u>					

Bottle lot numbers: 4-002-003  
Other Comments:

labels on samples 17, 18, 20 do not match the ID's on coc.  
this temp sheet applicable to OB43-5 (15')

PC Secondary Review: JMS 4/24/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150151.18  
**Prepared By:** Dale Dailey **Date :** 5/22/2014  
**Matrix:** Air  
**Analyte Group :** Volatile Organics **Analytical Method :** EPA Method TO-15  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1402683  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/10/14	VOC TO-15		30 Days	4/18/14

**Sample temperature within QC limits:** NA - Air

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? Yes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :** NA

**Trip Blank ID :** NA

**Method Blank:** EPA TO-15 4/18/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

(1) All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method. All initial and continuing calibrations were compliant.

(2) various compounds for BLDG2-6 and BLDG2-7 have been flagged with an "E" as being outside the calibration range of the instrument. The samples were repeated at dilutions and both sets of data have been reported out.

**Reviewed By:** Pernilla Haley, 6/9/14



April 25, 2014

Service Request No: R1402638

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150148-05000000**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory between April 11, 2014 and April 14, 2014. For your reference, these analyses have been assigned our service request number **R1402638**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

Janice Jaeger  
Client Services Manager

Page 1 of 76

CC: Pemilla Haley

## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Water

**Service Request No.:** R1402638  
**Project Number:** 150148-05000000  
**Date Received:** 04/14/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Water samples were collected on 04/08-11/14 and received at ALS in good condition at cooler temperatures of 5.5 – 13.1 °C as noted on the cooler receipt and preservation check form. The client was notified of the out of temperature cooler and the samples were analyzed. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #.

### Volatile Organics

Twenty nine water samples were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples AO-21 (23'), AP-27-DO (56'), BR5 ZONE 2, BR5 ZONE 3, CL9-BR ZONE 2 and BR6 ZONE 2 were re-analyzed at larger dilutions to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D".

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Surrogate Standard recoveries were within QC limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits except Bromomethane was outside limits high on the 04/21/14 LCS. All RPD's were acceptable except Acetone was outside limits on 04/22/14 RPD's. All outlying QC has been flagged with an "\*\*\*". No data was affected.

All samples were analyzed within the required holding time of 14 days.

### Inorganic Analyses

Seven water samples were analyzed for Chloride by SM3400-CI-E and Soluble Iron and Manganese by method 6010C. Soluble Metals were filtered in the field.

The initial and continuing calibration criteria were met for all analytes.

All Blank Spike (LCS) recoveries were within QC limits.



## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150148

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1402638-001-029

 Matrices: Groundwater/Surface Water  Soil/Sediment Drinking Water Air Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <sup>1</sup>
----------	---	---	--

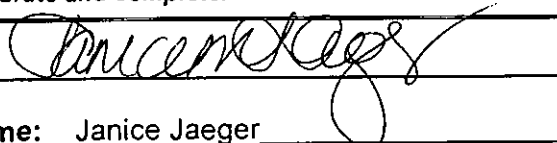
**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:



 Position: Client Services  
Manager

Printed Name: Janice Jaeger

Date: 04/29/14

00003

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402638

<u>Lab ID</u>	<u>Client ID</u>
R1402638-001	STRHA-7A
R1402638-002	STRHA-7B
R1402638-003	OB24-S
R1402638-004	MW-33B
R1402638-005	TB-3
R1402638-006	AP-19 (25')
R1402638-007	AP-20 (16')
R1402638-008	AP-21 (23')
R1402638-009	AP-22 (20')
R1402638-010	B-2 (11')
R1402638-011	OB38-DO (44')
R1402638-012	AP-27-DO (56')
R1402638-013	EB-4
R1402638-014	OB27-BR (74')
R1402638-015	CL-11S (24')
R1402638-016	CL-11DO (48')
R1402638-017	OB43-S (15')
R1402638-018	BR5 ZONE 1
R1402638-019	BR5 ZONE 2
R1402638-020	BR5 ZONE 3
R1402638-021	CL9-BR ZONE 1
R1402638-022	CL9-BR ZONE 2
R1402638-023	CL9-BR ZONE 3
R1402638-024	BR6 ZONE 1
R1402638-025	BR6 ZONE 2
R1402638-026	BR6 ZONE 3
R1402638-027	CL8-BR ZONE 1
R1402638-028	CL8-BR ZONE 2
R1402638-029	CL8-BR ZONE 3

00004

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.



## INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

### Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	3010A
200.8	ILM05.3
6010C	3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

### Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3010A
6010 SPLP (1312) extract	3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

RIGHT SOLUTIONS | RIGHT PARTNER



*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

A handwritten signature in cursive script, appearing to read "Oscar C. Jacobo".

*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: 01 JUL 2013

M-NY032            ALS ENVIRONMENTAL ROCHESTER  
                         ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CaCO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
CHLORIDE			SM 4500-CL-E	
CHLORIDE			EPA 300.0	
FLUORIDE			EPA 300.0	
SULFATE			EPA 300.0	
AMMONIA-N			EPA 350.1	
NITRATE-N			EPA 300.0	
NITRATE-N			EPA 353.2	
KJELDAHL-N			EPA 351.2	
ORTHOPHOSPHATE			EPA 365.1	
PHOSPHORUS, TOTAL			EPA 365.1	
CHEMICAL OXYGEN DEMAND			EPA 410.4	
BIOCHEMICAL OXYGEN DEMAND			SM 5210B	
TOTAL ORGANIC CARBON			SM 5310C	
CYANIDE, TOTAL			EPA 335.4	
NON-FILTERABLE RESIDUE			SM 2540D	
OIL AND GREASE			EPA 1664	
PHENOLICS, TOTAL			EPA 420.4	
VOLATILE HALOCARBONS			EPA 601	
VOLATILE HALOCARBONS			EPA 624	
VOLATILE AROMATICS			EPA 602	
VOLATILE AROMATICS			EPA 624	
SVOC-ACID EXTRACTABLES			EPA 625	
SVOC-BASE/NEUTRAL EXTRACTABLES			EPA 625	
POLYCHLORINATED BIPHENYLS (WATEF			EPA 608	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/10/14 1300  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 17:39

Sample Name: STRHA-7A  
 Lab Code: R1402638-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7742.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	8.8		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	9.7		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/21/14 17:39	
Dibromofluoromethane	98	70-130	4/21/14 17:39	
Toluene-d8	97	70-130	4/21/14 17:39	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/10/14 1330  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 18:09

Sample Name: STRHA-7B  
 Lab Code: R1402638-002

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7743.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	9.9		2.0	
79-01-6	Trichloroethene (TCE)	42		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	13		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 18:09	
Dibromofluoromethane	96	70-130	4/21/14 18:09	
Toluene-d8	91	70-130	4/21/14 18:09	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/10/14 1400  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 18:39

Sample Name: OB24-S  
 Lab Code: R1402638-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7744.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	70-130	4/21/14 18:39	
Dibromofluoromethane	98	70-130	4/21/14 18:39	
Toluene-d8	99	70-130	4/21/14 18:39	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0630  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 19:10

Sample Name: MW-33B  
 Lab Code: R1402638-004

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\042114\F7745.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0 U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/21/14 19:10	
Dibromofluoromethane	99	70-130	4/21/14 19:10	
Toluene-d8	99	70-130	4/21/14 19:10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0650  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 03:17

Sample Name: TB-3  
 Lab Code: R1402638-005

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7761.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 03:17	
Dibromofluoromethane	97	70-130	4/22/14 03:17	
Toluene-d8	97	70-130	4/22/14 03:17	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP-19 (25')  
 Lab Code: R1402638-006

Service Request: R1402638  
 Date Collected: 4/11/14 0715  
 Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	25.4	mg/L	1.0	1	NA	4/22/14 13:12	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP-19 (25')  
 Lab Code: R1402638-006

Service Request: R1402638  
 Date Collected: 4/11/14 0715  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 01:16	
Manganese, Dissolved	6010C	1080		µg/L	10	1	4/15/14	4/17/14 15:46	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0715  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 19:40

Sample Name: AP-19 (25')  
 Lab Code: R1402638-006

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7746.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 2

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	4.0	U	4.0	
79-34-5	1,1,2,2-Tetrachloroethane	4.0	U	4.0	
79-00-5	1,1,2-Trichloroethane	4.0	U	4.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4.0	U	4.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	4.0	U	4.0	
107-06-2	1,2-Dichloroethane	4.0	U	4.0	
78-87-5	1,2-Dichloropropane	4.0	U	4.0	
67-64-1	Acetone	20	U	20	
75-27-4	Bromodichloromethane	4.0	U	4.0	
75-25-2	Bromoform	4.0	U	4.0	
74-83-9	Bromomethane	4.0	U	4.0	
56-23-5	Carbon Tetrachloride	4.0	U	4.0	
108-90-7	Chlorobenzene	4.0	U	4.0	
75-00-3	Chloroethane	4.0	U	4.0	
67-66-3	Chloroform	4.0	U	4.0	
74-87-3	Chloromethane	4.0	U	4.0	
124-48-1	Dibromochloromethane	4.0	U	4.0	
75-09-2	Methylene Chloride	4.0	U	4.0	
127-18-4	Tetrachloroethene (PCE)	390		4.0	
79-01-6	Trichloroethene (TCE)	77		4.0	
75-69-4	Trichlorofluoromethane (CFC 11)	4.0	U	4.0	
75-01-4	Vinyl Chloride	4.0	U	4.0	
156-59-2	cis-1,2-Dichloroethene	81		4.0	
10061-01-5	cis-1,3-Dichloropropene	4.0	U	4.0	
156-60-5	trans-1,2-Dichloroethene	4.0	U	4.0	
10061-02-6	trans-1,3-Dichloropropene	4.0	U	4.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 19:40	
Dibromofluoromethane	100	70-130	4/21/14 19:40	
Toluene-d8	99	70-130	4/21/14 19:40	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP-20 (16')  
 Lab Code: R1402638-007

Service Request: R1402638  
 Date Collected: 4/11/14 0800  
 Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	14.1	mg/L	1.0	1	NA	4/22/14 13:13	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP-20 (16')  
 Lab Code: R1402638-007

Service Request: R1402638  
 Date Collected: 4/11/14 0800  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 01:35	
Manganese, Dissolved	6010C	3980		µg/L	10	1	4/15/14	4/17/14 15:52	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0800  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 17:37

Sample Name: AP-20 (16')  
 Lab Code: R1402638-007

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7789.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10	U	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	50	U	50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	550		10	
79-01-6	Trichloroethene (TCE)	69		10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	10	U	10	
156-59-2	cis-1,2-Dichloroethene	97		10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/22/14 17:37	
Dibromofluoromethane	100	70-130	4/22/14 17:37	
Toluene-d8	99	70-130	4/22/14 17:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP-21 (23')  
Lab Code: R1402638-008

Service Request: R1402638  
Date Collected: 4/11/14 0900  
Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	227	mg/L	4.0	4	NA	4/22/14 13:14	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP-21 (23')  
 Lab Code: R1402638-008

Service Request: R1402638  
 Date Collected: 4/11/14 0900  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14	01:41
Manganese, Dissolved	6010C	513		µg/L	10	1	4/15/14	4/17/14	15:58

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0900  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 20:41

Sample Name: AP-21 (23')  
 Lab Code: R1402638-008

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7748.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10 U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10 U	10	
79-00-5	1,1,2-Trichloroethane	10 U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	110	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	35	10	
107-06-2	1,2-Dichloroethane	10 U	10	
78-87-5	1,2-Dichloropropane	10 U	10	
67-64-1	Acetone	50 U	50	
75-27-4	Bromodichloromethane	10 U	10	
75-25-2	Bromoform	10 U	10	
74-83-9	Bromomethane	10 U	10	
56-23-5	Carbon Tetrachloride	10 U	10	
108-90-7	Chlorobenzene	10 U	10	
75-00-3	Chloroethane	10 U	10	
67-66-3	Chloroform	10 U	10	
74-87-3	Chloromethane	10 U	10	
124-48-1	Dibromochloromethane	10 U	10	
75-09-2	Methylene Chloride	10 U	10	
127-18-4	Tetrachloroethene (PCE)	830	10	
79-01-6	Trichloroethene (TCE)	470	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10 U	10	
75-01-4	Vinyl Chloride	10 U	10	
156-59-2	cis-1,2-Dichloroethene	5300 E	10	
10061-01-5	cis-1,3-Dichloropropene	10 U	10	
156-60-5	trans-1,2-Dichloroethene	10 U	10	
10061-02-6	trans-1,3-Dichloropropene	10 U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/21/14 20:41	
Dibromofluoromethane	99	70-130	4/21/14 20:41	
Toluene-d8	98	70-130	4/21/14 20:41	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0900  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 18:07

Sample Name: AP-21 (23')  
 Lab Code: R1402638-008  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7790.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 50

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	100	U	100	
79-34-5	1,1,2,2-Tetrachloroethane	100	U	100	
79-00-5	1,1,2-Trichloroethane	100	U	100	
75-34-3	1,1-Dichloroethane (1,1-DCA)	100	D	100	
75-35-4	1,1-Dichloroethene (1,1-DCE)	100	U	100	
107-06-2	1,2-Dichloroethane	100	U	100	
78-87-5	1,2-Dichloropropane	100	U	100	
67-64-1	Acetone	500	U	500	
75-27-4	Bromodichloromethane	100	U	100	
75-25-2	Bromoform	100	U	100	
74-83-9	Bromomethane	100	U	100	
56-23-5	Carbon Tetrachloride	100	U	100	
108-90-7	Chlorobenzene	100	U	100	
75-00-3	Chloroethane	100	U	100	
67-66-3	Chloroform	100	U	100	
74-87-3	Chloromethane	100	U	100	
124-48-1	Dibromochloromethane	100	U	100	
75-09-2	Methylene Chloride	100	U	100	
127-18-4	Tetrachloroethene (PCE)	760	D	100	
79-01-6	Trichloroethene (TCE)	420	D	100	
75-69-4	Trichlorofluoromethane (CFC 11)	100	U	100	
75-01-4	Vinyl Chloride	100	U	100	
156-59-2	cis-1,2-Dichloroethene	4900	D	100	
10061-01-5	cis-1,3-Dichloropropene	100	U	100	
156-60-5	trans-1,2-Dichloroethene	100	U	100	
10061-02-6	trans-1,3-Dichloropropene	100	U	100	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 18:07	
Dibromofluoromethane	99	70-130	4/22/14 18:07	
Toluene-d8	98	70-130	4/22/14 18:07	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP-22 (20')  
Lab Code: R1402638-009

Service Request: R1402638  
Date Collected: 4/11/14 0930  
Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	919	mg/L	20	20	NA	4/22/14 13:15	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP-22 (20')  
 Lab Code: R1402638-009

Service Request: R1402638  
 Date Collected: 4/11/14 0930  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	260	µg/L	100	1	4/15/14	4/17/14 01:48	
Manganese, Dissolved	6010C	50900	µg/L	200	20	4/15/14	4/17/14 16:05	



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0930  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 21:11

Sample Name: AP-22 (20')  
 Lab Code: R1402638-009

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7749.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.4		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	5.0		2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	25		2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 21:11	
Dibromofluoromethane	99	70-130	4/21/14 21:11	
Toluene-d8	98	70-130	4/21/14 21:11	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1000  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 18:38

Sample Name: B-2 (11')  
 Lab Code: R1402638-010

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa10\data\042214\F7791.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 2.5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.0	U	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
67-64-1	Acetone	25	U	25	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-09-2	Methylene Chloride	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	5.0	U	5.0	
79-01-6	Trichloroethene (TCE)	74		5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	15		5.0	
156-59-2	cis-1,2-Dichloroethene	330		5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0	U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 18:38	
Dibromofluoromethane	99	70-130	4/22/14 18:38	
Toluene-d8	98	70-130	4/22/14 18:38	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1030  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 19:08

Sample Name: OB38-DO (44')  
 Lab Code: R1402638-011

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7792.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	57		2.0	
79-01-6	Trichloroethene (TCE)	99		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	45		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	3.4		2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 19:08	
Dibromofluoromethane	99	70-130	4/22/14 19:08	
Toluene-d8	98	70-130	4/22/14 19:08	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP-27-DO (56')  
Lab Code: R1402638-012

Service Request: R1402638  
Date Collected: 4/11/14 1100  
Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	342		mg/L	4.0	4	NA	4/22/14 13:16	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP-27-DO (56')  
 Lab Code: R1402638-012

Service Request: R1402638  
 Date Collected: 4/11/14 1100  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 01:55	
Manganese, Dissolved	6010C	194		µg/L	10	1	4/15/14	4/17/14 16:11	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1100  
 Date Received: 4/14/14  
 Date Analyzed: 4/21/14 22:43

Sample Name: AP-27-DO (56')  
 Lab Code: R1402638-012

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7752.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	3.0		2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	270	E	2.0	
79-01-6	Trichloroethene (TCE)	4200	E	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.3		2.0	
156-59-2	cis-1,2-Dichloroethene	72		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	23		2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 22:43	
Dibromofluoromethane	98	70-130	4/21/14 22:43	
Toluene-d8	100	70-130	4/21/14 22:43	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1100  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 19:39

Sample Name: AP-27-DO (56')  
 Lab Code: R1402638-012  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7793.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 100

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	200	U	200	
79-34-5	1,1,2,2-Tetrachloroethane	200	U	200	
79-00-5	1,1,2-Trichloroethane	200	U	200	
75-34-3	1,1-Dichloroethane (1,1-DCA)	200	U	200	
75-35-4	1,1-Dichloroethene (1,1-DCE)	200	U	200	
107-06-2	1,2-Dichloroethane	200	U	200	
78-87-5	1,2-Dichloropropane	200	U	200	
67-64-1	Acetone	1000	U	1000	
75-27-4	Bromodichloromethane	200	U	200	
75-25-2	Bromoform	200	U	200	
74-83-9	Bromomethane	200	U	200	
56-23-5	Carbon Tetrachloride	200	U	200	
108-90-7	Chlorobenzene	200	U	200	
75-00-3	Chloroethane	200	U	200	
67-66-3	Chloroform	200	U	200	
74-87-3	Chloromethane	200	U	200	
124-48-1	Dibromochloromethane	200	U	200	
75-09-2	Methylene Chloride	200	U	200	
127-18-4	Tetrachloroethene (PCE)	240	D	200	
79-01-6	Trichloroethene (TCE)	11000	D	200	
75-69-4	Trichlorofluoromethane (CFC 11)	200	U	200	
75-01-4	Vinyl Chloride	200	U	200	
156-59-2	cis-1,2-Dichloroethene	200	U	200	
10061-01-5	cis-1,3-Dichloropropene	200	U	200	
156-60-5	trans-1,2-Dichloroethene	200	U	200	
10061-02-6	trans-1,3-Dichloropropene	200	U	200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/22/14 19:39	
Dibromofluoromethane	101	70-130	4/22/14 19:39	
Toluene-d8	100	70-130	4/22/14 19:39	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1130  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 03:47

Sample Name: EB-4  
 Lab Code: R1402638-013

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7762.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/22/14 03:47	
Dibromofluoromethane	98	70-130	4/22/14 03:47	
Toluene-d8	98	70-130	4/22/14 03:47	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: OB27-BR (74')  
 Lab Code: R1402638-014

Service Request: R1402638  
 Date Collected: 4/11/14 1200  
 Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	36.6	mg/L	1.0	1	NA	4/22/14 13:16	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: OB27-BR (74')  
 Lab Code: R1402638-014

Service Request: R1402638  
 Date Collected: 4/11/14 1200  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	760	µg/L	100	1	4/15/14	4/17/14 02:01	
Manganese, Dissolved	6010C	370000	µg/L	2000	200	4/15/14	4/17/14 16:18	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1200  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 20:10

Sample Name: OB27-BR (74')  
 Lab Code: R1402638-014

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\042214\F7794.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	14		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	57		2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/22/14 20:10	
Dibromofluoromethane	101	70-130	4/22/14 20:10	
Toluene-d8	100	70-130	4/22/14 20:10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1230  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 04:18

Sample Name: CL-11S (24')  
 Lab Code: R1402638-015

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7763.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	4.9		2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	10		2.0	
79-01-6	Trichloroethene (TCE)	5.2		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 04:18	
Dibromofluoromethane	100	70-130	4/22/14 04:18	
Toluene-d8	99	70-130	4/22/14 04:18	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1300  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 04:48

Sample Name: CL-11DO (48')  
 Lab Code: R1402638-016

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7764.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.8		2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.0		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	6.3		2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	3.7		2.0	
79-01-6	Trichloroethene (TCE)	25		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 04:48	
Dibromofluoromethane	98	70-130	4/22/14 04:48	
Toluene-d8	99	70-130	4/22/14 04:48	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/ 8/14 1300  
 Date Received: 4/11/14  
 Date Analyzed: 4/22/14 05:19

Sample Name: OB43-S (15')  
 Lab Code: R1402638-017

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\042114\F7765.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	3.7		2.0	
79-01-6	Trichloroethene (TCE)	4.0		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 05:19	
Dibromofluoromethane	98	70-130	4/22/14 05:19	
Toluene-d8	99	70-130	4/22/14 05:19	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0830  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 05:49

Sample Name: BR5 ZONE 1  
 Lab Code: R1402638-018

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7766.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	9.1		2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	60		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	72		2.0	
156-59-2	cis-1,2-Dichloroethene	90		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	70-130	4/22/14 05:49	
Dibromofluoromethane	100	70-130	4/22/14 05:49	
Toluene-d8	100	70-130	4/22/14 05:49	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0900  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 06:20

Sample Name: BR5 ZONE 2  
 Lab Code: R1402638-019

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7767.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	18		2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	200	E	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	300	E	2.0	
156-59-2	cis-1,2-Dichloroethene	670	E	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	3.5		2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 06:20	
Dibromofluoromethane	99	70-130	4/22/14 06:20	
Toluene-d8	99	70-130	4/22/14 06:20	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0900  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 20:40

Sample Name: BR5 ZONE 2  
 Lab Code: R1402638-019  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7795.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	14	D	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	50	U	50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	10	U	10	
79-01-6	Trichloroethene (TCE)	170	D	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	280	D	10	
156-59-2	cis-1,2-Dichloroethene	630	D	10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/22/14 20:40	
Dibromofluoromethane	102	70-130	4/22/14 20:40	
Toluene-d8	100	70-130	4/22/14 20:40	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: BRS ZONE 3  
 Lab Code: R1402638-020

Service Request: R1402638  
 Date Collected: 4/11/14 0800  
 Date Received: 4/14/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	136	mg/L	2.0	2	NA	4/22/14 13:18	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: BR5 ZONE 3  
 Lab Code: R1402638-020

Service Request: R1402638  
 Date Collected: 4/11/14 0800  
 Date Received: 4/14/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/15/14	4/17/14 02:07	
Manganese, Dissolved	6010C	3100		µg/L	10	1	4/15/14	4/17/14 16:24	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0800  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 06:50

Sample Name: BR5 ZONE 3  
 Lab Code: R1402638-020

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7768.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.7		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.7		2.0	
79-01-6	Trichloroethene (TCE)	14		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	48		2.0	
156-59-2	cis-1,2-Dichloroethene	260	E	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 06:50	
Dibromofluoromethane	101	70-130	4/22/14 06:50	
Toluene-d8	98	70-130	4/22/14 06:50	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0800  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 21:10

Sample Name: BR5 ZONE 3  
 Lab Code: R1402638-020  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7796.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 2.5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.6	D	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
67-64-1	Acetone	25	U	25	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-09-2	Methylene Chloride	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	5.0	U	5.0	
79-01-6	Trichloroethene (TCE)	12	D	5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	42	D	5.0	
156-59-2	cis-1,2-Dichloroethene	230	D	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0	U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 21:10	
Dibromofluoromethane	100	70-130	4/22/14 21:10	
Toluene-d8	100	70-130	4/22/14 21:10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 0930  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 07:21

Sample Name: CL9-BR ZONE 1  
 Lab Code: R1402638-021

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\042114\F7769.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 50

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	100	U	100	
79-34-5	1,1,2,2-Tetrachloroethane	100	U	100	
79-00-5	1,1,2-Trichloroethane	100	U	100	
75-34-3	1,1-Dichloroethane (1,1-DCA)	100	U	100	
75-35-4	1,1-Dichloroethene (1,1-DCE)	100	U	100	
107-06-2	1,2-Dichloroethane	100	U	100	
78-87-5	1,2-Dichloropropane	100	U	100	
67-64-1	Acetone	500	U	500	
75-27-4	Bromodichloromethane	100	U	100	
75-25-2	Bromoform	100	U	100	
74-83-9	Bromomethane	100	U	100	
56-23-5	Carbon Tetrachloride	100	U	100	
108-90-7	Chlorobenzene	100	U	100	
75-00-3	Chloroethane	100	U	100	
67-66-3	Chloroform	100	U	100	
74-87-3	Chloromethane	100	U	100	
124-48-1	Dibromochloromethane	100	U	100	
75-09-2	Methylene Chloride	100	U	100	
127-18-4	Tetrachloroethene (PCE)	110		100	
79-01-6	Trichloroethene (TCE)	230		100	
75-69-4	Trichlorofluoromethane (CFC 11)	100	U	100	
75-01-4	Vinyl Chloride	100	U	100	
156-59-2	cis-1,2-Dichloroethene	4900		100	
10061-01-5	cis-1,3-Dichloropropene	100	U	100	
156-60-5	trans-1,2-Dichloroethene	100	U	100	
10061-02-6	trans-1,3-Dichloropropene	100	U	100	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 07:21	
Dibromofluoromethane	98	70-130	4/22/14 07:21	
Toluene-d8	99	70-130	4/22/14 07:21	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1000  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 07:51

Sample Name: CL9-BR ZONE 2  
 Lab Code: R1402638-022

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7770.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 25

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	50	U	50	
79-34-5	1,1,2,2-Tetrachloroethane	50	U	50	
79-00-5	1,1,2-Trichloroethane	50	U	50	
75-34-3	1,1-Dichloroethane (1,1-DCA)	50	U	50	
75-35-4	1,1-Dichloroethene (1,1-DCE)	50	U	50	
107-06-2	1,2-Dichloroethane	50	U	50	
78-87-5	1,2-Dichloropropane	50	U	50	
67-64-1	Acetone	250	U	250	
75-27-4	Bromodichloromethane	50	U	50	
75-25-2	Bromoform	50	U	50	
74-83-9	Bromomethane	50	U	50	
56-23-5	Carbon Tetrachloride	50	U	50	
108-90-7	Chlorobenzene	50	U	50	
75-00-3	Chloroethane	50	U	50	
67-66-3	Chloroform	50	U	50	
74-87-3	Chloromethane	50	U	50	
124-48-1	Dibromochloromethane	50	U	50	
75-09-2	Methylene Chloride	50	U	50	
127-18-4	Tetrachloroethene (PCE)	250		50	
79-01-6	Trichloroethene (TCE)	400		50	
75-69-4	Trichlorofluoromethane (CFC 11)	50	U	50	
75-01-4	Vinyl Chloride	85		50	
156-59-2	cis-1,2-Dichloroethene	7400	E	50	
10061-01-5	cis-1,3-Dichloropropene	50	U	50	
156-60-5	trans-1,2-Dichloroethene	50	U	50	
10061-02-6	trans-1,3-Dichloropropene	50	U	50	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 07:51	
Dibromofluoromethane	100	70-130	4/22/14 07:51	
Toluene-d8	99	70-130	4/22/14 07:51	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1000  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 21:41

Sample Name: CL9-BR ZONE 2  
 Lab Code: R1402638-022  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7797.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 100

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	200	U	200	
79-34-5	1,1,2,2-Tetrachloroethane	200	U	200	
79-00-5	1,1,2-Trichloroethane	200	U	200	
75-34-3	1,1-Dichloroethane (1,1-DCA)	200	U	200	
75-35-4	1,1-Dichloroethene (1,1-DCE)	200	U	200	
107-06-2	1,2-Dichloroethane	200	U	200	
78-87-5	1,2-Dichloropropane	200	U	200	
67-64-1	Acetone	1000	U	1000	
75-27-4	Bromodichloromethane	200	U	200	
75-25-2	Bromoform	200	U	200	
74-83-9	Bromomethane	200	U	200	
56-23-5	Carbon Tetrachloride	200	U	200	
108-90-7	Chlorobenzene	200	U	200	
75-00-3	Chloroethane	200	U	200	
67-66-3	Chloroform	200	U	200	
74-87-3	Chloromethane	200	U	200	
124-48-1	Dibromochloromethane	200	U	200	
75-09-2	Methylene Chloride	200	U	200	
127-18-4	Tetrachloroethene (PCE)	230	D	200	
79-01-6	Trichloroethene (TCE)	400	D	200	
75-69-4	Trichlorofluoromethane (CFC 11)	200	U	200	
75-01-4	Vinyl Chloride	200	U	200	
156-59-2	cis-1,2-Dichloroethene	6700	D	200	
10061-01-5	cis-1,3-Dichloropropene	200	U	200	
156-60-5	trans-1,2-Dichloroethene	200	U	200	
10061-02-6	trans-1,3-Dichloropropene	200	U	200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 21:41	
Dibromofluoromethane	100	70-130	4/22/14 21:41	
Toluene-d8	98	70-130	4/22/14 21:41	





ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1030  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 22:12

Sample Name: CL9-BR ZONE 3  
 Lab Code: R1402638-023

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7798.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 10

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	20	U	20	
79-34-5	1,1,2,2-Tetrachloroethane	20	U	20	
79-00-5	1,1,2-Trichloroethane	20	U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20	U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	20	U	20	
107-06-2	1,2-Dichloroethane	20	U	20	
78-87-5	1,2-Dichloropropane	20	U	20	
67-64-1	Acetone	100	U	100	
75-27-4	Bromodichloromethane	20	U	20	
75-25-2	Bromoform	20	U	20	
74-83-9	Bromomethane	20	U	20	
56-23-5	Carbon Tetrachloride	20	U	20	
108-90-7	Chlorobenzene	20	U	20	
75-00-3	Chloroethane	20	U	20	
67-66-3	Chloroform	20	U	20	
74-87-3	Chloromethane	20	U	20	
124-48-1	Dibromochloromethane	20	U	20	
75-09-2	Methylene Chloride	20	U	20	
127-18-4	Tetrachloroethene (PCE)	66		20	
79-01-6	Trichloroethene (TCE)	71		20	
75-69-4	Trichlorofluoromethane (CFC 11)	20	U	20	
75-01-4	Vinyl Chloride	52		20	
156-59-2	cis-1,2-Dichloroethene	1000		20	
10061-01-5	cis-1,3-Dichloropropene	20	U	20	
156-60-5	trans-1,2-Dichloroethene	20	U	20	
10061-02-6	trans-1,3-Dichloropropene	20	U	20	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	70-130	4/22/14 22:12	
Dibromofluoromethane	102	70-130	4/22/14 22:12	
Toluene-d8	93	70-130	4/22/14 22:12	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1200  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 08:52

Sample Name: BR6 ZONE 1  
 Lab Code: R1402638-024

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7772.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	4.0		2.0	
156-59-2	cis-1,2-Dichloroethene	12		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 08:52	
Dibromofluoromethane	101	70-130	4/22/14 08:52	
Toluene-d8	98	70-130	4/22/14 08:52	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1230  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 09:22

Sample Name: BR6 ZONE 2  
 Lab Code: R1402638-025

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7773.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	3.1		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	23		2.0	
156-59-2	cis-1,2-Dichloroethene	390	E	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 09:22	
Dibromofluoromethane	100	70-130	4/22/14 09:22	
Toluene-d8	97	70-130	4/22/14 09:22	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1230  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 22:42

Sample Name: BR6 ZONE 2  
 Lab Code: R1402638-025  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042214\F7799.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10 U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10 U	10	
79-00-5	1,1,2-Trichloroethane	10 U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10 U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10 U	10	
107-06-2	1,2-Dichloroethane	10 U	10	
78-87-5	1,2-Dichloropropane	10 U	10	
67-64-1	Acetone	50 U	50	
75-27-4	Bromodichloromethane	10 U	10	
75-25-2	Bromoform	10 U	10	
74-83-9	Bromomethane	10 U	10	
56-23-5	Carbon Tetrachloride	10 U	10	
108-90-7	Chlorobenzene	10 U	10	
75-00-3	Chloroethane	10 U	10	
67-66-3	Chloroform	10 U	10	
74-87-3	Chloromethane	10 U	10	
124-48-1	Dibromochloromethane	10 U	10	
75-09-2	Methylene Chloride	10 U	10	
127-18-4	Tetrachloroethene (PCE)	10 U	10	
79-01-6	Trichloroethene (TCE)	10 U	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10 U	10	
75-01-4	Vinyl Chloride	22 D	10	
156-59-2	cis-1,2-Dichloroethene	350 D	10	
10061-01-5	cis-1,3-Dichloropropene	10 U	10	
156-60-5	trans-1,2-Dichloroethene	10 U	10	
10061-02-6	trans-1,3-Dichloropropene	10 U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	4/22/14 22:42	
Dibromofluoromethane	102	70-130	4/22/14 22:42	
Toluene-d8	99	70-130	4/22/14 22:42	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1300  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 09:53

Sample Name: BR6 ZONE 3  
 Lab Code: R1402638-026

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7774.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.1		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	78		2.0	
156-59-2	cis-1,2-Dichloroethene	170		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 09:53	
Dibromofluoromethane	101	70-130	4/22/14 09:53	
Toluene-d8	96	70-130	4/22/14 09:53	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1330  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 15:26

Sample Name: CL8-BR ZONE 1  
 Lab Code: R1402638-027

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\042214\J5000.D\

Analysis Lot: 389276  
 Instrument Name: R-MS-12  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10	U	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	95		50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	10	U	10	
79-01-6	Trichloroethene (TCE)	10	U	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	10	U	10	
156-59-2	cis-1,2-Dichloroethene	10	U	10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/22/14 15:26	
Dibromofluoromethane	103	70-130	4/22/14 15:26	
Toluene-d8	97	70-130	4/22/14 15:26	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1400  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 10:54

Sample Name: CL8-BR ZONE 2  
 Lab Code: R1402638-028

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7776.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 10:54	
Dibromofluoromethane	101	70-130	4/22/14 10:54	
Toluene-d8	97	70-130	4/22/14 10:54	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: 4/11/14 1430  
 Date Received: 4/14/14  
 Date Analyzed: 4/22/14 11:24

Sample Name: CL8-BR ZONE 3  
 Lab Code: R1402638-029

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7777.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 11:24	
Dibromofluoromethane	99	70-130	4/22/14 11:24	
Toluene-d8	97	70-130	4/22/14 11:24	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: Method Blank  
Lab Code: R1402638-MB

Service Request: R1402638  
Date Collected: NA  
Date Received: NA  
Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	1.0	U	mg/L	1.0	1	NA	4/22/14 13:02	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: Method Blank  
 Lab Code: R1402638-MB

Service Request: R1402638  
 Date Collected: NA  
 Date Received: NA

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100 U	µg/L	100	1	4/15/14	4/16/14 23:10	
Manganese, Dissolved	6010C	10 U	µg/L	10	1	4/15/14	4/17/14 14:25	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/21/14 14:37

Sample Name: Method Blank  
 Lab Code: RQ1404008-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7736.D\

Analysis Lot: 389045  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/21/14 14:37	
Dibromofluoromethane	99	70-130	4/21/14 14:37	
Toluene-d8	100	70-130	4/21/14 14:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/22/14 02:47

Sample Name: Method Blank  
 Lab Code: RQ1404087-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042114\F7760.D\

Analysis Lot: 389046  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/22/14 02:47	
Dibromofluoromethane	99	70-130	4/22/14 02:47	
Toluene-d8	98	70-130	4/22/14 02:47	



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/22/14 14:22

Sample Name: Method Blank  
 Lab Code: RQ1403997-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\042214J4998.D\

Analysis Lot: 389276  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0 U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	4/22/14 14:22	
Dibromofluoromethane	100	70-130	4/22/14 14:22	
Toluene-d8	98	70-130	4/22/14 14:22	



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/22/14 16:04

Sample Name: Method Blank  
 Lab Code: RQ1404075-02

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvov10\data\042214\F7786.D\

Analysis Lot: 389330  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/22/14 16:04	
Dibromofluoromethane	98	70-130	4/22/14 16:04	
Toluene-d8	97	70-130	4/22/14 16:04	

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 General Chemistry Parameters

Units: mg/L  
 Basis: NA

Analyte Name	Method	Lab Control Sample R1402638-LCS			% Rec Limits
		Result	Spike Amount	% Rec	
Chloride	SM 4500-Cl-E-1997(20)	23.8	25.0	95	86 - 110

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Analyzed: 4/16/14 -  
 4/17/14

Lab Control Sample Summary  
 Inorganic Parameters

Units: µg/L  
 Basis: NA

Analyte Name	Method	Lab Control Sample R1402638-LCS			% Rec Limits
		Result	Spike Amount	% Rec	
Iron, Dissolved	6010C	1040	1000	104	80 - 120
Manganese, Dissolved	6010C	489	500	98	80 - 120

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.





**Client:** CB&I  
**Project:** Varian Beverly/150148-05000000  
**Sample Matrix:** Water

**Service Request:** R1402638  
**Date Analyzed:** 4/21/14

**Lab Control Sample Summary**  
**Volatile Organic Compounds by GC/MS**

**Analytical Method:** 8260C

**Units:** µg/L  
**Basis:** NA

**Analysis Lot:** 389045

Analyte Name	Lab Control Sample RQ1404008-02			Duplicate Lab Control Sample RQ1404008-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	19.7	20.0	99	17.2	20.0	86	70 - 130	14	20
1,1,2,2-Tetrachloroethane	20.1	20.0	100	19.0	20.0	95	70 - 130	6	20
1,1,2-Trichloroethane	21.2	20.0	106	19.0	20.0	95	70 - 130	11	20
1,1-Dichloroethane (1,1-DCA)	21.3	20.0	106	18.9	20.0	95	70 - 130	12	20
1,1-Dichloroethene (1,1-DCE)	23.4	20.0	117	20.3	20.0	102	70 - 130	14	20
1,2-Dichloroethane	18.8	20.0	94	16.9	20.0	84	70 - 130	11	20
1,2-Dichloropropane	22.2	20.0	111	19.3	20.0	97	70 - 130	14	20
Acetone	21.6	20.0	108	22.0	20.0	110	40 - 160	2	20
Bromodichloromethane	20.9	20.0	105	18.6	20.0	93	70 - 130	12	20
Bromoform	19.9	20.0	100	18.5	20.0	93	70 - 130	7	20
Bromomethane	32.7	20.0	163 *	28.4	20.0	142	40 - 160	14	20
Carbon Tetrachloride	19.8	20.0	99	17.7	20.0	89	70 - 130	11	20
Chlorobenzene	21.0	20.0	105	18.6	20.0	93	70 - 130	12	20
Chloroethane	20.3	20.0	101	18.2	20.0	91	70 - 130	11	20
Chloroform	20.2	20.0	101	18.2	20.0	91	70 - 130	11	20
Chloromethane	22.9	20.0	114	20.2	20.0	101	40 - 160	12	20
Dibromochloromethane	21.2	20.0	106	18.7	20.0	94	70 - 130	12	20
Methylene Chloride	21.4	20.0	107	19.5	20.0	97	70 - 130	9	20
Tetrachloroethene (PCE)	20.7	20.0	103	18.7	20.0	93	70 - 130	10	20
Trichloroethene (TCE)	20.7	20.0	104	18.2	20.0	91	70 - 130	13	20
Trichlorofluoromethane (CFC 11)	19.2	20.0	96	16.8	20.0	84	70 - 130	13	20
Vinyl Chloride	21.7	20.0	108	19.6	20.0	98	70 - 130	10	20
cis-1,2-Dichloroethene	20.5	20.0	102	18.3	20.0	91	70 - 130	12	20
cis-1,3-Dichloropropene	21.1	20.0	105	18.9	20.0	94	70 - 130	11	20
trans-1,2-Dichloroethene	20.9	20.0	105	18.4	20.0	92	70 - 130	13	20
trans-1,3-Dichloropropene	20.7	20.0	103	18.1	20.0	91	70 - 130	13	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389276

Analyte Name	Lab Control Sample RQ1403997-03			Duplicate Lab Control Sample RQ1403997-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	21.3	20.0	107	20.3	20.0	102	70 - 130	5	20
1,1,2,2-Tetrachloroethane	20.3	20.0	102	19.4	20.0	97	70 - 130	4	20
1,1,2-Trichloroethane	20.7	20.0	103	20.3	20.0	101	70 - 130	2	20
1,1-Dichloroethane (1,1-DCA)	19.9	20.0	100	19.3	20.0	97	70 - 130	3	20
1,1-Dichloroethene (1,1-DCE)	23.2	20.0	116	22.5	20.0	112	70 - 130	3	20
1,2-Dichloroethane	21.8	20.0	109	21.0	20.0	105	70 - 130	3	20
1,2-Dichloropropane	20.2	20.0	101	19.3	20.0	96	70 - 130	4	20
Acetone	21.1	20.0	106	21.8	20.0	109	40 - 160	3	20
Bromodichloromethane	22.2	20.0	111	21.7	20.0	108	70 - 130	2	20
Bromoform	22.1	20.0	111	20.9	20.0	104	70 - 130	6	20
Bromomethane	23.9	20.0	119	22.0	20.0	110	40 - 160	8	20
Carbon Tetrachloride	22.0	20.0	110	20.5	20.0	102	70 - 130	7	20
Chlorobenzene	21.2	20.0	106	20.5	20.0	103	70 - 130	3	20
Chloroethane	22.3	20.0	112	21.6	20.0	108	70 - 130	3	20
Chloroform	20.3	20.0	102	19.6	20.0	98	70 - 130	3	20
Chloromethane	22.5	20.0	113	21.4	20.0	107	40 - 160	5	20
Dibromochloromethane	22.3	20.0	112	22.2	20.0	111	70 - 130	<1	20
Methylene Chloride	19.6	20.0	98	19.3	20.0	96	70 - 130	2	20
Tetrachloroethene (PCE)	22.4	20.0	112	20.8	20.0	104	70 - 130	8	20
Trichloroethene (TCE)	21.9	20.0	109	21.0	20.0	105	70 - 130	4	20
Trichlorofluoromethane (CFC 11)	21.7	20.0	108	20.4	20.0	102	70 - 130	6	20
Vinyl Chloride	23.3	20.0	116	22.3	20.0	112	70 - 130	4	20
cis-1,2-Dichloroethene	19.9	20.0	99	19.2	20.0	96	70 - 130	3	20
cis-1,3-Dichloropropene	21.0	20.0	105	20.0	20.0	100	70 - 130	5	20
trans-1,2-Dichloroethene	21.4	20.0	107	20.1	20.0	100	70 - 130	6	20
trans-1,3-Dichloropropene	22.2	20.0	111	21.6	20.0	108	70 - 130	2	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389330

Analyte Name	Lab Control Sample RQ1404075-03			Duplicate Lab Control Sample RQ1404075-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	20.3	20.0	101	19.0	20.0	95	70 - 130	6	20
1,1,2,2-Tetrachloroethane	21.6	20.0	108	19.7	20.0	99	70 - 130	9	20
1,1,2-Trichloroethane	22.1	20.0	110	20.2	20.0	101	70 - 130	9	20
1,1-Dichloroethane (1,1-DCA)	21.2	20.0	106	20.7	20.0	104	70 - 130	2	20
1,1-Dichloroethene (1,1-DCE)	23.3	20.0	116	22.7	20.0	113	70 - 130	3	20
1,2-Dichloroethane	19.2	20.0	96	18.2	20.0	91	70 - 130	5	20
1,2-Dichloropropane	23.0	20.0	115	21.3	20.0	107	70 - 130	8	20
Acetone	23.4	20.0	117	18.4	20.0	92	40 - 160	24 *	20
Bromodichloromethane	21.4	20.0	107	20.0	20.0	100	70 - 130	7	20
Bromoform	21.5	20.0	108	21.0	20.0	105	70 - 130	2	20
Bromomethane	19.9	20.0	99	19.8	20.0	99	40 - 160	<1	20
Carbon Tetrachloride	19.9	20.0	100	18.5	20.0	93	70 - 130	7	20
Chlorobenzene	21.5	20.0	107	19.9	20.0	99	70 - 130	8	20
Chloroethane	20.7	20.0	104	19.3	20.0	96	70 - 130	7	20
Chloroform	20.4	20.0	102	19.8	20.0	99	70 - 130	3	20
Chloromethane	23.5	20.0	118	21.8	20.0	109	40 - 160	8	20
Dibromochloromethane	22.8	20.0	114	20.8	20.0	104	70 - 130	9	20
Methylene Chloride	21.8	20.0	109	20.7	20.0	103	70 - 130	5	20
Tetrachloroethene (PCE)	21.9	20.0	110	19.8	20.0	99	70 - 130	10	20
Trichloroethene (TCE)	20.4	20.0	102	20.1	20.0	100	70 - 130	2	20
Trichlorofluoromethane (CFC 11)	19.1	20.0	95	18.4	20.0	92	70 - 130	3	20
Vinyl Chloride	22.0	20.0	110	21.0	20.0	105	70 - 130	5	20
cis-1,2-Dichloroethene	21.3	20.0	106	19.7	20.0	98	70 - 130	8	20
cis-1,3-Dichloropropene	21.6	20.0	108	20.3	20.0	102	70 - 130	6	20
trans-1,2-Dichloroethene	21.4	20.0	107	20.5	20.0	103	70 - 130	4	20
trans-1,3-Dichloropropene	21.7	20.0	108	20.1	20.0	101	70 - 130	7	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402638  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA


Analysis Lot: 389046

Analyte Name	Lab Control Sample RQ1404087-02			Duplicate Lab Control Sample RQ1404087-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	18.1	20.0	90	16.0	20.0	80	70 - 130	12	20
1,1,2,2-Tetrachloroethane	18.9	20.0	94	17.2	20.0	86	70 - 130	9	20
1,1,2-Trichloroethane	22.5	20.0	113	20.3	20.0	102	70 - 130	10	20
1,1-Dichloroethane (1,1-DCA)	20.5	20.0	102	18.1	20.0	90	70 - 130	12	20
1,1-Dichloroethene (1,1-DCE)	20.6	20.0	103	18.6	20.0	93	70 - 130	10	20
1,2-Dichloroethane	19.9	20.0	100	17.7	20.0	88	70 - 130	12	20
1,2-Dichloropropane	22.6	20.0	113	19.6	20.0	98	70 - 130	14	20
Acetone	24.6	20.0	123	19.8	20.0	99	40 - 160	22 *	20
Bromodichloromethane	21.4	20.0	107	18.5	20.0	92	70 - 130	14	20
Bromoform	22.3	20.0	111	20.0	20.0	100	70 - 130	11	20
Bromomethane	30.1	20.0	150	26.4	20.0	132	40 - 160	13	20
Carbon Tetrachloride	17.6	20.0	88	15.3	20.0	76	70 - 130	14	20
Chlorobenzene	20.4	20.0	102	18.0	20.0	90	70 - 130	13	20
Chloroethane	19.0	20.0	95	16.1	20.0	81	70 - 130	17	20
Chloroform	19.7	20.0	99	17.8	20.0	89	70 - 130	10	20
Chloromethane	21.5	20.0	108	19.4	20.0	97	40 - 160	10	20
Dibromochloromethane	22.4	20.0	112	19.8	20.0	99	70 - 130	13	20
Methylene Chloride	22.1	20.0	110	19.7	20.0	98	70 - 130	12	20
Tetrachloroethene (PCE)	18.5	20.0	92	16.9	20.0	84	70 - 130	9	20
Trichloroethene (TCE)	22.5	20.0	113	19.3	20.0	96	70 - 130	15	20
Trichlorofluoromethane (CFC 11)	16.7	20.0	84	15.1	20.0	76	70 - 130	10	20
Vinyl Chloride	20.0	20.0	100	17.8	20.0	89	70 - 130	11	20
cis-1,2-Dichloroethene	20.1	20.0	100	17.8	20.0	89	70 - 130	12	20
cis-1,3-Dichloropropene	20.9	20.0	104	18.1	20.0	90	70 - 130	14	20
trans-1,2-Dichloroethene	20.1	20.0	101	17.6	20.0	88	70 - 130	13	20
trans-1,3-Dichloropropene	21.5	20.0	108	18.6	20.0	93	70 - 130	15	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <b>1</b>																
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> CLP GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 625 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCB's <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) <b>Chloride</b>												Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____			
150 Royall Street																				
Canton, MA 02021																				
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@cbi.com</b>																		
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <b>DANIEL C. VARRY</b>		REMARKS/ ALTERNATE DESCRIPTION																
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME		MATRIX																
<b>SIRHA-7A</b>		<b>4/10/14</b>	<b>1300</b>	<b>GW</b>	<b>3</b>	<b>3</b>														
<b>SIRHA-7B</b>		<b>4/10/14</b>	<b>1330</b>		<b>3</b>	<b>3</b>														
<b>OB24-S</b>		<b>4/10/14</b>	<b>1400</b>		<b>3</b>	<b>3</b>														
<b>MW-33B</b>		<b>4/11/14</b>	<b>0630</b>		<b>3</b>	<b>3</b>														
<b>TB-3</b>		<b>4/11/14</b>	<b>0650</b>		<b>3</b>	<b>3</b>														
<b>AP-19 (25')</b>		<b>4/11/14</b>	<b>0715</b>		<b>5</b>	<b>3</b>														
<b>AP-20 (16')</b>		<b>4/11/14</b>	<b>0800</b>		<b>5</b>	<b>3</b>														
<b>AP-21 (23')</b>		<b>4/11/14</b>	<b>0900</b>		<b>5</b>	<b>3</b>														
<b>AP-22 (20')</b>		<b>4/11/14</b>	<b>0930</b>		<b>5</b>	<b>3</b>														
<b>B-2 (11')</b>		<b>4/11/14</b>	<b>1000</b>		<b>3</b>	<b>3</b>														
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field filtered Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD & PDF of report to: Catherine.Joe@cbi.com.				TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day 2 day 3 day 4 day 5 day <input checked="" type="checkbox"/> Standard				REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw				INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>								
See OAPP <input type="checkbox"/>				REQUESTED REPORT DATE				Edata <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				<b>R1402638</b> <b>7 Y</b> CB&I Environmental & Infrastructure Varian Beverly 								
STATE WHERE SAMPLES WERE COLLECTED:																				
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY						
Signature		Signature		Signature		Signature		Signature		Signature		Signature		Signature						
Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name						
Firm		Firm		Firm		Firm		Firm		Firm		Firm		Firm						
Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time						

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																									
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <b>1</b> <b>20</b>																									
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 625 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCB's <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) <b>Chloride</b>												Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____												
150 Royall Street																													
Canton, MA 02021																													
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@CBI.com</b>																											
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <b>DANISLE C. LEMAY</b>																											
CLIENT SAMPLE ID	FOR OFFICE USE ONLY		SAMPLING		MATRIX																		REMARKS/ ALTERNATE DESCRIPTION						
	LAB ID	DATE	TIME																										
<b>OB38-DO (44')</b>			<b>4/11/14</b>	<b>1030</b>	<b>GW</b>	<b>3</b>	<b>3</b>																						
<b>AP-27-DO (56')</b>			<b>4/11/14</b>	<b>1100</b>		<b>5</b>	<b>3</b>																						
<b>EB-4</b>			<b>4/11/14</b>	<b>1130</b>		<b>3</b>	<b>3</b>																						
<b>OB27-BR (74')</b>			<b>4/11/14</b>	<b>1200</b>		<b>5</b>	<b>3</b>																						
<b>CL-115 (24')</b>			<b>4/11/14</b>	<b>1230</b>		<b>3</b>	<b>3</b>																						
<b>CL-11DO (48')</b>			<b>4/11/14</b>	<b>1300</b>		<b>3</b>	<b>3</b>																						
<b>OB43-S (15')</b>			<b>4/8/14</b>	<b>1300</b>		<b>3</b>	<b>3</b>																						
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field Filtered Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD & PDF of report to: Catherine.Joe@CBI.com. <b>OB43-S (15') added as per Perrinella sample rec'd</b>				TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) ___ 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day <input checked="" type="checkbox"/> Standard				REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data				INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>																	
See OAPP <input type="checkbox"/> <b>Haley</b> <b>4/14/14 - 4/11/14</b>				REQUESTED REPORT DATE				Edata <input checked="" type="checkbox"/> Yes ___ No				<b>R1402638</b> <b>7 Y</b> CB&I Environmental & Infrastructure Varian Beverly 																	
STATE WHERE SAMPLES WERE COLLECTED:																													
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY			
Signature		Signature		Signature		Signature		Signature		Signature		Signature		Signature		Signature		Signature		Signature		Signature		Signature		Signature		Signature	
Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name	
Firm		Firm		Firm		Firm		Firm		Firm		Firm		Firm		Firm		Firm		Firm		Firm		Firm		Firm		Firm	
Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time	

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																	
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <u>1</u> <u>2</u> <u>0</u>																	
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 825 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCB's <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS: TOTAL (List in comments below) METALS: DISSOLVED (List in comments below) <u>Fe</u> <u>Mn</u> <u>Chloride</u>												Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____				
150 Royall Street																					
Canton, MA 02021																					
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@cbi.com</b>																			
Sampler's Signature 		Sampler's Printed Name <b>Paul Hedacek</b>																			
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID		SAMPLING DATE TIME		MATRIX															
<b>BR5 Zone 1</b>				<b>4-11-14 0830</b>		<b>GW</b>		<b>3 3</b>													
<b>BR5 Zone 2</b>				<b>0900</b>				<b>3 3</b>													
<b>BR5 Zone 3</b>				<b>0800</b>				<b>5 3</b>													
<b>CH9-BR Zone 1</b>				<b>0930</b>				<b>3 3</b>													
<b>CH9-BR Zone 2</b>				<b>000</b>				<b>3 3</b>													
<b>CH9-BR Zone 3</b>				<b>1030</b>				<b>3 3</b>													
<b>BR6 Zone 1</b>				<b>1200</b>				<b>3 3</b>													
<b>BR6 Zone 2</b>				<b>1230</b>				<b>3 3</b>													
<b>BR6 Zone 3</b>				<b>1300</b>				<b>3 3</b>													
<b>CH8-BR Zone 1</b>				<b>1330</b>				<b>3 3</b>													
SPECIAL INSTRUCTIONS/COMMENTS <b>Metals = Field filtered</b> <b>Site specific VOC list.</b> <b>Massachusetts CAM analyses reporting and QA/QC.</b> <b>Please email GISKey formatted EDD and PDF of report to:</b> <b>Catherine.Joe@cbi.com.</b>				TURNAROUND REQUIREMENTS <input type="checkbox"/> RUSH (SURCHARGES APPLY) <input type="checkbox"/> 1 day <input type="checkbox"/> 2 day <input type="checkbox"/> 3 day <input type="checkbox"/> 4 day <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard				REPORT REQUIREMENTS <input type="checkbox"/> I. Results Only <input type="checkbox"/> II. Results + QC Summaries (LCS, DUP, MS/MSD as required) <input type="checkbox"/> III. Results + QC and Calibration Summaries <input type="checkbox"/> IV. Data Validation Report with Raw Data				INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>									
See QAPP <input type="checkbox"/>				REQUESTED REPORT DATE				Edata <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				<b>R1402638</b>									
STATE WHERE SAMPLES WERE COLLECTED:																					
RELINQUISHED BY  Signature <b>Paul Hedacek</b> Printed Name <b>CB&amp;I</b> Firm <b>4-11-14 1500</b> Date/Time				RECEIVED BY  Signature <b>Amy J. Taylor</b> Printed Name <b>Amy J. Taylor</b> Firm <b>CB&amp;I</b> Date/Time <b>4/14/14 0825</b>				RELINQUISHED BY				RECEIVED BY									
Signature				Signature				Signature				Signature									
Printed Name				Printed Name				Printed Name				Printed Name									
Firm				Firm				Firm				Firm									
Date/Time				Date/Time				Date/Time				Date/Time									

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																									
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <b>1</b> <b>20</b>																									
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOA's <input checked="" type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 625 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCB's <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS TOTAL (List in comments below) METALS DISSOLVED (List in comments below) <b>Fe + Mn Chloride</b>												Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____												
150 Royall Street																													
Canton, MA 02021																													
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@CBI.com</b>																											
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <b>Paul Leduca</b>																											
CLIENT SAMPLE ID	FOR OFFICE USE ONLY		SAMPLING		MATRIX																		REMARKS/ ALTERNATE DESCRIPTION						
	LAB ID	DATE	TIME																										
<b>CL8-BR Zone 2</b>		<b>4-11-14</b>	<b>1400</b>	<b>GW</b>	<b>3</b>	<b>3</b>																							
<b>CL8-BR Zone 3</b>		<b>↓</b>	<b>1430</b>		<b>3</b>	<b>3</b>																							
SPECIAL INSTRUCTIONS/COMMENTS <b>Metals = Field filtered</b> <b>Site specific VOC list.</b> <b>Massachusetts CAM analyses reporting and QA/QC.</b> <b>Please email GISKey formatted EDD &amp; PDF of report to:</b> <b>Catherine.Joe@cbi.com.</b>					TURNAROUND REQUIREMENTS ____ RUSH (SURCHARGES APPLY) ____ 1 day ____ 2 day ____ 3 day ____ 4 day ____ 5 day <input checked="" type="checkbox"/> Standard  REQUESTED REPORT DATE _____					REPORT REQUIREMENTS ____ I. Results Only ____ II. Results + OC Summaries (LCS, DUP, MS/MSD as required) ____ III. Results + OC and Calibration Summaries ____ IV. Data Validation Report with Raw Data  Edata <input checked="" type="checkbox"/> Yes ____ No					INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>  <b>R1402630</b>														
STATE WHERE SAMPLES WERE COLLECTED:																													
RELINQUISHED BY <i>[Signature]</i> Signature <b>Paul Leduca</b> Printed Name <b>CBI</b> Firm <b>4-11-14 1500</b> Date/Time					RECEIVED BY <i>[Signature]</i> Signature <b>Shirley G. [unclear]</b> Printed Name <b>Shirley G. [unclear]</b> Firm <b>4/14/14 0825</b> Date/Time					RELINQUISHED BY					RECEIVED BY					RELINQUISHED BY					RECEIVED BY				





# Cooler Receipt and Preservation Check Form

Project/Client COTE Folder Number 214-2638

Cooler received on 4/14/14 by: [Signature] COURIER: ALS  UPS FEDEX VELOCITY CLIENT

- Were custody seals on outside of cooler? YES  NO
- Were custody papers properly filled out (ink, signed, etc.)? ~~YES~~  NO  signed
- Did all bottles arrive in good condition (unbroken)?  YES NO
- Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES  NO  N/A
- Were Ice or Ice packs present? melted YES  NO
- Where did the bottles originate? ALS/ROC, CLIENT
- Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
- Temperature of cooler(s) upon receipt: 13.1°

Is the temperature within 0° - 6° C?: Y  N  Y N  Y N  Y N  Y N

If No, Explain Below Date/Time Temperatures Taken: 4/14/14 0828

Thermometer ID: IR GUN#3 IR GUN#4 Reading From: Temp Blank Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location R-002 by [Signature] on 4/14/14 at 0833  
5035 samples placed in storage location by on at

PC Secondary Review: [Signature] 4/14/14

Cooler Breakdown: Date: 4/14/14 Time: 1456 by: JFS

- Were all bottle labels complete (i.e. analysis, preservation, etc.)?  YES NO
- Did all bottle labels and tags agree with custody papers? YES  NO
- Were correct containers used for the tests indicated? YES NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	YES NO		Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK  No = Samples were preserved at lab as listed  PM OK to Adjust:
		YES	NO							
≥12	NaOH									
≤2	HNO <sub>3</sub>	<input checked="" type="checkbox"/>		<u>check</u>						
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-			*Not to be tested before analysis - pH tested and recorded by VOAs or GenChem on a separate worksheet				
	Zn Aceta	-	-							
	HCl	*	*	<u>check</u>						

Bottle lot numbers: \_\_\_\_\_

Other Comments: \* TB-3 was labeled as ED-3. This was determined because date & time matched up for missing sample.

PC Secondary Review: [Signature] 4/24/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



# Cooler Receipt and Preservation Check Form

Project/Client OB&T Folder Number 114-2595

Cooler received on 4/11 by: JCS COURIER: ALS  UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler?  YES NO
2. Were custody papers properly filled out (ink, signed, etc.)?  YES NO
3. Did all bottles arrive in good condition (unbroken)?  YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES  NO N/A
5. Were Ice or Ice packs present?  YES NO
6. Where did the bottles originate? ALS/ROE, CLIENT
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set  N/A
8. Temperature of cooler(s) upon receipt: 5.7 5.5

Is the temperature within 0° - 6° C?:  Y N  Y N Y N Y N  
If No, Explain Below Date/Time Temperatures Taken: 4/11/14 0905

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location room by JCS on 4/11/14 at 0906  
5035 samples placed in storage location by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: JMS 4/11/14

Cooler Breakdown: Date: 4/14/14 Time: 0804 by: JCS

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)?  YES  NO
2. Did all bottle labels and tags agree with custody papers?  YES  NO
3. Were correct containers used for the tests indicated?  YES  NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated  N/A

### Explain any discrepancies:

pH	Reagent			Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK
		YES	NO							
≥12	NaOH									No = Samples were preserved at lab as listed
≤2	HNO <sub>3</sub>									
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						PM OK to Adjust: _____
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-							
	Zn Aceta	-	-							
	HCl	*	*	<u>4112120</u>	<u>3/15</u>					

Bottle lot numbers: 4-002-003

Other Comments:

labels on samples 17, 18, 20 do not match the ID's on coc.  
this temp sheet applicable to OB43-5 (15')

PC Secondary Review: JMS 4/24/14

\*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150151.18  
**Prepared By:** Dale Dailey **Date :** 5/22/2014  
**Matrix:** Air  
**Analyte Group :** Volatile Organics **Analytical Method :** EPA Method TO-15  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1402683  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/10/14	VOC TO-15		30 Days	4/18/14

**Sample temperature within QC limits:** NA - Air

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? Yes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :** NA

**Trip Blank ID :** NA

**Method Blank:** EPA TO-15 4/18/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

(1) All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method. All initial and continuing calibrations were compliant.

(2) various compounds for BLDG2-6 and BLDG2-7 have been flagged with an "E" as being outside the calibration range of the instrument. The samples were repeated at dilutions and both sets of data have been reported out.

**Reviewed By:** Pernilla Haley, 6/9/14



April 23, 2014

Service Request No: R1402683

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150151-07**

Dear Mr. Cadorette:

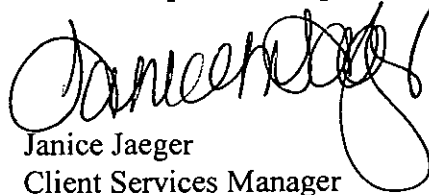
Enclosed are the results of the sample(s) submitted to our laboratory on April 15, 2014. For your reference, these analyses have been assigned our service request number **R1402683**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

  
Janice Jaeger  
Client Services Manager

Page 1 of 20

## ALS Environmental

**Client:** CB&I.  
**Project:** Varian Beverly  
**Sample Matrix:** Air

**Service Request No.:** R1402683  
**Project No.:** 150151-07  
**Date Received:** 04/15/14

### CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS environmental. This report contains analytical results for samples designated for Tier II, MASS. CAM deliverables. When appropriate to the method, blank and LCS results have been reported with each analytical test.

#### Sample Receipt

CB&I air samples were collected on 04/10/14 and received at ALS in good condition as noted on the receipt and preservation check form. The samples were stored in the laboratory at room temperature prior to analysis. See the ALS case narrative for a cross-reference between Client ID and ALS Job #.

#### TO - 15 Air Analysis

Six air samples were analyzed for a site list of Volatile Organics by EPA method TO-15.

All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method.

Various compounds for BLDG2-6 and BLDG2-7 have been flagged with an "E" as being outside the calibration range of the instrument. The samples were repeated at dilutions and both sets of data have been reported out.

All initial and continuing calibrations were compliant.

All surrogate standard recoveries were within QC limits.

The Method blanks were free of contamination.

The LCS recoveries were all within QC limits of 70 – 130 %.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150151

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1402683-001-006

 Matrices: Groundwater/Surface Water    Soil/Sediment    Drinking Water    Air  Other:

**CAM Protocol (check all that apply below):**

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B <input checked="" type="checkbox"/>
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X Yes    No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X Yes    No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X Yes    No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X Yes    No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes    No Yes <input checked="" type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X Yes    No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X Yes    No <sup>1</sup>
----------	---	--------------------------

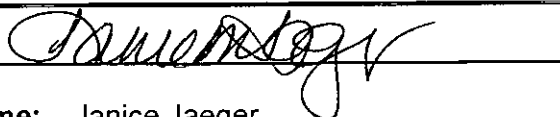
**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X Yes    No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes    X No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:



 Position: Client Services  
Manager

 Printed Name: Janice Jaeger

 Date: 04/28/14
**00003**

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402683

<u>Lab ID</u>	<u>Client ID</u>
R1402683-001	BLDG2- SV1
R1402683-002	BLDG2- SV2
R1402683-003	BLDG3- VP7
R1402683-004	BLDG6- SV1
R1402683-005	BLDG2-6
R1402683-006	BLDG2-7

**REPORT QUALIFIERS AND DEFINITIONS**

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

**Lab ID # for Massachusetts Certification**  
M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.



*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis*

*Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

A handwritten signature in cursive script, appearing to read "Oscar C. Pincus".

*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CaCO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	

June 25, 2013

\*= Provisional Certification

Page 1 of 2

00007

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014

<u>Analytes</u>	<u>Methods</u>
CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 365.1
PHOSPHORUS, TOTAL	EPA 365.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-07  
 Sample Matrix: Air  
 Sample Name: BLDG2- SV1  
 Lab Code: R1402683-001

Service Request: R1402683  
 Date Collected: 4/10/14 1527  
 Date Received: 4/15/14

Analytical Method: TO-15

Date Analyzed: 4/18/14 1248  
 Canister Dilution Factor: 1.52

Initial Pressure (psig): -2.70 Final Pressure (psig): 3.60

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
74-87-3	Chloromethane	0.080	8600	8600	4100	4100	U
75-01-4	Vinyl Chloride	0.080	1100	1100	450	450	U
74-83-9	Bromomethane	0.080	8200	8200	2100	2100	U
75-00-3	Chloroethane	0.080	11000	11000	4200	4200	U
67-64-1	Acetone	0.080	95000	95000	40000	40000	U
75-69-4	Trichlorofluoromethane (CFC 11)	0.080	12000	12000	2100	2100	U
75-35-4	1,1-Dichloroethene	0.080	8400	8400	2100	2100	U
75-09-2	Methylene Chloride	0.080	7200	7200	2100	2100	U
156-60-5	trans-1,2-Dichloroethene	0.080	8400	8400	2100	2100	U
75-34-3	1,1-Dichloroethane (1,1-DCA)	0.080	8600	8600	2100	2100	U
156-59-2	cis-1,2-Dichloroethene	0.080	8400	8400	2100	2100	U
67-66-3	Chloroform	0.080	10000	10000	2100	2100	U
107-06-2	1,2-Dichloroethane	0.080	8600	8600	2100	2100	U
71-55-6	1,1,1-Trichloroethane (TCA)	0.080	11000	11000	2100	2100	U
56-23-5	Carbon Tetrachloride	0.080	1300	1300	210	210	U
78-87-5	1,2-Dichloropropane	0.080	9700	9700	2100	2100	U
75-27-4	Bromodichloromethane	0.080	2900	2900	430	430	U
79-01-6	Trichloroethene (TCE)	0.080	48000	1100	9000	210	U
10061-01-5	cis-1,3-Dichloropropene	0.080	19000	19000	4200	4200	U
10061-02-6	trans-1,3-Dichloropropene	0.080	9500	9500	2100	2100	U
79-00-5	1,1,2-Trichloroethane	0.080	11000	11000	2100	2100	U
124-48-1	Dibromochloromethane	0.080	3600	3600	420	420	U
127-18-4	Tetrachloroethene (PCE)	0.080	1200000	1500	180000	220	U
108-90-7	Chlorobenzene	0.080	9700	9700	2100	2100	U
75-25-2	Bromoform	0.080	22000	22000	2100	2100	U
79-34-5	1,1,2,2-Tetrachloroethane	0.080	2900	2900	420	420	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	92	70-130	4/18/14 1248	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-07  
 Sample Matrix: Air  
 Sample Name: BLDG2- SV2  
 Lab Code: R1402683-002

Service Request: R1402683  
 Date Collected: 4/10/14 1537  
 Date Received: 4/15/14

Analytical Method: TO-15

Date Analyzed: 4/18/14 1804  
 Canister Dilution Factor: 1.64

Initial Pressure (psig): -3.49 Final Pressure (psig): 3.71

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
74-87-3	Chloromethane	50	15	15	7.2	7.2	U
75-01-4	Vinyl Chloride	50	2.0	2.0	0.77	0.77	U
74-83-9	Bromomethane	50	14	14	3.6	3.6	U
75-00-3	Chloroethane	50	19	19	7.2	7.2	U
67-64-1	Acetone	50	160	160	69	69	U
75-69-4	Trichlorofluoromethane (CFC 11)	50	20	20	3.6	3.6	U
75-35-4	1,1-Dichloroethene	50	14	14	3.6	3.6	U
75-09-2	Methylene Chloride	50	12	12	3.6	3.6	U
156-60-5	trans-1,2-Dichloroethene	50	14	14	3.6	3.6	U
75-34-3	1,1-Dichloroethane (1,1-DCA)	50	15	15	3.6	3.6	U
156-59-2	cis-1,2-Dichloroethene	50	14	14	3.6	3.6	U
67-66-3	Chloroform	50	18	18	3.6	3.6	U
107-06-2	1,2-Dichloroethane	50	15	15	3.6	3.6	U
71-55-6	1,1,1-Trichloroethane (TCA)	50	20	20	3.6	3.6	U
56-23-5	Carbon Tetrachloride	50	2.3	2.3	0.37	0.37	U
78-87-5	1,2-Dichloropropane	50	17	17	3.6	3.6	U
75-27-4	Bromodichloromethane	50	4.9	4.9	0.73	0.73	U
79-01-6	Trichloroethene (TCE)	50	31	2.0	5.7	0.37	U
10061-01-5	cis-1,3-Dichloropropene	50	33	33	7.2	7.2	U
10061-02-6	trans-1,3-Dichloropropene	50	16	16	3.6	3.6	U
79-00-5	1,1,2-Trichloroethane	50	20	20	3.6	3.6	U
124-48-1	Dibromochloromethane	50	6.2	6.2	0.73	0.73	U
127-18-4	Tetrachloroethene (PCE)	50	11	2.6	1.6	0.39	U
108-90-7	Chlorobenzene	50	17	17	3.6	3.6	U
75-25-2	Bromoform	50	37	37	3.6	3.6	U
79-34-5	1,1,2,2-Tetrachloroethane	50	4.9	4.9	0.72	0.72	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	96	70-130	4/18/14 1804	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-07  
 Sample Matrix: Air  
 Sample Name: BLDG3- VP7  
 Lab Code: R1402683-003

Service Request: R1402683  
 Date Collected: 4/10/14 1534  
 Date Received: 4/15/14

Analytical Method: TO-15

Date Analyzed: 4/18/14 2150  
 Canister Dilution Factor: 1.61

Initial Pressure (psig): -3.34 Final Pressure (psig): 3.59

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
74-87-3	Chloromethane	115	6.3	6.3	3.1	3.1	U
75-01-4	Vinyl Chloride	115	0.84	0.84	0.33	0.33	U
74-83-9	Bromomethane	115	6.0	6.0	1.6	1.6	U
75-00-3	Chloroethane	115	8.1	8.1	3.1	3.1	U
67-64-1	Acetone	115	130	70	57	29	
75-69-4	Trichlorofluoromethane (CFC 11)	115	8.7	8.7	1.5	1.5	U
75-35-4	1,1-Dichloroethene	115	6.2	6.2	1.6	1.6	U
75-09-2	Methylene Chloride	115	5.3	5.3	1.5	1.5	U
156-60-5	trans-1,2-Dichloroethene	115	6.2	6.2	1.6	1.6	U
75-34-3	1,1-Dichloroethane (1,1-DCA)	115	6.3	6.3	1.6	1.6	U
156-59-2	cis-1,2-Dichloroethene	115	13	6.2	3.2	1.6	
67-66-3	Chloroform	115	39	7.6	8.1	1.5	
107-06-2	1,2-Dichloroethane	115	6.3	6.3	1.6	1.6	U
71-55-6	1,1,1-Trichloroethane (TCA)	115	8.4	8.4	1.5	1.5	U
56-23-5	Carbon Tetrachloride	115	0.98	0.98	0.16	0.16	U
78-87-5	1,2-Dichloropropane	115	7.1	7.1	1.5	1.5	U
75-27-4	Bromodichloromethane	115	1.6	0.24	0.31	0.31	
79-01-6	Trichloroethene (TCE)	115	95	0.84	18	0.16	
10061-01-5	cis-1,3-Dichloropropene	115	14	14	3.1	3.1	U
10061-02-6	trans-1,3-Dichloropropene	115	7.0	7.0	1.5	1.5	U
79-00-5	1,1,2-Trichloroethane	115	8.4	8.4	1.5	1.5	U
124-48-1	Dibromochloromethane	115	2.7	2.7	0.31	0.31	U
127-18-4	Tetrachloroethene (PCE)	115	520	1.1	77	0.17	
108-90-7	Chlorobenzene	115	7.1	7.1	1.6	1.6	U
75-25-2	Bromoform	115	16	16	1.5	1.5	U
79-34-5	1,1,2,2-Tetrachloroethane	115	2.1	2.1	0.31	0.31	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	94	70-130	4/18/14 2150	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-07  
 Sample Matrix: Air  
 Sample Name: BLDG6- SV1  
 Lab Code: R1402683-004

Service Request: R1402683  
 Date Collected: 4/10/14 1530  
 Date Received: 4/15/14

Analytical Method: TO-15

Date Analyzed: 4/18/14 1335  
 Canister Dilution Factor: 1.49

Initial Pressure (psig): -2.46      Final Pressure (psig): 3.54

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
74-87-3	Chloromethane	1.4	480	480	230	230	U
75-01-4	Vinyl Chloride	1.4	64	64	25	25	U
74-83-9	Bromomethane	1.4	460	460	120	120	U
75-00-3	Chloroethane	1.4	620	620	230	230	U
67-64-1	Acetone	1.4	5300	5300	2200	2200	U
75-69-4	Trichlorofluoromethane (CFC 11)	1.4	660	660	120	120	U
75-35-4	1,1-Dichloroethene	1.4	470	470	120	120	U
75-09-2	Methylene Chloride	1.4	400	400	120	120	U
156-60-5	trans-1,2-Dichloroethene	1.4	470	470	120	120	U
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.4	480	480	120	120	U
156-59-2	cis-1,2-Dichloroethene	1.4	470	470	120	120	U
67-66-3	Chloroform	1.4	570	570	120	120	U
107-06-2	1,2-Dichloroethane	1.4	480	480	120	120	U
71-55-6	1,1,1-Trichloroethane (TCA)	1.4	640	640	120	120	U
56-23-5	Carbon Tetrachloride	1.4	75	75	12	12	U
78-87-5	1,2-Dichloropropane	1.4	540	540	120	120	U
75-27-4	Bromodichloromethane	1.4	160	160	24	24	U
79-01-6	Trichloroethene (TCE)	1.4	22000	64	4100	12	
10061-01-5	cis-1,3-Dichloropropene	1.4	1100	1100	230	230	U
10061-02-6	trans-1,3-Dichloropropene	1.4	530	530	120	120	U
79-00-5	1,1,2-Trichloroethane	1.4	640	640	120	120	U
124-48-1	Dibromochloromethane	1.4	200	200	24	24	U
127-18-4	Tetrachloroethene (PCE)	1.4	48000	85	7100	13	
108-90-7	Chlorobenzene	1.4	540	540	120	120	U
75-25-2	Bromoform	1.4	1200	1200	120	120	U
79-34-5	1,1,2,2-Tetrachloroethane	1.4	160	160	23	23	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	92	70-130	4/18/14 1335	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-07  
 Sample Matrix: Air  
 Sample Name: BLDG2-6  
 Lab Code: R1402683-005

Service Request: R1402683  
 Date Collected: 4/10/14 1726  
 Date Received: 4/15/14

Analytical Method: TO-15

Date Analyzed: 4/18/14 1557  
 Canister Dilution Factor: 1.43

Initial Pressure (psig): -1.92      Final Pressure (psig): 3.55

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
74-87-3	Chloromethane	800	0.90	0.80	0.43	0.39	
75-01-4	Vinyl Chloride	800	0.11	0.11	0.042	0.042	U
74-83-9	Bromomethane	800	0.77	0.77	0.20	0.20	U
75-00-3	Chloroethane	800	1.0	1.0	0.39	0.39	U
67-64-1	Acetone	800	88	8.9	37	3.8	E
75-69-4	Trichlorofluoromethane (CFC 11)	800	1.3	1.1	0.23	0.20	
75-35-4	1,1-Dichloroethene	800	0.79	0.79	0.20	0.20	U
75-09-2	Methylene Chloride	800	0.68	0.68	0.20	0.20	U
156-60-5	trans-1,2-Dichloroethene	800	0.79	0.79	0.20	0.20	U
75-34-3	1,1-Dichloroethane (1,1-DCA)	800	0.80	0.80	0.20	0.20	U
156-59-2	cis-1,2-Dichloroethene	800	0.79	0.79	0.20	0.20	U
67-66-3	Chloroform	800	0.97	0.97	0.20	0.20	U
107-06-2	1,2-Dichloroethane	800	0.80	0.80	0.20	0.20	U
71-55-6	1,1,1-Trichloroethane (TCA)	800	1.1	1.1	0.20	0.20	U
56-23-5	Carbon Tetrachloride	800	0.48	0.13	0.077	0.020	
78-87-5	1,2-Dichloropropane	800	0.91	0.91	0.20	0.20	U
75-27-4	Bromodichloromethane	800	0.27	0.27	0.040	0.040	U
79-01-6	Trichloroethene (TCE)	800	0.96	0.11	0.18	0.020	
10061-01-5	cis-1,3-Dichloropropene	800	1.8	1.8	0.39	0.39	U
10061-02-6	trans-1,3-Dichloropropene	800	0.89	0.89	0.20	0.20	U
79-00-5	1,1,2-Trichloroethane	800	1.1	1.1	0.20	0.20	U
124-48-1	Dibromochloromethane	800	0.34	0.34	0.040	0.040	U
127-18-4	Tetrachloroethene (PCE)	800	4.0	0.14	0.59	0.021	
108-90-7	Chlorobenzene	800	0.91	0.91	0.20	0.20	U
75-25-2	Bromoform	800	2.0	2.0	0.20	0.20	U
79-34-5	1,1,2,2-Tetrachloroethane	800	0.27	0.27	0.039	0.039	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	99	70-130	4/18/14 1557	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-07  
 Sample Matrix: Air  
 Sample Name: BLDG2-6  
 Lab Code: R1402683-005  
 Run Type: Dilution

Service Request: R1402683  
 Date Collected: 4/10/14 1726  
 Date Received: 4/15/14

Analytical Method: TO-15

Date Analyzed: 4/18/14 1934  
 Canister Dilution Factor: 1.43

Initial Pressure (psig): -1.92 Final Pressure (psig): 3.55

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
74-87-3	Chloromethane	250	2.6	2.6	1.2	1.2	U
75-01-4	Vinyl Chloride	250	0.34	0.34	0.13	0.13	U
74-83-9	Bromomethane	250	2.5	2.5	0.63	0.63	U
75-00-3	Chloroethane	250	3.3	3.3	1.3	1.3	U
67-64-1	Acetone	250	95	29	40	12	D
75-69-4	Trichlorofluoromethane (CFC 11)	250	3.5	3.5	0.63	0.63	U
75-35-4	1,1-Dichloroethene	250	2.5	2.5	0.64	0.64	U
75-09-2	Methylene Chloride	250	2.2	2.2	0.63	0.63	U
156-60-5	trans-1,2-Dichloroethene	250	2.5	2.5	0.64	0.64	U
75-34-3	1,1-Dichloroethane (1,1-DCA)	250	2.6	2.6	0.64	0.64	U
156-59-2	cis-1,2-Dichloroethene	250	2.5	2.5	0.64	0.64	U
67-66-3	Chloroform	250	3.1	3.1	0.63	0.63	U
107-06-2	1,2-Dichloroethane	250	2.6	2.6	0.64	0.64	U
71-55-6	1,1,1-Trichloroethane (TCA)	250	3.4	3.4	0.63	0.63	U
56-23-5	Carbon Tetrachloride	250	0.46	0.40	0.073	0.064	D
78-87-5	1,2-Dichloropropane	250	2.9	2.9	0.63	0.63	U
75-27-4	Bromodichloromethane	250	0.86	0.86	0.13	0.13	U
79-01-6	Trichloroethene (TCE)	250	0.89	0.34	0.17	0.064	D
10061-01-5	cis-1,3-Dichloropropene	250	5.7	5.7	1.3	1.3	U
10061-02-6	trans-1,3-Dichloropropene	250	2.9	2.9	0.63	0.63	U
79-00-5	1,1,2-Trichloroethane	250	3.4	3.4	0.63	0.63	U
124-48-1	Dibromochloromethane	250	1.1	1.1	0.13	0.13	U
127-18-4	Tetrachloroethene (PCE)	250	3.7	0.46	0.55	0.068	D
108-90-7	Chlorobenzene	250	2.9	2.9	0.63	0.63	U
75-25-2	Bromoform	250	6.5	6.5	0.63	0.63	U
79-34-5	1,1,2,2-Tetrachloroethane	250	0.86	0.86	0.12	0.12	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	94	70-130	4/18/14 1934	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-07  
 Sample Matrix: Air  
 Sample Name: BLDG2-7  
 Lab Code: R1402683-006

Service Request: R1402683  
 Date Collected: 4/10/14 1725  
 Date Received: 4/15/14

Analytical Method: TO-15

Date Analyzed: 4/18/14 1640  
 Canister Dilution Factor: 1.42

Initial Pressure (psig): -1.77      Final Pressure (psig): 3.69

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
74-87-3	Chloromethane	154	4.1	4.1	2.0	2.0	U
75-01-4	Vinyl Chloride	154	0.55	0.55	0.22	0.22	U
74-83-9	Bromomethane	154	4.0	4.0	1.0	1.0	U
75-00-3	Chloroethane	154	5.3	5.3	2.0	2.0	U
67-64-1	Acetone	154	87	46	37	19	D
75-69-4	Trichlorofluoromethane (CFC 11)	154	5.7	5.7	1.0	1.0	U
75-35-4	1,1-Dichloroethene	154	4.1	4.1	1.0	1.0	U
75-09-2	Methylene Chloride	154	3.5	3.5	1.0	1.0	U
156-60-5	trans-1,2-Dichloroethene	154	4.1	4.1	1.0	1.0	U
75-34-3	1,1-Dichloroethane (1,1-DCA)	154	4.1	4.1	1.0	1.0	U
156-59-2	cis-1,2-Dichloroethene	154	4.1	4.1	1.0	1.0	U
67-66-3	Chloroform	154	5.0	5.0	1.0	1.0	U
107-06-2	1,2-Dichloroethane	154	4.1	4.1	1.0	1.0	U
71-55-6	1,1,1-Trichloroethane (TCA)	154	5.5	5.5	1.0	1.0	U
56-23-5	Carbon Tetrachloride	154	0.65	0.65	0.10	0.10	U
78-87-5	1,2-Dichloropropane	154	4.7	4.7	1.0	1.0	U
75-27-4	Bromodichloromethane	154	1.4	1.4	0.21	0.21	U
79-01-6	Trichloroethene (TCE)	154	0.55	0.55	0.10	0.10	U
10061-01-5	cis-1,3-Dichloropropene	154	9.2	9.2	2.0	2.0	U
10061-02-6	trans-1,3-Dichloropropene	154	4.6	4.6	1.0	1.0	U
79-00-5	1,1,2-Trichloroethane	154	5.5	5.5	1.0	1.0	U
124-48-1	Dibromochloromethane	154	1.8	1.8	0.21	0.21	U
127-18-4	Tetrachloroethene (PCE)	154	0.74	0.74	0.11	0.11	U
108-90-7	Chlorobenzene	154	4.7	4.7	1.0	1.0	U
75-25-2	Bromoform	154	11	11	1.0	1.0	U
79-34-5	1,1,2,2-Tetrachloroethane	154	1.4	1.4	0.20	0.20	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	95	70-130	4/18/14 1640	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-07  
 Sample Matrix: Air  
 Sample Name: BLDG2-7  
 Lab Code: R1402683-006  
 Run Type: Dilution

Service Request: R1402683  
 Date Collected: 4/10/14 1725  
 Date Received: 4/15/14

Analytical Method: TO-15

Date Analyzed: 4/18/14 2021  
 Canister Dilution Factor: 1.42

Initial Pressure (psig): -1.77      Final Pressure (psig): 3.69

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
74-87-3	Chloromethane	500	1.3	1.3	0.62	0.62	U
75-01-4	Vinyl Chloride	500	0.17	0.17	0.067	0.067	U
74-83-9	Bromomethane	500	1.2	1.2	0.31	0.31	U
75-00-3	Chloroethane	500	1.6	1.6	0.62	0.62	U
67-64-1	Acetone	500	98	14	41	6.0	E
75-69-4	Trichlorofluoromethane (CFC 11)	500	1.8	1.8	0.31	0.31	U
75-35-4	1,1-Dichloroethene	500	1.2	1.2	0.32	0.32	U
75-09-2	Methylene Chloride	500	1.1	1.1	0.31	0.31	U
156-60-5	trans-1,2-Dichloroethene	500	1.2	1.2	0.32	0.32	U
75-34-3	1,1-Dichloroethane (1,1-DCA)	500	1.3	1.3	0.32	0.32	U
156-59-2	cis-1,2-Dichloroethene	500	1.2	1.2	0.32	0.32	U
67-66-3	Chloroform	500	1.5	1.5	0.31	0.31	U
107-06-2	1,2-Dichloroethane	500	1.3	1.3	0.32	0.32	U
71-55-6	1,1,1-Trichloroethane (TCA)	500	1.7	1.7	0.31	0.31	U
56-23-5	Carbon Tetrachloride	500	0.46	0.20	0.073	0.032	
78-87-5	1,2-Dichloropropane	500	1.4	1.4	0.31	0.31	U
75-27-4	Bromodichloromethane	500	0.43	0.43	0.064	0.064	U
79-01-6	Trichloroethene (TCE)	500	0.37	0.17	0.068	0.032	
10061-01-5	cis-1,3-Dichloropropene	500	2.8	2.8	0.63	0.63	U
10061-02-6	trans-1,3-Dichloropropene	500	1.4	1.4	0.31	0.31	U
79-00-5	1,1,2-Trichloroethane	500	1.7	1.7	0.31	0.31	U
124-48-1	Dibromochloromethane	500	0.54	0.54	0.063	0.063	U
127-18-4	Tetrachloroethene (PCE)	500	0.36	0.23	0.054	0.034	
108-90-7	Chlorobenzene	500	1.4	1.4	0.31	0.31	U
75-25-2	Bromoform	500	3.2	3.2	0.31	0.31	U
79-34-5	1,1,2,2-Tetrachloroethane	500	0.43	0.43	0.062	0.062	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	94	70-130	4/18/14 2021	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-07  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1403891-01

Service Request: R1402683  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 4/18/14 0943

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
74-87-3	Chloromethane	1000	0.45	0.45	0.22	0.22	U
75-01-4	Vinyl Chloride	1000	0.060	0.060	0.023	0.023	U
74-83-9	Bromomethane	1000	0.43	0.43	0.11	0.11	U
75-00-3	Chloroethane	1000	0.58	0.58	0.22	0.22	U
67-64-1	Acetone	1000	5.0	5.0	2.1	2.1	U
75-69-4	Trichlorofluoromethane (CFC 11)	1000	0.62	0.62	0.11	0.11	U
75-35-4	1,1-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-09-2	Methylene Chloride	1000	0.38	0.38	0.11	0.11	U
156-60-5	trans-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-34-3	1,1-Dichloroethane (1,1-DCA)	1000	0.45	0.45	0.11	0.11	U
156-59-2	cis-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
67-66-3	Chloroform	1000	0.54	0.54	0.11	0.11	U
107-06-2	1,2-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.60	0.60	0.11	0.11	U
56-23-5	Carbon Tetrachloride	1000	0.070	0.070	0.011	0.011	U
78-87-5	1,2-Dichloropropane	1000	0.51	0.51	0.11	0.11	U
75-27-4	Bromodichloromethane	1000	0.15	0.15	0.022	0.022	U
79-01-6	Trichloroethene (TCE)	1000	0.060	0.060	0.011	0.011	U
10061-01-5	cis-1,3-Dichloropropene	1000	1.0	1.0	0.22	0.22	U
10061-02-6	trans-1,3-Dichloropropene	1000	0.50	0.50	0.11	0.11	U
79-00-5	1,1,2-Trichloroethane	1000	0.60	0.60	0.11	0.11	U
124-48-1	Dibromochloromethane	1000	0.19	0.19	0.022	0.022	U
127-18-4	Tetrachloroethene (PCE)	1000	0.080	0.080	0.012	0.012	U
108-90-7	Chlorobenzene	1000	0.51	0.51	0.11	0.11	U
75-25-2	Bromoform	1000	1.1	1.1	0.11	0.11	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.15	0.15	0.022	0.022	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	92	70-130	4/18/14 0943	

Client: CB&I  
 Project: Varian Beverly/150151-07  
 Sample Matrix: Air

Service Request: R1402683  
 Date Analyzed: 4/18/14

**Lab Control Sample Summary**  
**Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS**

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$   
 Basis: NA

Analysis Lot: 389023

**Lab Control Sample**  
 RQ1403891-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Chloromethane	5.18	5.26	98	70 - 130
Vinyl Chloride	5.92	6.58	90	70 - 130
Bromomethane	8.67	9.80	88	70 - 130
Chloroethane	5.99	6.66	90	70 - 130
Acetone	5.66	6.47	87	50 - 150
Trichlorofluoromethane (CFC 11)	13.2	15.2	87	70 - 130
1,1-Dichloroethene	9.18	10.3	89	70 - 130
Methylene Chloride	9.31	8.94	104	70 - 130
trans-1,2-Dichloroethene	9.94	10.4	96	70 - 130
1,1-Dichloroethane (1,1-DCA)	10.4	10.4	99	70 - 130
cis-1,2-Dichloroethene	10.3	10.4	99	70 - 130
Chloroform	12.1	13.2	92	70 - 130
1,2-Dichloroethane	9.22	10.6	87	70 - 130
1,1,1-Trichloroethane (TCA)	12.5	14.3	87	70 - 130
Carbon Tetrachloride	14.1	16.0	88	70 - 130
1,2-Dichloropropane	11.9	12.1	98	70 - 130
Bromodichloromethane	16.7	17.4	96	70 - 130
Trichloroethene (TCE)	13.5	14.0	97	70 - 130
cis-1,3-Dichloropropene	12.1	12.5	97	70 - 130
trans-1,3-Dichloropropene	10.3	10.9	95	70 - 130
1,1,2-Trichloroethane	14.0	14.5	97	70 - 130
Dibromochloromethane	21.8	23.4	93	70 - 130
Tetrachloroethene (PCE)	17.3	18.0	97	70 - 130
Chlorobenzene	12.6	12.3	103	70 - 130
Bromoform	26.8	26.6	101	70 - 130
1,1,2,2-Tetrachloroethane	17.9	18.5	97	70 - 130

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 | 585.288.5380 | 585.288.8475 (fax) | www.caslab.com

Requested Turnaround Time in Business Days from Receipt, please circle: 1 Day   2 Day   3 Day   4 Day <b>5 Day</b> 10 Day-Standard		CAS Project #: <b>150151-07</b>							
Company Name: <b>CBIZ</b>		Project Name: <b>Varian</b>							
Address: <b>150 Royall Dr.</b>		CAS Contact:							
City, State, Zip: <b>Canton, MA, 02021</b>		<b>Analysis Method and/or Analytes</b>  <div style="border: 1px solid black; padding: 5px; display: inline-block; transform: rotate(90deg); transform-origin: center;"> <b>TO-15 Site List</b> </div>							
Project Manager: <b>Ray Cadorette</b>				Project Number: <b>150151</b>					
Phone: <b>617-589-6102</b> Fax:				P.O. #/Billing Information: <del>896744</del> (DD) <b>896613</b>					
Email (for result reporting): <b>raymond.cadorette@cbi.com</b>		Sampler (Print & Sign): <b>Dale Dailey</b>							
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID	Flow Controller ID	<b>Comments Specific Instructions</b>			
<b>BLDG 2-5V2</b>		<b>4/10/14</b>	<b>15:27</b>	<b>SL000162</b>	<b>FL00858</b>			<b>X</b>	
<b>BLDG 2-5V2</b>		↓	<b>15:37</b>	<b>SL000145</b>	<b>FL00858</b>			<b>X</b>	
<b>BLDG 3-VPT</b>			<b>15:34</b>	<b>SL000150</b>	<b>FL00853</b>			<b>X</b>	
<b>BLDG 6-5V2</b>			<b>15:30</b>	<b>SL000168</b>	<b>FL00860</b>			<b>X</b>	
<b>BLDG 2-6</b>			<b>17:26</b>	<b>SL000053</b>	<b>FL00864</b>			<b>X</b>	
<b>BLDG 2-7</b>			<b>17:26</b>	<b>SL000174</b>	<b>FL00863</b>			<b>X</b>	
What State were samples collected in: <b>Massachusetts</b>						Project Requirements (MRLs, QAPP, etc.)			
Report Tier Levels - please select: Tier I (Results/Default, if not specified) ___ Tier II (Results + QC) <b>X</b> Tier III (CLP Forms Only) ___ Tier IV (Data Validation) ___				EDD required: YES / NO Type: _____ EDD Units: _____		<ul style="list-style-type: none"> <li>• QA/QC</li> <li>• MADEP CAM</li> <li>• Complete 2nd Run</li> </ul>			
Relinquished by: (Signature) <b>[Signature]</b>		Date: <b>4/10/14</b>	Time:	Received by: (Signature) <b>[Signature]</b>				Date: <b>4/15/14</b>	Time: <b>0905</b>
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)				Date:	Time:
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Date:	Time:		

**R1402683**  
 CAS Environmental & Infrastructure  
 Varian Beverly  
**7 Y**



# Cooler Receipt and Preservation Check Form

Project/Client CBI Folder Number R14-2683 KE 4-15-14  
 Cooler received on 4-15-14 by: ME COURIER: ALS UPS ~~FEDEX~~ VELOCITY CLIENT

- Were custody seals on outside of cooler? YES  NO
- Were custody papers properly filled out (ink, signed, etc.)? YES  NO
- Did all bottles arrive in good condition (unbroken)? YES  NO
- Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES  NO  N/A
- Were Ice or Ice packs present? YES  NO
- Where did the bottles originate? ALS/ROC CLIENT
- Soil VOA samples received as: Bulk Jar  Encore  TerraCore  Lab5035set  N/A
- Temperature of cooler(s) upon receipt: Air Samples

Is the temperature within 0° - 6° C?: Y  N  Y N  Y N  Y N  Y N   
 If No, Explain Below Date/Time Temperatures Taken: NA Air Canisters

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

**If out of Temperature, note packing/ice condition & Client Approval to Run Samples:**

All Samples held in storage location SMD by ME on 4-15-14 at 10:05  
 5035 samples placed in storage location \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: MM 4/15/14

- Cooler Breakdown: Date: 4/15/14 Time: 1343 by: ME
- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES  NO
  - Did all bottle labels and tags agree with custody papers? YES  NO
  - Were correct containers used for the tests indicated? YES  NO
  - Air Samples: Cassettes / Tubes Intact  Canisters Pressurized  Tedlar® Bags Inflated. N/A

Explain any discrepancies:

pH	Reagent	Lot Received		Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK
		YES	NO						
≥12	NaOH								No = Samples were preserved at lab as listed
≤2	HNO <sub>3</sub>								
≤2	H <sub>2</sub> SO <sub>4</sub>								
<4	NaHSO <sub>4</sub>								
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)					PM OK to Adjust:
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-						*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet
	Zn Aceta	-	-						
	HCl	*	*						

Bottle lot numbers: \_\_\_\_\_  
 Other Comments: \_\_\_\_\_

PC Secondary Review: MM 4/22/14 Significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150151.17  
**Prepared By:** Dale Dailey **Date :** 6/10/2014  
**Matrix:** Pipe Flush Water  
**Analyte Group :** Volatile Organics **Analytical Method :** SW-846 8260C  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1402713  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/7/14	EPA Method 624	14 days	30 Days	4/17/14

**Sample temperature within QC limits:** Yes, 6.0 C

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? Yes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :**

**Trip Blank ID :** NA

**Method Blank:** Method 624 4/17/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

All Initial and continuing calibrations were compliant.

All LCS and LCSD recoveries and RPD's were within QC limits.

**Reviewed By:** Pernilla Haley 6/15/14





April 28, 2014

Service Request No: R1402713

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150151**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on April 16, 2014. For your reference, these analyses have been assigned our service request number **R1402713**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

Janice Jaeger  
Client Services Manager

Page 1 of 16

CC: Pemilla Haley

## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Water

**Service Request No.:** R1402713  
**Project Number:** 150151  
**Date Received:** 04/16/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Water samples were collected on 04/07/14 and received at ALS in good condition at cooler temperatures of 4.9 – 6.0 °C as noted on the cooler receipt and preservation check form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #.

### Volatile Organics

One water sample were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Surrogate Standard recoveries were within QC limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits.

All samples were analyzed within the required holding time of 14 days.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150151

Project Location: Varian Beverly

RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):  
R1402713-001

Matrices: Groundwater/Surface Water  Soil/Sediment Drinking Water Air Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X	Yes	No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X	Yes	No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X	Yes	No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X	Yes	No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes	No	Yes
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X	Yes	No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

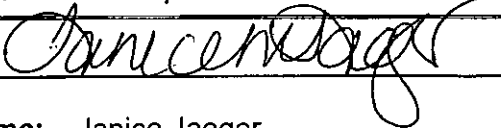
<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X	Yes	No <sup>1</sup>
----------	---	---	-----	-----------------

**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X	Yes	No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes	X	No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: 

Position: Client Services  
Manager

Printed Name: Janice Jaeger

Date: 04/28/14 **00003**

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402713

Lab ID  
R1402713-001

Client ID  
BLDG 3 LINE 8

00004

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of:* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

  
\_\_\_\_\_  
*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
ALUMINIUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CACO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	

June 25, 2013

\*= Provisional Certification

Page 1 of 2

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COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032      ALS ENVIRONMENTAL ROCHESTER  
                 ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014

<u>Analytes</u>	<u>Methods</u>
CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 365.1
PHOSPHORUS, TOTAL	EPA 365.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608





ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402713  
 Date Collected: 4/7/14 1000  
 Date Received: 4/16/14  
 Date Analyzed: 4/17/14 18:59

Sample Name: BLDG 3 LINE 8  
 Lab Code: R1402713-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041714\F7617.D\

Analysis Lot: 388593  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
87-61-6	1,2,3-Trichlorobenzene	2.0	U	2.0	
120-82-1	1,2,4-Trichlorobenzene	2.0	U	2.0	
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	2.0	U	2.0	
106-93-4	1,2-Dibromoethane	2.0	U	2.0	
95-50-1	1,2-Dichlorobenzene	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
541-73-1	1,3-Dichlorobenzene	2.0	U	2.0	
106-46-7	1,4-Dichlorobenzene	2.0	U	2.0	
123-91-1	1,4-Dioxane	40	U	40	
78-93-3	2-Butanone (MEK)	10	U	10	
591-78-6	2-Hexanone	10	U	10	
108-10-1	4-Methyl-2-pentanone	10	U	10	
67-64-1	Acetone	10	U	10	
71-43-2	Benzene	2.0	U	2.0	
74-97-5	Bromochloromethane	2.0	U	2.0	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
75-15-0	Carbon Disulfide	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
110-82-7	Cyclohexane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-71-8	Dichlorodifluoromethane (CFC 12)	2.0	U	2.0	
75-09-2	Dichloromethane	2.0	U	2.0	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402713  
 Date Collected: 4/7/14 1000  
 Date Received: 4/16/14  
 Date Analyzed: 4/17/14 18:59

Sample Name: BLDG 3 LINE 8  
 Lab Code: R1402713-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\041714\F7617.D\

Analysis Lot: 388593  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
100-41-4	Ethylbenzene	2.0	U	2.0	
98-82-8	Isopropylbenzene (Cumene)	2.0	U	2.0	
79-20-9	Methyl Acetate	2.0	U	2.0	
1634-04-4	Methyl tert-Butyl Ether	2.0	U	2.0	
108-87-2	Methylcyclohexane	2.0	U	2.0	
100-42-5	Styrene	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
108-88-3	Toluene	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/17/14 18:59	
Dibromofluoromethane	97	70-130	4/17/14 18:59	
Toluene-d8	93	70-130	4/17/14 18:59	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402713  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/17/14 14:26

Sample Name: Method Blank  
 Lab Code: RQ1403899-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoal0\data\041714\F7608.D\

Analysis Lot: 388593  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
87-61-6	1,2,3-Trichlorobenzene	2.0	U	2.0	
120-82-1	1,2,4-Trichlorobenzene	2.0	U	2.0	
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	2.0	U	2.0	
106-93-4	1,2-Dibromoethane	2.0	U	2.0	
95-50-1	1,2-Dichlorobenzene	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
541-73-1	1,3-Dichlorobenzene	2.0	U	2.0	
106-46-7	1,4-Dichlorobenzene	2.0	U	2.0	
123-91-1	1,4-Dioxane	40	U	40	
78-93-3	2-Butanone (MEK)	10	U	10	
591-78-6	2-Hexanone	10	U	10	
108-10-1	4-Methyl-2-pentanone	10	U	10	
67-64-1	Acetone	10	U	10	
71-43-2	Benzene	2.0	U	2.0	
74-97-5	Bromochloromethane	2.0	U	2.0	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
75-15-0	Carbon Disulfide	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
110-82-7	Cyclohexane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-71-8	Dichlorodifluoromethane (CFC 12)	2.0	U	2.0	
75-09-2	Dichloromethane	2.0	U	2.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402713  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/17/14 14:26

Sample Name: Method Blank  
 Lab Code: RQ1403899-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa10\data\041714\F7608.D\

Analysis Lot: 388593  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
100-41-4	Ethylbenzene	2.0	U	2.0	
98-82-8	Isopropylbenzene (Cumene)	2.0	U	2.0	
79-20-9	Methyl Acetate	2.0	U	2.0	
1634-04-4	Methyl tert-Butyl Ether	2.0	U	2.0	
108-87-2	Methylcyclohexane	2.0	U	2.0	
100-42-5	Styrene	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
108-88-3	Toluene	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/17/14 14:26	
Dibromofluoromethane	97	70-130	4/17/14 14:26	
Toluene-d8	99	70-130	4/17/14 14:26	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402713  
 Date Analyzed: 4/17/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 388593

Analyte Name	Lab Control Sample RQ1403899-02			Duplicate Lab Control Sample RQ1403899-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	17.2	20.0	86	17.2	20.0	86	70 - 130	<1	20
1,1,2,2-Tetrachloroethane	21.8	20.0	109	21.0	20.0	105	70 - 130	4	20
1,1,2-Trichloroethane	21.4	20.0	107	21.1	20.0	106	70 - 130	1	20
1,1,2-Trichloro-1,2,2-trifluoroethane	17.0	20.0	85	17.4	20.0	87	70 - 130	2	20
1,1-Dichloroethane (1,1-DCA)	19.0	20.0	95	18.7	20.0	93	70 - 130	2	20
1,1-Dichloroethene (1,1-DCE)	20.0	20.0	100	20.6	20.0	103	70 - 130	3	20
1,2,3-Trichlorobenzene	23.0	20.0	115	21.6	20.0	108	70 - 130	6	20
1,2,4-Trichlorobenzene	22.9	20.0	115	21.4	20.0	107	70 - 130	7	20
1,2-Dibromo-3-chloropropane (DBCP)	23.3	20.0	116	22.4	20.0	112	70 - 130	4	20
1,2-Dibromoethane	22.5	20.0	112	22.0	20.0	110	70 - 130	2	20
1,2-Dichlorobenzene	21.5	20.0	107	20.8	20.0	104	70 - 130	3	20
1,2-Dichloroethane	18.3	20.0	92	18.5	20.0	93	70 - 130	1	20
1,2-Dichloropropane	20.6	20.0	103	21.2	20.0	106	70 - 130	3	20
1,3-Dichlorobenzene	20.1	20.0	100	20.2	20.0	101	70 - 130	<1	20
1,4-Dichlorobenzene	20.0	20.0	100	19.9	20.0	100	70 - 130	<1	20
1,4-Dioxane	543	400	136	484	400	121	40 - 160	12	20
2-Butanone (MEK)	23.3	20.0	116	24.0	20.0	120	40 - 160	3	20
2-Hexanone	23.6	20.0	118	23.3	20.0	116	40 - 160	1	20
4-Methyl-2-pentanone	23.8	20.0	119	22.9	20.0	115	40 - 160	4	20
Acetone	23.8	20.0	119	20.8	20.0	104	40 - 160	13	20
Benzene	19.7	20.0	98	20.0	20.0	100	70 - 130	2	20
Bromochloromethane	21.4	20.0	107	21.2	20.0	106	70 - 130	1	20
Bromodichloromethane	19.7	20.0	98	19.8	20.0	99	70 - 130	<1	20
Bromoform	21.8	20.0	109	21.2	20.0	106	70 - 130	3	20
Bromomethane	25.7	20.0	128	27.4	20.0	137	40 - 160	6	20
Carbon Disulfide	20.4	20.0	102	20.8	20.0	104	70 - 130	2	20
Carbon Tetrachloride	18.0	20.0	90	17.7	20.0	89	70 - 130	2	20
Chlorobenzene	19.9	20.0	99	19.6	20.0	98	70 - 130	1	20
Chloroethane	17.4	20.0	87	17.3	20.0	87	70 - 130	<1	20
Chloroform	18.6	20.0	93	18.3	20.0	91	70 - 130	2	20
Chloromethane	19.8	20.0	99	19.7	20.0	98	40 - 160	<1	20
Cyclohexane	14.8	20.0	74	16.5	20.0	82	70 - 130	11	20
Dibromochloromethane	21.1	20.0	105	20.9	20.0	104	70 - 130	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402713  
 Date Analyzed: 4/17/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 388593

Analyte Name	Lab Control Sample RQ1403899-02			Duplicate Lab Control Sample RQ1403899-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Dichlorodifluoromethane (CFC 12)	18.8	20.0	94	18.7	20.0	93	40 - 160	<1	20
Dichloromethane	20.4	20.0	102	19.9	20.0	99	70 - 130	3	20
Ethylbenzene	19.7	20.0	98	19.6	20.0	98	70 - 130	<1	20
Isopropylbenzene (Cumene)	19.6	20.0	98	19.9	20.0	99	70 - 130	2	20
Methyl Acetate	21.3	20.0	106	21.5	20.0	108	70 - 130	1	20
Methyl tert-Butyl Ether	22.6	20.0	113	21.5	20.0	108	70 - 130	5	20
Methylcyclohexane	15.7	20.0	78	17.0	20.0	85	70 - 130	8	20
Styrene	21.3	20.0	107	20.6	20.0	103	70 - 130	3	20
Tetrachloroethene (PCE)	19.4	20.0	97	19.1	20.0	95	70 - 130	2	20
Toluene	19.2	20.0	96	19.5	20.0	97	70 - 130	2	20
Trichloroethene (TCE)	19.1	20.0	95	19.8	20.0	99	70 - 130	4	20
Trichlorofluoromethane (CFC 11)	16.4	20.0	82	16.4	20.0	82	70 - 130	<1	20
Vinyl Chloride	19.0	20.0	95	19.1	20.0	96	70 - 130	<1	20
cis-1,2-Dichloroethene	18.8	20.0	94	18.8	20.0	94	70 - 130	<1	20
cis-1,3-Dichloropropene	20.6	20.0	103	20.4	20.0	102	70 - 130	<1	20
m,p-Xylenes	40.8	40.0	102	40.7	40.0	102	70 - 130	<1	20
o-Xylene	21.0	20.0	105	20.7	20.0	103	70 - 130	2	20
trans-1,2-Dichloroethene	18.7	20.0	94	19.1	20.0	95	70 - 130	2	20
trans-1,3-Dichloropropene	20.8	20.0	104	20.7	20.0	103	70 - 130	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

# 14841

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE      /      OF      /     

Project Name <i>Varian</i>		Project Number <i>150151</i>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																		
Project Manager <i>Ray Cadorette</i>		Report CC		PRESERVATIVE <i>1</i>																		
Company/Address <i>CBI</i>		NUMBER OF CONTAINERS		<table border="1"> <tr><td>GC/MS VOCs • 8200 • 821 • CLP</td></tr> <tr><td>GC/MS SVOCs • 8270 • 825</td></tr> <tr><td>GC VOCs • 8021 • 801/802</td></tr> <tr><td>PESTICIDES • 8081 • 808</td></tr> <tr><td>PCBs • 8082 • 808</td></tr> <tr><td>METALS, TOTAL (List in comments below)</td></tr> <tr><td>METALS, DISSOLVED (List in comments below)</td></tr> </table>												GC/MS VOCs • 8200 • 821 • CLP	GC/MS SVOCs • 8270 • 825	GC VOCs • 8021 • 801/802	PESTICIDES • 8081 • 808	PCBs • 8082 • 808	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)
GC/MS VOCs • 8200 • 821 • CLP																						
GC/MS SVOCs • 8270 • 825																						
GC VOCs • 8021 • 801/802																						
PESTICIDES • 8081 • 808																						
PCBs • 8082 • 808																						
METALS, TOTAL (List in comments below)																						
METALS, DISSOLVED (List in comments below)																						
<i>150 Royall Dr</i>																						
<i>Centon MA, 02021</i>																						
Phone # <i>617-589-5327</i>		Email <i>raymond.cadorette@cbi.com</i>		Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____																		
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <i>Dale Darty</i>																				
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID		SAMPLING DATE		SAMPLING TIME		MATRIX		REMARKS/ALTERNATE DESCRIPTION												
<i>Bldg 3 Line 8</i>				<i>4/12/14</i>		<i>10:00</i>		<i>W 3</i>		<i>X</i>												

SPECIAL INSTRUCTIONS/COMMENTS Metals <i>MADGP</i> <i>DATA</i>			TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day ___ 2 day ___ 3 day ___ 4 day <i>X</i> 5 day ___			REPORT REQUIREMENTS I. Results Only <i>X</i> II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data			INVOICE INFORMATION PO # BILL TO:		
<i>Separate report please.</i>			REQUESTED REPORT DATE			Edata Yes ___ No ___					

STATE WHERE SAMPLES WERE COLLECTED											
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY	
<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>		<i>[Signature]</i>	
Printed Name <i>Dale Darty</i>		Printed Name <i>Gregory S. Smayton</i>		Printed Name		Printed Name		Printed Name		Printed Name	
Firm <i>CBI</i>		Firm <i>ALS</i>		Firm		Firm		Firm		Firm	
Date/Time <i>4/12/14 18:30</i>		Date/Time <i>4-16-14 9:30</i>		Date/Time		Date/Time		Date/Time		Date/Time	

**R1402713** **7 Y**  
 CBI Environmental & Infrastructure  
 Varian Beverly



# Cooler Receipt and Preservation Check Form

Project/Client CBTI Folder Number R14-2713

Cooler received on 4-16-14 by: RE COURIER: ALS UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler? YES NO
2. Were custody papers properly filled out (ink, signed, etc.)? YES NO
3. Did all bottles arrive in good condition (unbroken)? YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES NO N/A
5. Were Ice or Ice packs present? YES NO
6. Where did the bottles originate? ALS/ROC, CLIENT
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
8. Temperature of cooler(s) upon receipt: 6.0° 4.9°

Is the temperature within 0° - 6° C?: Y N Y N Y N Y N

If No, Explain Below Date/Time Temperatures Taken: 4-16-14 @ 09:38

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location R-002 by RE on 4-16-14 at 09:45  
 5035 samples placed in storage location \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: [Signature] 4/16/14

Cooler Breakdown: Date: 4/16/14 Time: 1458 by: [Signature]

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent			Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK
		YES	NO							
≥12	NaOH									No = Samples were preserved at lab as listed
≤2	HNO <sub>3</sub>									
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						PM OK to Adjust:
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-							
	Zn Aceta	-	-							
	HCl	*	*							

\*Not to be tested before analysis - pH tested and recorded by VOAs or GenChem on a separate worksheet

Bottle lot numbers: 3-212-002

Other Comments:

\* Bldg 3 Line 8: 1 of 3 vials has significant headspace.  
RE 4-16-14

PC Secondary Review: [Signature] 4/16/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc

**Job Number :** 150151

**Prepared By:** Dale Dailey

**Date :** 6/5/2014

**Matrix:** Groundwater, Soil

**Analyte Group :**  
 Volatile Organics  
 General Chemistry  
 Metals  
 Gasoline Range Organics  
 Semivolatile Organics  
 Polychlorinated Biphenyls (PCB's)  
 Diesel and Residual Range Organics

**Analytical Method :**  
 EPA Method 8260C  
 9014, 1010A, 9040C, 9034, 9045D, 160.3, 9034  
 EPA 6010C and 7470A  
 8015C  
 8270D  
 8082A  
 8015C

**Completed MADEP CAM Certification Form included:** No

**Laboratory ID No. :** R1402720

**Chain of Custody included in Data Package ?** Yes

**Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/11/2014	8260C		14 Days	4/18, 4/23/2014
4/11/2014	9014, 1010A, 9040C, 9034, 9045D, 160.3		14 Days	4/18, 4/21/14
4/11/2014	6010C		180 Days	4/22, 4/23/2014
4/11/2014	7470A		28 Days	4/17/14
4/11/2014	8270D	14 Days	40 Days	4/18/14
4/11/2014	8082A	14 Days	40 Days	4/18, 4/21/14
4/11/2014	8015C (Gasoline Range)		14 Days	4/18, 4/19/14
4/11/2014	8015C (Diesel Range)	7 Days	40 Days	4/21, 4/22/14

**Sample temperature within QC limits:** Yes, 6.0° C

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? Yes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :** None

**Trip Blank ID :** None

**Method Blank:**

9014, 9034, 160.3, 9014, 1010A	4/21/2014
6010 C, 7470A	4/22/2014
8260C	4/18/2014, 4/23/14
8015C	4/18, 4/19, 4/21/14
8270D	4/18/2014
8082A	4/18/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

VOC: All LCS and LCSD recoveries were within QC limits except for 1,1,2-Trichloro-1,2,2,-trifluoroethane on 4/18/14, which has been flagged with an \*\*\*. The data was not impacted since the analytical results were non-detect for these analytes in this batch.

SVOC: Various LCS and LCSD recoveries were outside QC limits on 4/18/14, and all analytes have been flagged with an \*\*\*. The data was not impacted since the analytical results were non-detect for these analytes in these batches.

**Reviewed By:** Pernilla Haley 6/15/19



April 28, 2014

Service Request No: R1402720

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150151**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on April 16, 2014. For your reference, these analyses have been assigned our service request number **R1402720**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

Janice Jaeger  
Client Services Manager

Page 1 of 86

CC: Pemilla Haley

## CASE NARRATIVE

<b>Client:</b>	CB&I	<b>Service Request:</b>	R1402720
<b>Project:</b>	Varian Beverly	<b>Project Number:</b>	
<b>Sample Matrix:</b>	Soil/Water	<b>Date Received:</b>	04/16/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II deliverables. When appropriate to the method, method blank and LCS results have been reported with each analytical test.

### Sample Receipt

Samples were collected on 04/11/14 and received at ALS on 04/16/14 at a cooler temperature of 4.4°C in good condition except as noted on the cooler receipt and preservation check form. ALS Environmental is responsible only for the analytical testing and are not directly responsible for the integrity of the sample before laboratory receipt.

### Inorganic Analysis

Two soil samples and one water sample were analyzed for a site specific list of parameters. Please see attached data pages for method numbers.

Site specific QC was not requested on these samples. All LCS recoveries were acceptable.

The Method blanks associated with these analyses were free of contamination above the Method Reporting Limit (MRL).

No other analytical or QC problems were encountered.

### Metals Analysis

Two soil samples and one water sample were analyzed for a site specific list of parameters. Please see attached data pages for method numbers.

Site specific QC was not requested on these samples

The Method blanks associated with these analyses were free of contamination above the Method Reporting Limit (MRL).

No other analytical or QC problems were encountered.

### Volatile Organics

Two soil samples and one water sample were analyzed for a site specific list of Volatiles by method 5035/8260C from SW-846.

All initial calibration criteria were met for all analytes. All Continuing Calibration Verification (CCV) standards were within 20% Difference (D) except Freon 113 on the 04/13/14 CCV and Dichlorodifluoromethane, Acetone and 1,4-Dioxane on the 04/23/14 CCV. No data was affected.

All Tuning criteria were within QC limits.

All Laboratory Control Sample (LCS) recoveries were within limits except Freon 113 was outside limits high on the 04/18/14 LCS and has been flagged with an "\*\*". No data was affected.

Site specific QC was not requested on these samples.

All Internal Standard Areas were within limits.

All surrogate standard recoveries were within limits.

The Method blanks associated with these samples were free of contamination.

All samples were analyzed within recommended holding times.

No other analytical or QC problems were encountered.

### **Semivolatile Organics**

Two soil samples and one water sample were analyzed for a site specific list of Semivolatiles by method 8270D from SW-846.

All initial and continuing calibration criteria were met for all analytes.

All Tuning criteria were within limits.

All Internal Standard Areas were acceptable.

Various LCS/LCSD recoveries were outside limits high and have been flagged with an "\*\*". No data was affected. All RPD's were acceptable.

Site specific QC was not requested for these samples.

All surrogate standard recoveries were within limits.

The Method blanks associated with these samples were free of contamination.

All samples were analyzed within recommended holding times.

No other analytical or QC problems were encountered.

### **Gasoline Range Organics (GRO)**

Two soil samples and one water sample were analyzed for GRO by method 8015C from SW-846.

All initial and continuing calibration criteria were met for all analytes.

The LCS/LCSD recoveries and RPD's were acceptable.

Site specific QC was not requested on these samples.

All surrogate standard recoveries were within limits.

The Method blanks were free of contamination.

All samples were analyzed within recommended holding times.

No other analytical or QC problems were encountered.

**PCB's**

Two soil samples and one water samples were analyzed for PCB's by method 8082A from SW-846.

All initial and continuing calibration criteria were met.

The LCS/LCSD recoveries and RPD's were all acceptable.

Site specific QC was not requested on these samples.

The Method blanks were free of contamination.

All samples were analyzed within recommended holding times.

No other analytical or QC problems were encountered.

**Diesel Range Organics (DRO)**

Two soil samples and one water samples were analyzed for DRO by method 8015C from SW-846.

All initial and continuing calibration criteria were met.

The LCS/LCSD recoveries and RPD's were all acceptable.

Site specific QC was not requested on these samples.

The Method blanks were free of contamination.

All samples were analyzed within recommended holding times.

No other analytical or QC problems were encountered.

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402720

<u>Lab ID</u>	<u>Client ID</u>
R1402720-001	VARIAN-WC01
R1402720-002	VARIAN-WC02
R1402720-003	VARIAN-WC-03

00005



REPORT QUALIFIERS AND DEFINITIONS

- U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Aroclors).
B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E Organics- Concentration has exceeded the calibration range for that specific analysis.
D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
\* Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
# Spike was diluted out.
+ Correlation coefficient for MSA is <0.995.
N Inorganics- Matrix spike recovery was outside laboratory limits.
N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S Concentration has been determined using Method of Standard Additions (MSA).
W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P Concentration >40% (25% for CLP) difference between the two GC columns.
C Confirmed by GC/MS
Q DoD reports: indicates a pesticide/Aroclor is not confirmed (>=100% Difference between two GC columns).
X See Case Narrative for discussion.
MRL Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.



Rochester Lab ID # for State Certifications<sup>1</sup>

Table with 3 columns: State ID, State Name, and State ID #. Rows include Maine, New Hampshire, Connecticut, Nebraska, Delaware, Nevada, DoD ELAP, New Jersey, Florida, New York, Illinois, and Virginia.

1 Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the laboratory case narrative provided. For a specific list of accredited analytes, refer to http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads -



## INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

### Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	3010A
200.8	ILM05.3
6010C	3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

### Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3010A
6010 SPLP (1312) extract	3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

RIGHT SOLUTIONS | RIGHT PARTNER



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: VARIAN-WC01  
 Lab Code: R1402720-001

Service Request: R1402720  
 Date Collected: 4/11/14 1330  
 Date Received: 4/16/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Cyanide, Reactive	9014	20	U	mg/Kg	20	1	4/21/14	4/21/14 15:43	
Flash Point	1010A	>100		deg C		1	NA	4/21/14 10:30	
pH	9040C	7.32		pH Units		1	NA	4/18/14 16:45	
Sulfide, Reactive	9034 Modified	99	U	mg/Kg	99	1	4/21/14	4/21/01 09:00	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: VARIAN-WC01  
 Lab Code: R1402720-001

Service Request: R1402720  
 Date Collected: 4/11/14 1330  
 Date Received: 4/16/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Arsenic, Total	6010C	10	U	µg/L	10	1	4/21/14	4/22/14 13:14	
Barium, Total	6010C	38		µg/L	20	1	4/21/14	4/22/14 13:14	
Cadmium, Total	6010C	5.0	U	µg/L	5.0	1	4/21/14	4/22/14 13:14	
Chromium, Total	6010C	10	U	µg/L	10	1	4/21/14	4/22/14 13:14	
Lead, Total	6010C	50	U	µg/L	50	1	4/21/14	4/22/14 13:14	
Mercury, Total	7470A	0.20	U	µg/L	0.20	1	4/17/14	4/17/14 18:36	
Selenium, Total	6010C	10	U	µg/L	10	1	4/21/14	4/22/14 13:14	
Silver, Total	6010C	10	U	µg/L	10	1	4/21/14	4/22/14 13:14	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: 4/11/14 1330  
 Date Received: 4/16/14  
 Date Analyzed: 4/23/14 12:40

Sample Name: VARIAN-WC01  
 Lab Code: R1402720-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\042314\F7825.D\

Analysis Lot: 389418  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
87-61-6	1,2,3-Trichlorobenzene	1.0	U	1.0	
120-82-1	1,2,4-Trichlorobenzene	1.0	U	1.0	
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	2.0	U	2.0	
106-93-4	1,2-Dibromoethane	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
123-91-1	1,4-Dioxane	40	U	40	
78-93-3	2-Butanone (MEK)	5.0	U	5.0	
591-78-6	2-Hexanone	5.0	U	5.0	
108-10-1	4-Methyl-2-pentanone	5.0	U	5.0	
67-64-1	Acetone	6.4		5.0	
71-43-2	Benzene	1.0	U	1.0	
74-97-5	Bromochloromethane	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
75-15-0	Carbon Disulfide	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.4		1.0	
74-87-3	Chloromethane	1.0	U	1.0	
110-82-7	Cyclohexane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-71-8	Dichlorodifluoromethane (CFC 12)	1.0	U	1.0	
75-09-2	Dichloromethane	1.0	U	1.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: 4/11/14 1330  
 Date Received: 4/16/14  
 Date Analyzed: 4/23/14 12:40

Sample Name: VARIAN-WC01  
 Lab Code: R1402720-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\042314\F7825.D\

Analysis Lot: 389418  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
100-41-4	Ethylbenzene	1.0	U	1.0	
98-82-8	Isopropylbenzene (Cumene)	1.0	U	1.0	
79-20-9	Methyl Acetate	2.0	U	2.0	
1634-04-4	Methyl tert-Butyl Ether	1.0	U	1.0	
108-87-2	Methylcyclohexane	1.0	U	1.0	
100-42-5	Styrene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	85-122	4/23/14 12:40	
Dibromofluoromethane	101	89-119	4/23/14 12:40	
Toluene-d8	98	87-121	4/23/14 12:40	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: 4/11/14 1330  
 Date Received: 4/16/14  
 Date Analyzed: 4/18/14 16:47

Sample Name: VARIAN-WC01  
 Lab Code: R1402720-001

Units: µg/L  
 Basis: NA

Gasoline Range Organics by GC

Analytical Method: 8015C  
 Data File Name: 1007.run

Analysis Lot: 388950  
 Instrument Name: R-GC-06  
 Dilution Factor: 5

CAS No.	Analyte Name	Result Q	MRL	Note
8006-61-9	Gasoline Range Organics as C6-C10 Commercial Fuel	250 U	250	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	90	73-112	4/18/14 16:47	

## Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: 4/11/14 1330  
 Date Received: 4/16/14  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 13:56

Sample Name: VARIAN-WC01  
 Lab Code: R1402720-001

Units: µg/L  
 Basis: NA

## Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3510C  
 Data File Name: I:\ACQUDATA\5973D\Data\041814\AT757.D\

Analysis Lot: 389006  
 Extraction Lot: 206383  
 Instrument Name: R-MS-54  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
95-94-3	1,2,4,5-Tetrachlorobenzene	9.4	U	9.4	
58-90-2	2,3,4,6-Tetrachlorophenol	9.4	U	9.4	
95-95-4	2,4,5-Trichlorophenol	9.4	U	9.4	
88-06-2	2,4,6-Trichlorophenol	9.4	U	9.4	
120-83-2	2,4-Dichlorophenol	9.4	U	9.4	
105-67-9	2,4-Dimethylphenol	9.4	U	9.4	
51-28-5	2,4-Dinitrophenol	47	U	47	
121-14-2	2,4-Dinitrotoluene	9.4	U	9.4	
606-20-2	2,6-Dinitrotoluene	9.4	U	9.4	
91-58-7	2-Chloronaphthalene	9.4	U	9.4	
95-57-8	2-Chlorophenol	9.4	U	9.4	
91-57-6	2-Methylnaphthalene	9.4	U	9.4	
95-48-7	2-Methylphenol	9.4	U	9.4	
88-74-4	2-Nitroaniline	47	U	47	
88-75-5	2-Nitrophenol	9.4	U	9.4	
91-94-1	3,3'-Dichlorobenzidine	9.4	U	9.4	
	3- and 4-Methylphenol Coelution	9.4	U	9.4	
99-09-2	3-Nitroaniline	47	U	47	
534-52-1	4,6-Dinitro-2-methylphenol	47	U	47	
101-55-3	4-Bromophenyl Phenyl Ether	9.4	U	9.4	
59-50-7	4-Chloro-3-methylphenol	9.4	U	9.4	
106-47-8	4-Chloroaniline	9.4	U	9.4	
7005-72-3	4-Chlorophenyl Phenyl Ether	9.4	U	9.4	
100-01-6	4-Nitroaniline	47	U	47	
100-02-7	4-Nitrophenol	47	U	47	
83-32-9	Acenaphthene	9.4	U	9.4	
208-96-8	Acenaphthylene	9.4	U	9.4	
98-86-2	Acetophenone	9.4	U	9.4	
120-12-7	Anthracene	9.4	U	9.4	
1912-24-9	Atrazine	9.4	U	9.4	
56-55-3	Benz(a)anthracene	9.4	U	9.4	
100-52-7	Benzaldehyde	47	U	47	
50-32-8	Benzo(a)pyrene	9.4	U	9.4	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: 4/11/14 1330  
 Date Received: 4/16/14  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 13:56

Sample Name: VARIAN-WC01  
 Lab Code: R1402720-001

Units: µg/L  
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3510C  
 Data File Name: I:\ACQUDATA\5973D\Data\041814\AT757.D\

Analysis Lot: 389006  
 Extraction Lot: 206383  
 Instrument Name: R-MS-54  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
205-99-2	Benzo(b)fluoranthene	9.4	U	9.4	
191-24-2	Benzo(g,h,i)perylene	9.4	U	9.4	
207-08-9	Benzo(k)fluoranthene	9.4	U	9.4	
92-52-4	Biphenyl	9.4	U	9.4	
108-60-1	2,2'-Oxybis(1-chloropropane)	9.4	U	9.4	
111-91-1	Bis(2-chloroethoxy)methane	9.4	U	9.4	
111-44-4	Bis(2-chloroethyl) Ether	9.4	U	9.4	
117-81-7	Bis(2-ethylhexyl) Phthalate	9.4	U	9.4	
85-68-7	Butyl Benzyl Phthalate	9.4	U	9.4	
105-60-2	Caprolactam	9.4	U	9.4	
86-74-8	Carbazole	9.4	U	9.4	
218-01-9	Chrysene	9.4	U	9.4	
84-74-2	Di-n-butyl Phthalate	9.4	U	9.4	
117-84-0	Di-n-octyl Phthalate	9.4	U	9.4	
53-70-3	Dibenz(a,h)anthracene	9.4	U	9.4	
132-64-9	Dibenzofuran	9.4	U	9.4	
84-66-2	Diethyl Phthalate	9.4	U	9.4	
131-11-3	Dimethyl Phthalate	9.4	U	9.4	
206-44-0	Fluoranthene	9.4	U	9.4	
86-73-7	Fluorene	9.4	U	9.4	
118-74-1	Hexachlorobenzene	9.4	U	9.4	
87-68-3	Hexachlorobutadiene	9.4	U	9.4	
77-47-4	Hexachlorocyclopentadiene	9.4	U	9.4	
67-72-1	Hexachloroethane	9.4	U	9.4	
193-39-5	Indeno(1,2,3-cd)pyrene	9.4	U	9.4	
78-59-1	Isophorone	9.4	U	9.4	
621-64-7	N-Nitrosodi-n-propylamine	9.4	U	9.4	
86-30-6	N-Nitrosodiphenylamine	9.4	U	9.4	
91-20-3	Naphthalene	9.4	U	9.4	
98-95-3	Nitrobenzene	9.4	U	9.4	
87-86-5	Pentachlorophenol (PCP)	47	U	47	
85-01-8	Phenanthrene	9.4	U	9.4	
108-95-2	Phenol	9.4	U	9.4	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: 4/11/14 1330  
 Date Received: 4/16/14  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 13:56

Sample Name: VARIAN-WC01  
 Lab Code: R1402720-001

Units: µg/L  
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3510C  
 Data File Name: I:\ACQUADATA\5973D\Data\041814\AT757.D\

Analysis Lot: 389006  
 Extraction Lot: 206383  
 Instrument Name: R-MS-54  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
129-00-0	Pyrene	9.4	U	9.4	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	121	28-157	4/18/14 13:56	
2-Fluorobiphenyl	86	39-119	4/18/14 13:56	
2-Fluorophenol	43	10-105	4/18/14 13:56	
Nitrobenzene-d5	86	37-117	4/18/14 13:56	
Phenol-d6	32	10-107	4/18/14 13:56	
Terphenyl-d14	112	40-133	4/18/14 13:56	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: 4/11/14 1330  
 Date Received: 4/16/14  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 17:55

Sample Name: VARIAN-WC01  
 Lab Code: R1402720-001

Units: µg/L  
 Basis: NA

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A  
 Prep Method: EPA 3510C  
 Data File Name: I:\ACQU\DATA\GC\EXT4\DATA\041814\NM431.D\

Analysis Lot: 388987  
 Extraction Lot: 206382  
 Instrument Name: R-GC-56  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
12674-11-2	Aroclor 1016	0.94	U	0.94	
11104-28-2	Aroclor 1221	1.9	U	1.9	
11141-16-5	Aroclor 1232	0.94	U	0.94	
53469-21-9	Aroclor 1242	0.94	U	0.94	
12672-29-6	Aroclor 1248	0.94	U	0.94	
11097-69-1	Aroclor 1254	0.94	U	0.94	
11096-82-5	Aroclor 1260	0.94	U	0.94	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	63	10-124	4/18/14 17:55	
Tetrachloro-m-xylene	77	11-131	4/18/14 17:55	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: 4/11/14 1330  
 Date Received: 4/16/14  
 Date Extracted: 4/18/14  
 Date Analyzed: 4/21/14 08:48

Sample Name: VARIAN-WC01  
 Lab Code: R1402720-001

Units: µg/L  
 Basis: NA

Diesel and Residual Range Organics by GC

Analytical Method: 8015C  
 Prep Method: EPA 3510C  
 Data File Name: I:\ACQU\DATA\68901\DATA\042114\AS628.D\

Analysis Lot: 389021  
 Extraction Lot: 206509  
 Instrument Name: R-GC-59  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68334-30-5	Diesel Range Organics (DRO) as C10-C28	490		94	
	Alkanes				
	C28 - C40 ORO	250		94	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
o-Terphenyl	81	40-147	4/21/14 08:48	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil  
 Sample Name: VARIAN-WC02  
 Lab Code: R1402720-002

Service Request: R1402720  
 Date Collected: 4/11/14 1400  
 Date Received: 4/16/14

Basis: As Received

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Flash Point	1010A Modified	>100	deg C		1	NA	4/21/14 10:30	
pH	9045D	7.67	pH Units		1	NA	4/21/14 13:38	
Solids, Total	160.3 Modified	81.6	Percent	1.0	1	NA	4/21/14 11:10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil  
 Sample Name: VARIAN-WC02  
 Lab Code: R1402720-002

Service Request: R1402720  
 Date Collected: 4/11/14 1400  
 Date Received: 4/16/14

Basis: Dry  
 Percent Solids: 81.6

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Cyanide, Reactive	9014	23	U	mg/Kg	23	1	4/21/14	4/21/14 15:51	
Sulfide, Reactive	9034 Modified	120	U	mg/Kg	120	1	4/21/14	4/21/14 09:00	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil  
 Sample Name: VARIAN-WC02  
 Lab Code: R1402720-002

Service Request: R1402720  
 Date Collected: 4/11/14 1400  
 Date Received: 4/16/14

Basis: Dry  
 Percent Solids: 81.6

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Arsenic, Total	6010C	33.8	mg/Kg	1.2	1	4/18/14	4/22/14 00:55	
Barium, Total	6010C	60	mg/Kg	24	10	4/18/14	4/23/14 14:57	
Cadmium, Total	6010C	248	mg/Kg	6.0	10	4/18/14	4/23/14 14:57	
Chromium, Total	6010C	452	mg/Kg	1.2	1	4/18/14	4/22/14 00:55	
Lead, Total	6010C	441	mg/Kg	60	10	4/18/14	4/23/14 14:57	
Mercury, Total	7471B	0.401	mg/Kg	0.037	1	4/17/14	4/17/14 19:24	
Selenium, Total	6010C	12 U	mg/Kg	12	10	4/18/14	4/23/14 14:57	
Silver, Total	6010C	38.3	mg/Kg	1.2	1	4/18/14	4/22/14 00:55	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1400  
 Date Received: 4/16/14  
 Date Analyzed: 4/18/14 17:47

Sample Name: VARIAN-WC02  
 Lab Code: R1402720-002

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 81.6

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\MSVOA7\DATA\041814\K8518.D\

Analysis Lot: 388901  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	6.1	U	6.1	
79-34-5	1,1,2,2-Tetrachloroethane	6.1	U	6.1	
79-00-5	1,1,2-Trichloroethane	6.1	U	6.1	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.1	U	6.1	
75-34-3	1,1-Dichloroethane (1,1-DCA)	6.1	U	6.1	
75-35-4	1,1-Dichloroethene (1,1-DCE)	6.1	U	6.1	
87-61-6	1,2,3-Trichlorobenzene	6.1	U	6.1	
120-82-1	1,2,4-Trichlorobenzene	6.1	U	6.1	
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	6.1	U	6.1	
106-93-4	1,2-Dibromoethane	6.1	U	6.1	
95-50-1	1,2-Dichlorobenzene	6.1	U	6.1	
107-06-2	1,2-Dichloroethane	6.1	U	6.1	
78-87-5	1,2-Dichloropropane	6.1	U	6.1	
541-73-1	1,3-Dichlorobenzene	6.1	U	6.1	
106-46-7	1,4-Dichlorobenzene	6.1	U	6.1	
123-91-1	1,4-Dioxane	120	U	120	
78-93-3	2-Butanone (MEK)	6.1	U	6.1	
591-78-6	2-Hexanone	6.1	U	6.1	
108-10-1	4-Methyl-2-pentanone	6.1	U	6.1	
67-64-1	Acetone	6.1	U	6.1	
71-43-2	Benzene	6.1	U	6.1	
74-97-5	Bromochloromethane	6.1	U	6.1	
75-27-4	Bromodichloromethane	6.1	U	6.1	
75-25-2	Bromoform	6.1	U	6.1	
74-83-9	Bromomethane	6.1	U	6.1	
75-15-0	Carbon Disulfide	6.1	U	6.1	
56-23-5	Carbon Tetrachloride	6.1	U	6.1	
108-90-7	Chlorobenzene	6.1	U	6.1	
75-00-3	Chloroethane	6.1	U	6.1	
67-66-3	Chloroform	6.1	U	6.1	
74-87-3	Chloromethane	6.1	U	6.1	
110-82-7	Cyclohexane	6.1	U	6.1	
124-48-1	Dibromochloromethane	6.1	U	6.1	
75-71-8	Dichlorodifluoromethane (CFC 12)	6.1	U	6.1	
75-09-2	Dichloromethane	6.1	U	6.1	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1400  
 Date Received: 4/16/14  
 Date Analyzed: 4/18/14 17:47

Sample Name: VARIAN-WC02  
 Lab Code: R1402720-002

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 81.6

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041814\K8518.D\

Analysis Lot: 388901  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
100-41-4	Ethylbenzene	6.1	U	6.1	
98-82-8	Isopropylbenzene (Cumene)	6.1	U	6.1	
79-20-9	Methyl Acetate	6.1	U	6.1	
1634-04-4	Methyl tert-Butyl Ether	6.1	U	6.1	
108-87-2	Methylcyclohexane	6.1	U	6.1	
100-42-5	Styrene	6.1	U	6.1	
127-18-4	Tetrachloroethene (PCE)	6.1	U	6.1	
108-88-3	Toluene	6.1	U	6.1	
79-01-6	Trichloroethene (TCE)	6.1	U	6.1	
75-69-4	Trichlorofluoromethane (CFC 11)	6.1	U	6.1	
75-01-4	Vinyl Chloride	6.1	U	6.1	
156-59-2	cis-1,2-Dichloroethene	6.1	U	6.1	
10061-01-5	cis-1,3-Dichloropropene	6.1	U	6.1	
179601-23-1	m,p-Xylenes	12	U	12	
95-47-6	o-Xylene	6.1	U	6.1	
156-60-5	trans-1,2-Dichloroethene	6.1	U	6.1	
10061-02-6	trans-1,3-Dichloropropene	6.1	U	6.1	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	51-136	4/18/14 17:47	
Dibromofluoromethane	95	63-138	4/18/14 17:47	
Toluene-d8	98	66-138	4/18/14 17:47	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1400  
 Date Received: 4/16/14  
 Date Analyzed: 4/19/14 14:20

Sample Name: VARIAN-WC02  
 Lab Code: R1402720-002

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 81.6

Gasoline Range Organics by GC

Analytical Method: 8015C  
 Data File Name: 1005.run

Analysis Lot: 388999  
 Instrument Name: R-GC-06  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
8006-61-9	Gasoline Range Organics as C6-C10 Commercial Fuel	61 U	61	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	85	35-142	4/19/14 14:20	





ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1400  
 Date Received: 4/16/14  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 21:40

Sample Name: VARIAN-WC02  
 Lab Code: R1402720-002

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 81.6

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQUDATA\5973A\DATA\041814\CY954.D\

Analysis Lot: 389057  
 Extraction Lot: 206451  
 Instrument Name: R-MS-51  
 Dilution Factor: 3

CAS No.	Analyte Name	Result	Q	MRL	Note
95-94-3	1,2,4,5-Tetrachlorobenzene	1200	U	1200	
58-90-2	2,3,4,6-Tetrachlorophenol	1200	U	1200	
95-95-4	2,4,5-Trichlorophenol	1200	U	1200	
88-06-2	2,4,6-Trichlorophenol	1200	U	1200	
120-83-2	2,4-Dichlorophenol	1200	U	1200	
105-67-9	2,4-Dimethylphenol	1200	U	1200	
51-28-5	2,4-Dinitrophenol	6300	U	6300	
121-14-2	2,4-Dinitrotoluene	1200	U	1200	
606-20-2	2,6-Dinitrotoluene	1200	U	1200	
91-58-7	2-Chloronaphthalene	1200	U	1200	
95-57-8	2-Chlorophenol	1200	U	1200	
91-57-6	2-Methylnaphthalene	1200	U	1200	
95-48-7	2-Methylphenol	1200	U	1200	
88-74-4	2-Nitroaniline	6300	U	6300	
88-75-5	2-Nitrophenol	1200	U	1200	
91-94-1	3,3'-Dichlorobenzidine	1200	U	1200	
	3- and 4-Methylphenol Coelution	1200	U	1200	
99-09-2	3-Nitroaniline	6300	U	6300	
534-52-1	4,6-Dinitro-2-methylphenol	6300	U	6300	
101-55-3	4-Bromophenyl Phenyl Ether	1200	U	1200	
59-50-7	4-Chloro-3-methylphenol	1200	U	1200	
106-47-8	4-Chloroaniline	1200	U	1200	
7005-72-3	4-Chlorophenyl Phenyl Ether	1200	U	1200	
100-01-6	4-Nitroaniline	6300	U	6300	
100-02-7	4-Nitrophenol	6300	U	6300	
83-32-9	Acenaphthene	1200	U	1200	
208-96-8	Acenaphthylene	1200	U	1200	
98-86-2	Acetophenone	1200	U	1200	
120-12-7	Anthracene	1700		1200	
1912-24-9	Atrazine	1200	U	1200	
56-55-3	Benz(a)anthracene	7600		1200	
100-52-7	Benzaldehyde	6300	U	6300	
50-32-8	Benzo(a)pyrene	4600		1200	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1400  
 Date Received: 4/16/14  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 21:40

Sample Name: VARIAN-WC02  
 Lab Code: R1402720-002

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 81.6

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQDATA\5973A\DATA\041814\CY954.D\

Analysis Lot: 389057  
 Extraction Lot: 206451  
 Instrument Name: R-MS-51  
 Dilution Factor: 3

CAS No.	Analyte Name	Result	Q	MRL	Note
205-99-2	Benzo(b)fluoranthene	11000		1200	
191-24-2	Benzo(g,h,i)perylene	5200		1200	
207-08-9	Benzo(k)fluoranthene	4000		1200	
92-52-4	Biphenyl	1200	U	1200	
108-60-1	2,2'-Oxybis(1-chloropropane)	1200	U	1200	
111-91-1	Bis(2-chloroethoxy)methane	1200	U	1200	
111-44-4	Bis(2-chloroethyl) Ether	1200	U	1200	
117-81-7	Bis(2-ethylhexyl) Phthalate	9100		1200	
85-68-7	Butyl Benzyl Phthalate	1200	U	1200	
105-60-2	Caprolactam	1200	U	1200	
86-74-8	Carbazole	1900		1200	
218-01-9	Chrysene	8900		1200	
84-74-2	Di-n-butyl Phthalate	1200	U	1200	
117-84-0	Di-n-octyl Phthalate	1200	U	1200	
53-70-3	Dibenz(a,h)anthracene	1500		1200	
132-64-9	Dibenzofuran	1200	U	1200	
84-66-2	Diethyl Phthalate	1200	U	1200	
131-11-3	Dimethyl Phthalate	1200	U	1200	
206-44-0	Fluoranthene	13000		1200	
86-73-7	Fluorene	1200	U	1200	
118-74-1	Hexachlorobenzene	1200	U	1200	
87-68-3	Hexachlorobutadiene	1200	U	1200	
77-47-4	Hexachlorocyclopentadiene	1200	U	1200	
67-72-1	Hexachloroethane	1200	U	1200	
193-39-5	Indeno(1,2,3-cd)pyrene	6300		1200	
78-59-1	Isophorone	1200	U	1200	
621-64-7	N-Nitrosodi-n-propylamine	1200	U	1200	
86-30-6	N-Nitrosodiphenylamine	1200	U	1200	
91-20-3	Naphthalene	1200	U	1200	
98-95-3	Nitrobenzene	1200	U	1200	
87-86-5	Pentachlorophenol (PCP)	6300	U	6300	
85-01-8	Phenanthrene	5700		1200	
108-95-2	Phenol	1200	U	1200	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1400  
 Date Received: 4/16/14  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 21:40

Sample Name: VARIAN-WC02  
 Lab Code: R1402720-002

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 81.6

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQU\DATA\5973A\DATA\041814\CY954.D\

Analysis Lot: 389057  
 Extraction Lot: 206451  
 Instrument Name: R-MS-51  
 Dilution Factor: 3

CAS No.	Analyte Name	Result	Q	MRL	Note
129-00-0	Pyrene	10000		1200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	69	41-151	4/18/14 21:40	
2-Fluorobiphenyl	72	47-126	4/18/14 21:40	
2-Fluorophenol	58	16-129	4/18/14 21:40	
Nitrobenzene-d5	54	39-136	4/18/14 21:40	
Phenol-d6	62	10-145	4/18/14 21:40	
Terphenyl-d14	89	35-152	4/18/14 21:40	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1400  
 Date Received: 4/16/14  
 Date Extracted: 4/21/14  
 Date Analyzed: 4/21/14 17:37

Sample Name: VARIAN-WC02  
 Lab Code: R1402720-002

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 81.6

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQU\DATA\6890G\DATA\042114\AW977.D\

Analysis Lot: 389188  
 Extraction Lot: 206542  
 Instrument Name: R-GC-58  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
12674-11-2	Aroclor 1016	200	U	200	
11104-28-2	Aroclor 1221	410	U	410	
11141-16-5	Aroclor 1232	200	U	200	
53469-21-9	Aroclor 1242	200	U	200	
12672-29-6	Aroclor 1248	200	U	200	
11097-69-1	Aroclor 1254	560		200	
11096-82-5	Aroclor 1260	200	U	200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	61	22-150	4/21/14 17:37	
Tetrachloro-m-xylene	69	10-126	4/21/14 17:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1400  
 Date Received: 4/16/14  
 Date Extracted: 4/21/14  
 Date Analyzed: 4/22/14 10:29

Sample Name: VARIAN-WC02  
 Lab Code: R1402720-002

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 81.6

Diesel and Residual Range Organics by GC

Analytical Method: 8015C  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQUATA\6890\DATA\042214\AS640.D\

Analysis Lot: 389368  
 Extraction Lot: 206625  
 Instrument Name: R-GC-59  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
68334-30-5	Diesel Range Organics (DRO) as C10-C28	190000	49000	
	Alkanes			
	C28 - C40 ORO	69000	49000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
o-Terphenyl	83	50-150	4/22/14 10:29	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil  
 Sample Name: VARIAN-WC-03  
 Lab Code: R1402720-003

Service Request: R1402720  
 Date Collected: 4/11/14 1415  
 Date Received: 4/16/14

Basis: As Received

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Flash Point	1010A Modified	>100	deg C		1	NA	4/21/14 10:30	
pH	9045D	8.63	pH Units		1	NA	4/21/14 13:38	
Solids, Total	160.3 Modified	77.3	Percent	1.0	1	NA	4/21/14 11:10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil  
 Sample Name: VARIAN-WC-03  
 Lab Code: R1402720-003

Service Request: R1402720  
 Date Collected: 4/11/14 1415  
 Date Received: 4/16/14

Basis: Dry  
 Percent Solids: 77.3

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Cyanide, Reactive	9014	26	U	mg/Kg	26	1	4/21/14	4/21/14 15:48	
Sulfide, Reactive	9034 Modified	130	U	mg/Kg	130	1	4/21/14	4/21/01 09:00	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil  
 Sample Name: VARIAN-WC-03  
 Lab Code: R1402720-003

Service Request: R1402720  
 Date Collected: 4/11/14 1415  
 Date Received: 4/16/14

Basis: Dry  
 Percent Solids: 77.3

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Arsenic, Total	6010C	41.2		mg/Kg	1.2	1	4/18/14	4/22/14 01:00	
Barium, Total	6010C	46		mg/Kg	25	10	4/18/14	4/23/14 15:03	
Cadmium, Total	6010C	102		mg/Kg	0.62	1	4/18/14	4/22/14 01:00	
Chromium, Total	6010C	499		mg/Kg	1.2	1	4/18/14	4/22/14 01:00	
Lead, Total	6010C	392		mg/Kg	62	10	4/18/14	4/23/14 15:03	
Mercury, Total	7471B	0.098		mg/Kg	0.043	1	4/17/14	4/17/14 19:26	
Selenium, Total	6010C	12	U	mg/Kg	12	10	4/18/14	4/23/14 15:03	
Silver, Total	6010C	64.6		mg/Kg	1.2	1	4/18/14	4/22/14 01:00	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1415  
 Date Received: 4/16/14  
 Date Analyzed: 4/18/14 18:24

Sample Name: VARIAN-WC-03  
 Lab Code: R1402720-003

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 77.3

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\MSVOA7\DATA\041814\K8519.D\

Analysis Lot: 388901  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	6.5	U	6.5	
79-34-5	1,1,2,2-Tetrachloroethane	6.5	U	6.5	
79-00-5	1,1,2-Trichloroethane	6.5	U	6.5	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	6.5	U	6.5	
75-34-3	1,1-Dichloroethane (1,1-DCA)	6.5	U	6.5	
75-35-4	1,1-Dichloroethene (1,1-DCE)	6.5	U	6.5	
87-61-6	1,2,3-Trichlorobenzene	6.5	U	6.5	
120-82-1	1,2,4-Trichlorobenzene	6.5	U	6.5	
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	6.5	U	6.5	
106-93-4	1,2-Dibromoethane	6.5	U	6.5	
95-50-1	1,2-Dichlorobenzene	6.5	U	6.5	
107-06-2	1,2-Dichloroethane	6.5	U	6.5	
78-87-5	1,2-Dichloropropane	6.5	U	6.5	
541-73-1	1,3-Dichlorobenzene	6.5	U	6.5	
106-46-7	1,4-Dichlorobenzene	6.5	U	6.5	
123-91-1	1,4-Dioxane	130	U	130	
78-93-3	2-Butanone (MEK)	6.5	U	6.5	
591-78-6	2-Hexanone	6.5	U	6.5	
108-10-1	4-Methyl-2-pentanone	6.5	U	6.5	
67-64-1	Acetone	6.5	U	6.5	
71-43-2	Benzene	6.5	U	6.5	
74-97-5	Bromochloromethane	6.5	U	6.5	
75-27-4	Bromodichloromethane	6.5	U	6.5	
75-25-2	Bromoform	6.5	U	6.5	
74-83-9	Bromomethane	6.5	U	6.5	
75-15-0	Carbon Disulfide	6.5	U	6.5	
56-23-5	Carbon Tetrachloride	6.5	U	6.5	
108-90-7	Chlorobenzene	6.5	U	6.5	
75-00-3	Chloroethane	6.5	U	6.5	
67-66-3	Chloroform	6.5	U	6.5	
74-87-3	Chloromethane	6.5	U	6.5	
110-82-7	Cyclohexane	6.5	U	6.5	
124-48-1	Dibromochloromethane	6.5	U	6.5	
75-71-8	Dichlorodifluoromethane (CFC 12)	6.5	U	6.5	
75-09-2	Dichloromethane	6.5	U	6.5	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1415  
 Date Received: 4/16/14  
 Date Analyzed: 4/18/14 18:24

Sample Name: VARIAN-WC-03  
 Lab Code: R1402720-003

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 77.3

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041814\K8519.D\

Analysis Lot: 388901  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
100-41-4	Ethylbenzene	6.5	U	6.5	
98-82-8	Isopropylbenzene (Cumene)	6.5	U	6.5	
79-20-9	Methyl Acetate	6.5	U	6.5	
1634-04-4	Methyl tert-Butyl Ether	6.5	U	6.5	
108-87-2	Methylcyclohexane	6.5	U	6.5	
100-42-5	Styrene	6.5	U	6.5	
127-18-4	Tetrachloroethene (PCE)	7.7		6.5	
108-88-3	Toluene	6.5	U	6.5	
79-01-6	Trichloroethene (TCE)	6.5	U	6.5	
75-69-4	Trichlorofluoromethane (CFC 11)	6.5	U	6.5	
75-01-4	Vinyl Chloride	6.5	U	6.5	
156-59-2	cis-1,2-Dichloroethene	6.5	U	6.5	
10061-01-5	cis-1,3-Dichloropropene	6.5	U	6.5	
179601-23-1	m,p-Xylenes	13	U	13	
95-47-6	o-Xylene	6.5	U	6.5	
156-60-5	trans-1,2-Dichloroethene	6.5	U	6.5	
10061-02-6	trans-1,3-Dichloropropene	6.5	U	6.5	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	51-136	4/18/14 18:24	
Dibromofluoromethane	93	63-138	4/18/14 18:24	
Toluene-d8	99	66-138	4/18/14 18:24	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1415  
 Date Received: 4/16/14  
 Date Analyzed: 4/19/14 15:15

Sample Name: VARIAN-WC-03  
 Lab Code: R1402720-003

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 77.3

Gasoline Range Organics by GC

Analytical Method: 8015C  
 Data File Name: 1006.run

Analysis Lot: 388999  
 Instrument Name: R-GC-06  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
8006-61-9	Gasoline Range Organics as C6-C10 Commercial Fuel	65	U	65	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	84	35-142	4/19/14 15:15	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1415  
 Date Received: 4/16/14  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 22:06

Sample Name: VARIAN-WC-03  
 Lab Code: R1402720-003

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 77.3

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQU\DATA\5973A\DATA\041814\CY955.D\

Analysis Lot: 389057  
 Extraction Lot: 206451  
 Instrument Name: R-MS-51  
 Dilution Factor: 3

CAS No.	Analyte Name	Result	Q	MRL	Note
95-94-3	1,2,4,5-Tetrachlorobenzene	1300	U	1300	
58-90-2	2,3,4,6-Tetrachlorophenol	1300	U	1300	
95-95-4	2,4,5-Trichlorophenol	1300	U	1300	
88-06-2	2,4,6-Trichlorophenol	1300	U	1300	
120-83-2	2,4-Dichlorophenol	1300	U	1300	
105-67-9	2,4-Dimethylphenol	1300	U	1300	
51-28-5	2,4-Dinitrophenol	6600	U	6600	
121-14-2	2,4-Dinitrotoluene	1300	U	1300	
606-20-2	2,6-Dinitrotoluene	1300	U	1300	
91-58-7	2-Chloronaphthalene	1300	U	1300	
95-57-8	2-Chlorophenol	1300	U	1300	
91-57-6	2-Methylnaphthalene	1300	U	1300	
95-48-7	2-Methylphenol	1300	U	1300	
88-74-4	2-Nitroaniline	6600	U	6600	
88-75-5	2-Nitrophenol	1300	U	1300	
91-94-1	3,3'-Dichlorobenzidine	1300	U	1300	
	3- and 4-Methylphenol Coelution	1300	U	1300	
99-09-2	3-Nitroaniline	6600	U	6600	
534-52-1	4,6-Dinitro-2-methylphenol	6600	U	6600	
101-55-3	4-Bromophenyl Phenyl Ether	1300	U	1300	
59-50-7	4-Chloro-3-methylphenol	1300	U	1300	
106-47-8	4-Chloroaniline	1300	U	1300	
7005-72-3	4-Chlorophenyl Phenyl Ether	1300	U	1300	
100-01-6	4-Nitroaniline	6600	U	6600	
100-02-7	4-Nitrophenol	6600	U	6600	
83-32-9	Acenaphthene	1300	U	1300	
208-96-8	Acenaphthylene	1300	U	1300	
98-86-2	Acetophenone	1300	U	1300	
120-12-7	Anthracene	1300	U	1300	
1912-24-9	Atrazine	1300	U	1300	
56-55-3	Benz(a)anthracene	7200		1300	
100-52-7	Benzaldehyde	6600	U	6600	
50-32-8	Benzo(a)pyrene	4000		1300	

## Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1415  
 Date Received: 4/16/14  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 22:06

Sample Name: VARIAN-WC-03  
 Lab Code: R1402720-003

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 77.3

## Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQUATA\5973A\DATA\041814\CY955.D\

Analysis Lot: 389057  
 Extraction Lot: 206451  
 Instrument Name: R-MS-51  
 Dilution Factor: 3

CAS No.	Analyte Name	Result	Q	MRL	Note
205-99-2	Benzo(b)fluoranthene	11000		1300	
191-24-2	Benzo(g,h,i)perylene	5100		1300	
207-08-9	Benzo(k)fluoranthene	3900		1300	
92-52-4	Biphenyl	1300	U	1300	
108-60-1	2,2'-Oxybis(1-chloropropane)	1300	U	1300	
111-91-1	Bis(2-chloroethoxy)methane	1300	U	1300	
111-44-4	Bis(2-chloroethyl) Ether	1300	U	1300	
117-81-7	Bis(2-ethylhexyl) Phthalate	8500		1300	
85-68-7	Butyl Benzyl Phthalate	1300	U	1300	
105-60-2	Caprolactam	1300	U	1300	
86-74-8	Carbazole	1700		1300	
218-01-9	Chrysene	8900		1300	
84-74-2	Di-n-butyl Phthalate	1300	U	1300	
117-84-0	Di-n-octyl Phthalate	1300	U	1300	
53-70-3	Dibenz(a,h)anthracene	1600		1300	
132-64-9	Dibenzofuran	1300	U	1300	
84-66-2	Diethyl Phthalate	1300	U	1300	
131-11-3	Dimethyl Phthalate	1300	U	1300	
206-44-0	Fluoranthene	12000		1300	
86-73-7	Fluorene	1300	U	1300	
118-74-1	Hexachlorobenzene	1300	U	1300	
87-68-3	Hexachlorobutadiene	1300	U	1300	
77-47-4	Hexachlorocyclopentadiene	1300	U	1300	
67-72-1	Hexachloroethane	1300	U	1300	
193-39-5	Indeno(1,2,3-cd)pyrene	6100		1300	
78-59-1	Isophorone	1300	U	1300	
621-64-7	N-Nitrosodi-n-propylamine	1300	U	1300	
86-30-6	N-Nitrosodiphenylamine	1300	U	1300	
91-20-3	Naphthalene	1300	U	1300	
98-95-3	Nitrobenzene	1300	U	1300	
87-86-5	Pentachlorophenol (PCP)	6600	U	6600	
85-01-8	Phenanthrene	2700		1300	
108-95-2	Phenol	1300	U	1300	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1415  
 Date Received: 4/16/14  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 22:06

Sample Name: VARIAN-WC-03  
 Lab Code: R1402720-003

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 77.3

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQU\DATA\5973A\DATA\041814\CY955.D\

Analysis Lot: 389057  
 Extraction Lot: 206451  
 Instrument Name: R-MS-51  
 Dilution Factor: 3

CAS No.	Analyte Name	Result	Q	MRL	Note
129-00-0	Pyrene	9500		1300	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	71	41-151	4/18/14 22:06	
2-Fluorobiphenyl	63	47-126	4/18/14 22:06	
2-Fluorophenol	55	16-129	4/18/14 22:06	
Nitrobenzene-d5	52	39-136	4/18/14 22:06	
Phenol-d6	59	10-145	4/18/14 22:06	
Terphenyl-d14	85	35-152	4/18/14 22:06	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1415  
 Date Received: 4/16/14  
 Date Extracted: 4/21/14  
 Date Analyzed: 4/21/14 16:47

Sample Name: VARIAN-WC-03  
 Lab Code: R1402720-003

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 77.3

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQU\DATA\6890G\DATA\042114\AW975.D\

Analysis Lot: 389188  
 Extraction Lot: 206542  
 Instrument Name: R-GC-58  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
12674-11-2	Aroclor 1016	210	U	210	
11104-28-2	Aroclor 1221	430	U	430	
11141-16-5	Aroclor 1232	210	U	210	
53469-21-9	Aroclor 1242	210	U	210	
12672-29-6	Aroclor 1248	210	U	210	
11097-69-1	Aroclor 1254	810		210	
11096-82-5	Aroclor 1260	210	U	210	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	65	22-150	4/21/14 16:47	
Tetrachloro-m-xylene	64	10-126	4/21/14 16:47	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: 4/11/14 1415  
 Date Received: 4/16/14  
 Date Extracted: 4/21/14  
 Date Analyzed: 4/22/14 10:04

Sample Name: VARIAN-WC-03  
 Lab Code: R1402720-003

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 77.3

Diesel and Residual Range Organics by GC

Analytical Method: 8015C  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQUDATA\6890\DATA\042214\AS639.D\

Analysis Lot: 389368  
 Extraction Lot: 206625  
 Instrument Name: R-GC-59  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
68334-30-5	Diesel Range Organics (DRO) as C10-C28 Alkanes	960000	52000	
	C28 - C40 ORO	420000	52000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
o-Terphenyl	78	50-150	4/22/14 10:04	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: Method Blank  
 Lab Code: R1402720-MB1

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Cyanide, Reactive	9014	20	U	mg/Kg	20	1	4/21/14	4/21/14 15:41	
Sulfide, Reactive	9034 Modified	100	U	mg/Kg	100	1	4/21/14	4/21/01 09:00	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil  
 Sample Name: Method Blank  
 Lab Code: R1402720-MB2

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA

Basis: As Received

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Solids, Total	160.3 Modified	1.0 U	Percent	1.0	1	NA	4/21/14 11:10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil  
 Sample Name: Method Blank  
 Lab Code: R1402720-MB2

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA

Basis: Dry

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Cyanide, Reactive	9014	20	U	mg/Kg	20	1	4/21/14	4/21/14 15:47	
Sulfide, Reactive	9034 Modified	100	U	mg/Kg	100	1	4/21/14	4/21/01 09:00	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: Method Blank  
 Lab Code: R1402720-MB1

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Arsenic, Total	6010C	10	U	µg/L	10	1	4/21/14	4/22/14 12:38	
Barium, Total	6010C	20	U	µg/L	20	1	4/21/14	4/22/14 12:38	
Cadmium, Total	6010C	5.0	U	µg/L	5.0	1	4/21/14	4/22/14 12:38	
Chromium, Total	6010C	10	U	µg/L	10	1	4/21/14	4/22/14 12:38	
Lead, Total	6010C	50	U	µg/L	50	1	4/21/14	4/22/14 12:38	
Mercury, Total	7470A	0.20	U	µg/L	0.20	1	4/17/14	4/17/14 18:06	
Selenium, Total	6010C	10	U	µg/L	10	1	4/21/14	4/22/14 12:38	
Silver, Total	6010C	10	U	µg/L	10	1	4/21/14	4/22/14 12:38	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil  
 Sample Name: Method Blank  
 Lab Code: R1402720-MB2

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA

Basis: Dry

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Arsenic, Total	6010C	1.0	U	mg/Kg	1.0	1	4/18/14	4/21/14 22:53	
Barium, Total	6010C	2.0	U	mg/Kg	2.0	1	4/18/14	4/23/14 12:56	
Cadmium, Total	6010C	0.50	U	mg/Kg	0.50	1	4/18/14	4/21/14 22:53	
Chromium, Total	6010C	1.0	U	mg/Kg	1.0	1	4/18/14	4/21/14 22:53	
Lead, Total	6010C	5.0	U	mg/Kg	5.0	1	4/18/14	4/23/14 12:56	
Mercury, Total	7471B	0.033	U	mg/Kg	0.033	1	4/17/14	4/17/14 19:20	
Selenium, Total	6010C	1.0	U	mg/Kg	1.0	1	4/18/14	4/23/14 12:56	
Silver, Total	6010C	1.0	U	mg/Kg	1.0	1	4/18/14	4/21/14 22:53	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/18/14 15:43

Sample Name: Method Blank  
 Lab Code: RQ1403888-05

Units: µg/Kg  
 Basis: Dry

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\MSVOA7\DATA\041814\K8515.D\

Analysis Lot: 388901  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.0	U	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0	U	5.0	
87-61-6	1,2,3-Trichlorobenzene	5.0	U	5.0	
120-82-1	1,2,4-Trichlorobenzene	5.0	U	5.0	
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	5.0	U	5.0	
106-93-4	1,2-Dibromoethane	5.0	U	5.0	
95-50-1	1,2-Dichlorobenzene	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
541-73-1	1,3-Dichlorobenzene	5.0	U	5.0	
106-46-7	1,4-Dichlorobenzene	5.0	U	5.0	
123-91-1	1,4-Dioxane	100	U	100	
78-93-3	2-Butanone (MEK)	5.0	U	5.0	
591-78-6	2-Hexanone	5.0	U	5.0	
108-10-1	4-Methyl-2-pentanone	5.0	U	5.0	
67-64-1	Acetone	5.0	U	5.0	
71-43-2	Benzene	5.0	U	5.0	
74-97-5	Bromochloromethane	5.0	U	5.0	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
75-15-0	Carbon Disulfide	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
110-82-7	Cyclohexane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-71-8	Dichlorodifluoromethane (CFC 12)	5.0	U	5.0	
75-09-2	Dichloromethane	5.0	U	5.0	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/18/14 15:43

Sample Name: Method Blank  
 Lab Code: RQ1403888-05

Units: µg/Kg  
 Basis: Dry

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQU\DATA\MSVOA7\DATA\041814\K8515.D\

Analysis Lot: 388901  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
100-41-4	Ethylbenzene	5.0	U	5.0	
98-82-8	Isopropylbenzene (Cumene)	5.0	U	5.0	
79-20-9	Methyl Acetate	5.0	U	5.0	
1634-04-4	Methyl tert-Butyl Ether	5.0	U	5.0	
108-87-2	Methylcyclohexane	5.0	U	5.0	
100-42-5	Styrene	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	5.0	U	5.0	
108-88-3	Toluene	5.0	U	5.0	
79-01-6	Trichloroethene (TCE)	5.0	U	5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	5.0	U	5.0	
156-59-2	cis-1,2-Dichloroethene	5.0	U	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
179601-23-1	m,p-Xylenes	10	U	10	
95-47-6	o-Xylene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0	U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	51-136	4/18/14 15:43	
Dibromofluoromethane	93	63-138	4/18/14 15:43	
Toluene-d8	99	66-138	4/18/14 15:43	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/23/14 12:07

Sample Name: Method Blank  
 Lab Code: RQ1404137-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042314\F7824.D\

Analysis Lot: 389418  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
87-61-6	1,2,3-Trichlorobenzene	1.0	U	1.0	
120-82-1	1,2,4-Trichlorobenzene	1.0	U	1.0	
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	2.0	U	2.0	
106-93-4	1,2-Dibromoethane	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
123-91-1	1,4-Dioxane	40	U	40	
78-93-3	2-Butanone (MEK)	5.0	U	5.0	
591-78-6	2-Hexanone	5.0	U	5.0	
108-10-1	4-Methyl-2-pentanone	5.0	U	5.0	
67-64-1	Acetone	5.0	U	5.0	
71-43-2	Benzene	1.0	U	1.0	
74-97-5	Bromochloromethane	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
75-15-0	Carbon Disulfide	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
110-82-7	Cyclohexane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-71-8	Dichlorodifluoromethane (CFC 12)	1.0	U	1.0	
75-09-2	Dichloromethane	1.0	U	1.0	



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/23/14 12:07

Sample Name: Method Blank  
 Lab Code: RQ1404137-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa10\data\042314\F7824.D\

Analysis Lot: 389418  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
100-41-4	Ethylbenzene	1.0	U	1.0	
98-82-8	Isopropylbenzene (Cumene)	1.0	U	1.0	
79-20-9	Methyl Acetate	2.0	U	2.0	
1634-04-4	Methyl tert-Butyl Ether	1.0	U	1.0	
108-87-2	Methylcyclohexane	1.0	U	1.0	
100-42-5	Styrene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	85-122	4/23/14 12:07	
Dibromofluoromethane	99	89-119	4/23/14 12:07	
Toluene-d8	98	87-121	4/23/14 12:07	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/18/14 14:06

Sample Name: Method Blank  
 Lab Code: RQ1403860-01

Units: µg/L  
 Basis: NA

Gasoline Range Organics by GC

Analytical Method: 8015C  
 Data File Name: 1004.run

Analysis Lot: 388950  
 Instrument Name: R-GC-06  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
8006-61-9	Gasoline Range Organics as C6-C10 Commercial Fuel	50	U	50	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	89	73-112	4/18/14 14:06	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/19/14 12:31

Sample Name: Method Blank  
 Lab Code: RQ1403879-01

Units: µg/Kg  
 Basis: Dry

Gasoline Range Organics by GC

Analytical Method: 8015C  
 Data File Name: 1003.run

Analysis Lot: 388999  
 Instrument Name: R-GC-06  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
8006-61-9	Gasoline Range Organics as C6-C10 Commercial Fuel	50 U	50	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	91	35-142	4/19/14 12:31	



## ALS Group USA, Corp. dba ALS Environmental

## Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 10:54

Sample Name: Method Blank  
 Lab Code: RQ1403732-01

Units: µg/L  
 Basis: NA

## Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3510C  
 Data File Name: I:\ACQUDATA\5973D\Data\041814\AT750.D\

Analysis Lot: 389006  
 Extraction Lot: 206383  
 Instrument Name: R-MS-54  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
95-94-3	1,2,4,5-Tetrachlorobenzene	10	U	10	
58-90-2	2,3,4,6-Tetrachlorophenol	10	U	10	
95-95-4	2,4,5-Trichlorophenol	10	U	10	
88-06-2	2,4,6-Trichlorophenol	10	U	10	
120-83-2	2,4-Dichlorophenol	10	U	10	
105-67-9	2,4-Dimethylphenol	10	U	10	
51-28-5	2,4-Dinitrophenol	50	U	50	
121-14-2	2,4-Dinitrotoluene	10	U	10	
606-20-2	2,6-Dinitrotoluene	10	U	10	
91-58-7	2-Chloronaphthalene	10	U	10	
95-57-8	2-Chlorophenol	10	U	10	
91-57-6	2-Methylnaphthalene	10	U	10	
95-48-7	2-Methylphenol	10	U	10	
88-74-4	2-Nitroaniline	50	U	50	
88-75-5	2-Nitrophenol	10	U	10	
91-94-1	3,3'-Dichlorobenzidine	10	U	10	
	3- and 4-Methylphenol Coelution	10	U	10	
99-09-2	3-Nitroaniline	50	U	50	
534-52-1	4,6-Dinitro-2-methylphenol	50	U	50	
101-55-3	4-Bromophenyl Phenyl Ether	10	U	10	
59-50-7	4-Chloro-3-methylphenol	10	U	10	
106-47-8	4-Chloroaniline	10	U	10	
7005-72-3	4-Chlorophenyl Phenyl Ether	10	U	10	
100-01-6	4-Nitroaniline	50	U	50	
100-02-7	4-Nitrophenol	50	U	50	
83-32-9	Acenaphthene	10	U	10	
208-96-8	Acenaphthylene	10	U	10	
98-86-2	Acetophenone	10	U	10	
120-12-7	Anthracene	10	U	10	
1912-24-9	Atrazine	10	U	10	
56-55-3	Benz(a)anthracene	10	U	10	
100-52-7	Benzaldehyde	50	U	50	
50-32-8	Benzo(a)pyrene	10	U	10	

## Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 10:54

Sample Name: Method Blank  
 Lab Code: RQ1403732-01

Units: µg/L  
 Basis: NA

## Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3510C  
 Data File Name: I:\ACQUDATA\5973D\Data\041814\AT750.D\

Analysis Lot: 389006  
 Extraction Lot: 206383  
 Instrument Name: R-MS-54  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
205-99-2	Benzo(b)fluoranthene	10	U	10	
191-24-2	Benzo(g,h,i)perylene	10	U	10	
207-08-9	Benzo(k)fluoranthene	10	U	10	
92-52-4	Biphenyl	10	U	10	
108-60-1	2,2'-Oxybis(1-chloropropane)	10	U	10	
111-91-1	Bis(2-chloroethoxy)methane	10	U	10	
111-44-4	Bis(2-chloroethyl) Ether	10	U	10	
117-81-7	Bis(2-ethylhexyl) Phthalate	10	U	10	
85-68-7	Butyl Benzyl Phthalate	10	U	10	
105-60-2	Caprolactam	10	U	10	
86-74-8	Carbazole	10	U	10	
218-01-9	Chrysene	10	U	10	
84-74-2	Di-n-butyl Phthalate	10	U	10	
117-84-0	Di-n-octyl Phthalate	10	U	10	
53-70-3	Dibenz(a,h)anthracene	10	U	10	
132-64-9	Dibenzofuran	10	U	10	
84-66-2	Diethyl Phthalate	10	U	10	
131-11-3	Dimethyl Phthalate	10	U	10	
206-44-0	Fluoranthene	10	U	10	
86-73-7	Fluorene	10	U	10	
118-74-1	Hexachlorobenzene	10	U	10	
87-68-3	Hexachlorobutadiene	10	U	10	
77-47-4	Hexachlorocyclopentadiene	10	U	10	
67-72-1	Hexachloroethane	10	U	10	
193-39-5	Indeno(1,2,3-cd)pyrene	10	U	10	
78-59-1	Isophorone	10	U	10	
621-64-7	N-Nitrosodi-n-propylamine	10	U	10	
86-30-6	N-Nitrosodiphenylamine	10	U	10	
91-20-3	Naphthalene	10	U	10	
98-95-3	Nitrobenzene	10	U	10	
87-86-5	Pentachlorophenol (PCP)	50	U	50	
85-01-8	Phenanthrene	10	U	10	
108-95-2	Phenol	10	U	10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 10:54

Sample Name: Method Blank  
 Lab Code: RQ1403732-01

Units: µg/L  
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3510C  
 Data File Name: I:\ACQUDATA\5973D\Data\041814\AT750.D\

Analysis Lot: 389006  
 Extraction Lot: 206383  
 Instrument Name: R-MS-54  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
129-00-0	Pyrene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	126	28-157	4/18/14 10:54	
2-Fluorobiphenyl	91	39-119	4/18/14 10:54	
2-Fluorophenol	48	10-105	4/18/14 10:54	
Nitrobenzene-d5	91	37-117	4/18/14 10:54	
Phenol-d6	37	10-107	4/18/14 10:54	
Terphenyl-d14	122	40-133	4/18/14 10:54	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 13:14

Sample Name: Method Blank  
 Lab Code: RQ1403770-01

Units: µg/Kg  
 Basis: Dry

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQU\DATA\5973A\DATA\041814\CY936.D\

Analysis Lot: 389057  
 Extraction Lot: 206451  
 Instrument Name: R-MS-51  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
95-94-3	1,2,4,5-Tetrachlorobenzene	330	U	330	
58-90-2	2,3,4,6-Tetrachlorophenol	330	U	330	
95-95-4	2,4,5-Trichlorophenol	330	U	330	
88-06-2	2,4,6-Trichlorophenol	330	U	330	
120-83-2	2,4-Dichlorophenol	330	U	330	
105-67-9	2,4-Dimethylphenol	330	U	330	
51-28-5	2,4-Dinitrophenol	1700	U	1700	
121-14-2	2,4-Dinitrotoluene	330	U	330	
606-20-2	2,6-Dinitrotoluene	330	U	330	
91-58-7	2-Chloronaphthalene	330	U	330	
95-57-8	2-Chlorophenol	330	U	330	
91-57-6	2-Methylnaphthalene	330	U	330	
95-48-7	2-Methylphenol	330	U	330	
88-74-4	2-Nitroaniline	1700	U	1700	
88-75-5	2-Nitrophenol	330	U	330	
91-94-1	3,3'-Dichlorobenzidine	330	U	330	
	3- and 4-Methylphenol Coelution	330	U	330	
99-09-2	3-Nitroaniline	1700	U	1700	
534-52-1	4,6-Dinitro-2-methylphenol	1700	U	1700	
101-55-3	4-Bromophenyl Phenyl Ether	330	U	330	
59-50-7	4-Chloro-3-methylphenol	330	U	330	
106-47-8	4-Chloroaniline	330	U	330	
7005-72-3	4-Chlorophenyl Phenyl Ether	330	U	330	
100-01-6	4-Nitroaniline	1700	U	1700	
100-02-7	4-Nitrophenol	1700	U	1700	
83-32-9	Acenaphthene	330	U	330	
208-96-8	Acenaphthylene	330	U	330	
98-86-2	Acetophenone	330	U	330	
120-12-7	Anthracene	330	U	330	
1912-24-9	Atrazine	330	U	330	
56-55-3	Benz(a)anthracene	330	U	330	
100-52-7	Benzaldehyde	1700	U	1700	
50-32-8	Benzo(a)pyrene	330	U	330	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 13:14

Sample Name: Method Blank  
 Lab Code: RQ1403770-01

Units: µg/Kg  
 Basis: Dry

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQUDATA\5973A\DATA\041814\CY936.D\

Analysis Lot: 389057  
 Extraction Lot: 206451  
 Instrument Name: R-MS-51  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
205-99-2	Benzo(b)fluoranthene	330	U	330	
191-24-2	Benzo(g,h,i)perylene	330	U	330	
207-08-9	Benzo(k)fluoranthene	330	U	330	
92-52-4	Biphenyl	330	U	330	
108-60-1	2,2'-Oxybis(1-chloropropane)	330	U	330	
111-91-1	Bis(2-chloroethoxy)methane	330	U	330	
111-44-4	Bis(2-chloroethyl) Ether	330	U	330	
117-81-7	Bis(2-ethylhexyl) Phthalate	330	U	330	
85-68-7	Butyl Benzyl Phthalate	330	U	330	
105-60-2	Caprolactam	330	U	330	
86-74-8	Carbazole	330	U	330	
218-01-9	Chrysene	330	U	330	
84-74-2	Di-n-butyl Phthalate	330	U	330	
117-84-0	Di-n-octyl Phthalate	330	U	330	
53-70-3	Dibenz(a,h)anthracene	330	U	330	
132-64-9	Dibenzofuran	330	U	330	
84-66-2	Diethyl Phthalate	330	U	330	
131-11-3	Dimethyl Phthalate	330	U	330	
206-44-0	Fluoranthene	330	U	330	
86-73-7	Fluorene	330	U	330	
118-74-1	Hexachlorobenzene	330	U	330	
87-68-3	Hexachlorobutadiene	330	U	330	
77-47-4	Hexachlorocyclopentadiene	330	U	330	
67-72-1	Hexachloroethane	330	U	330	
193-39-5	Indeno(1,2,3-cd)pyrene	330	U	330	
78-59-1	Isophorone	330	U	330	
621-64-7	N-Nitrosodi-n-propylamine	330	U	330	
86-30-6	N-Nitrosodiphenylamine	330	U	330	
91-20-3	Naphthalene	330	U	330	
98-95-3	Nitrobenzene	330	U	330	
87-86-5	Pentachlorophenol (PCP)	1700	U	1700	
85-01-8	Phenanthrene	330	U	330	
108-95-2	Phenol	330	U	330	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 13:14

Sample Name: Method Blank  
 Lab Code: RQ1403770-01

Units: µg/Kg  
 Basis: Dry

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQU\DATA\5973A\DATA\041814\CY936.D\

Analysis Lot: 389057  
 Extraction Lot: 206451  
 Instrument Name: R-MS-51  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
129-00-0	Pyrene	330	U	330	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	57	41-151	4/18/14 13:14	
2-Fluorobiphenyl	71	47-126	4/18/14 13:14	
2-Fluorophenol	61	16-129	4/18/14 13:14	
Nitrobenzene-d5	58	39-136	4/18/14 13:14	
Phenol-d6	70	10-145	4/18/14 13:14	
Terphenyl-d14	74	35-152	4/18/14 13:14	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 14:22

Sample Name: Method Blank  
 Lab Code: RQ1403770-01

Units: µg/Kg  
 Basis: Dry

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQUADATA\5973D\Data\041814\AT758.D\

Analysis Lot: 389006  
 Extraction Lot: 206451  
 Instrument Name: R-MS-54  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
95-94-3	1,2,4,5-Tetrachlorobenzene	330	U	330	
58-90-2	2,3,4,6-Tetrachlorophenol	330	U	330	
95-95-4	2,4,5-Trichlorophenol	330	U	330	
88-06-2	2,4,6-Trichlorophenol	330	U	330	
120-83-2	2,4-Dichlorophenol	330	U	330	
105-67-9	2,4-Dimethylphenol	330	U	330	
51-28-5	2,4-Dinitrophenol	1700	U	1700	
121-14-2	2,4-Dinitrotoluene	330	U	330	
606-20-2	2,6-Dinitrotoluene	330	U	330	
91-58-7	2-Chloronaphthalene	330	U	330	
95-57-8	2-Chlorophenol	330	U	330	
91-57-6	2-Methylnaphthalene	330	U	330	
95-48-7	2-Methylphenol	330	U	330	
88-74-4	2-Nitroaniline	1700	U	1700	
88-75-5	2-Nitrophenol	330	U	330	
91-94-1	3,3'-Dichlorobenzidine	330	U	330	
	3- and 4-Methylphenol Coelution	330	U	330	
99-09-2	3-Nitroaniline	1700	U	1700	
534-52-1	4,6-Dinitro-2-methylphenol	1700	U	1700	
101-55-3	4-Bromophenyl Phenyl Ether	330	U	330	
59-50-7	4-Chloro-3-methylphenol	330	U	330	
106-47-8	4-Chloroaniline	330	U	330	
7005-72-3	4-Chlorophenyl Phenyl Ether	330	U	330	
100-01-6	4-Nitroaniline	1700	U	1700	
100-02-7	4-Nitrophenol	1700	U	1700	
83-32-9	Acenaphthene	330	U	330	
208-96-8	Acenaphthylene	330	U	330	
98-86-2	Acetophenone	330	U	330	
120-12-7	Anthracene	330	U	330	
1912-24-9	Atrazine	330	U	330	
56-55-3	Benz(a)anthracene	330	U	330	
100-52-7	Benzaldehyde	1700	U	1700	
50-32-8	Benzo(a)pyrene	330	U	330	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 14:22

Sample Name: Method Blank  
 Lab Code: RQ1403770-01

Units: µg/Kg  
 Basis: Dry

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQUDATA\5973D\Data\041814\AT758.D\

Analysis Lot: 389006  
 Extraction Lot: 206451  
 Instrument Name: R-MS-54  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
205-99-2	Benzo(b)fluoranthene	330	U	330	
191-24-2	Benzo(g,h,i)perylene	330	U	330	
207-08-9	Benzo(k)fluoranthene	330	U	330	
92-52-4	Biphenyl	330	U	330	
108-60-1	2,2'-Oxybis(1-chloropropane)	330	U	330	
111-91-1	Bis(2-chloroethoxy)methane	330	U	330	
111-44-4	Bis(2-chloroethyl) Ether	330	U	330	
117-81-7	Bis(2-ethylhexyl) Phthalate	330	U	330	
85-68-7	Butyl Benzyl Phthalate	330	U	330	
105-60-2	Caprolactam	330	U	330	
86-74-8	Carbazole	330	U	330	
218-01-9	Chrysene	330	U	330	
84-74-2	Di-n-butyl Phthalate	330	U	330	
117-84-0	Di-n-octyl Phthalate	330	U	330	
53-70-3	Dibenz(a,h)anthracene	330	U	330	
132-64-9	Dibenzofuran	330	U	330	
84-66-2	Diethyl Phthalate	330	U	330	
131-11-3	Dimethyl Phthalate	330	U	330	
206-44-0	Fluoranthene	330	U	330	
86-73-7	Fluorene	330	U	330	
118-74-1	Hexachlorobenzene	330	U	330	
87-68-3	Hexachlorobutadiene	330	U	330	
77-47-4	Hexachlorocyclopentadiene	330	U	330	
67-72-1	Hexachloroethane	330	U	330	
193-39-5	Indeno(1,2,3-cd)pyrene	330	U	330	
78-59-1	Isophorone	330	U	330	
621-64-7	N-Nitrosodi-n-propylamine	330	U	330	
86-30-6	N-Nitrosodiphenylamine	330	U	330	
91-20-3	Naphthalene	330	U	330	
98-95-3	Nitrobenzene	330	U	330	
87-86-5	Pentachlorophenol (PCP)	1700	U	1700	
85-01-8	Phenanthrene	330	U	330	
108-95-2	Phenol	330	U	330	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 14:22

Sample Name: Method Blank  
 Lab Code: RQ1403770-01

Units: µg/Kg  
 Basis: Dry

Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQU\DATA\5973D\Data\041814\AT758.D\

Analysis Lot: 389006  
 Extraction Lot: 206451  
 Instrument Name: R-MS-54  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
129-00-0	Pyrene	330	U	330	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	70	41-151	4/18/14 14:22	
2-Fluorobiphenyl	79	47-126	4/18/14 14:22	
2-Fluorophenol	60	16-129	4/18/14 14:22	
Nitrobenzene-d5	68	39-136	4/18/14 14:22	
Phenol-d6	67	10-145	4/18/14 14:22	
Terphenyl-d14	90	35-152	4/18/14 14:22	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/17/14  
 Date Analyzed: 4/18/14 16:33

Sample Name: Method Blank  
 Lab Code: RQ1403731-01

Units: µg/L  
 Basis: NA

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A  
 Prep Method: EPA 3510C  
 Data File Name: I:\ACQUDATA\GCEXT4\DATA\041814\NM428.D\

Analysis Lot: 388987  
 Extraction Lot: 206382  
 Instrument Name: R-GC-56  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
12674-11-2	Aroclor 1016	1.0	U	1.0	
11104-28-2	Aroclor 1221	2.0	U	2.0	
11141-16-5	Aroclor 1232	1.0	U	1.0	
53469-21-9	Aroclor 1242	1.0	U	1.0	
12672-29-6	Aroclor 1248	1.0	U	1.0	
11097-69-1	Aroclor 1254	1.0	U	1.0	
11096-82-5	Aroclor 1260	1.0	U	1.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	71	10-124	4/18/14 16:33	
Tetrachloro-m-xylene	77	11-131	4/18/14 16:33	



Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/21/14  
 Date Analyzed: 4/21/14 18:28

Sample Name: Method Blank  
 Lab Code: RQ1403871-01

Units: µg/Kg  
 Basis: Dry

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQU\DATA\6890G\DATA\042114\AW979.D\

Analysis Lot: 389188  
 Extraction Lot: 206542  
 Instrument Name: R-GC-58  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
12674-11-2	Aroclor 1016	33	U	33	
11104-28-2	Aroclor 1221	67	U	67	
11141-16-5	Aroclor 1232	33	U	33	
53469-21-9	Aroclor 1242	33	U	33	
12672-29-6	Aroclor 1248	33	U	33	
11097-69-1	Aroclor 1254	33	U	33	
11096-82-5	Aroclor 1260	33	U	33	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	70	22-150	4/21/14 18:28	
Tetrachloro-m-xylene	77	10-126	4/21/14 18:28	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/18/14  
 Date Analyzed: 4/21/14 09:13

Sample Name: Method Blank  
 Lab Code: RQ1403802-01

Units: µg/L  
 Basis: NA

Diesel and Residual Range Organics by GC

Analytical Method: 8015C  
 Prep Method: EPA 3510C  
 Data File Name: I:\ACQU\DATA\6890\DATA\042114\AS629.D\

Analysis Lot: 389021  
 Extraction Lot: 206509  
 Instrument Name: R-GC-59  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68334-30-5	Diesel Range Organics (DRO) as C10-C28	100	U	100	
	Alkanes				
	C28 - C40 ORO	100	U	100	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
o-Terphenyl	87	40-147	4/21/14 09:13	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Collected: NA  
 Date Received: NA  
 Date Extracted: 4/21/14  
 Date Analyzed: 4/22/14 08:25

Sample Name: Method Blank  
 Lab Code: RQ1403890-01

Units: µg/Kg  
 Basis: Dry

Diesel and Residual Range Organics by GC

Analytical Method: 8015C  
 Prep Method: EPA 3541  
 Data File Name: I:\ACQU\DATA\6890\DATA\042214\AS635.D\

Analysis Lot: 389368  
 Extraction Lot: 206625  
 Instrument Name: R-GC-59  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68334-30-5	Diesel Range Organics (DRO) as C10-C28	40000	U	40000	
	Alkanes	40000	U	40000	
	C28 - C40 ORO	40000	U	40000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
o-Terphenyl	82	50-150	4/22/14 08:25	



Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Analyzed: 4/21/01 -  
 4/21/14

Lab Control Sample Summary  
 General Chemistry Parameters

Units: mg/Kg  
 Basis: Dry

Lab Control Sample  
 R1402720-LCS1

Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Reactive	9014	5.61	203	3	1 - 100
Sulfide, Reactive	9034 Modified	119	200	58	21 - 118

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Analyzed: 4/21/01 -  
 4/21/14

Lab Control Sample Summary  
 General Chemistry Parameters

Units: deg C  
 Basis: NA

Analyte Name	Method	Lab Control Sample R1402720-LCS2		% Rec	% Rec Limits
		Result	Spike Amount		
Flash Point	1010A	27.6	27.2		24.5 - 29.9

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Analyzed: 4/21/01 -  
 4/21/14

Lab Control Sample Summary  
 General Chemistry Parameters

Units: mg/Kg  
 Basis: NA

Analyte Name	Method	Lab Control Sample R1402720-LCS2			
		Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Reactive	9014	4.29	203	2	1 - 100
Sulfide, Reactive	9034 Modified	113	200	55	34 - 126

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Analyzed: 4/17/14 -  
 4/23/14

Lab Control Sample Summary  
 Inorganic Parameters

Units: mg/Kg  
 Basis: Dry

Lab Control Sample  
 R1402720-LCS1

Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic, Total	6010C	82.1	94.5	87	82.3 - 117
Barium, Total	6010C	167	167	100	83.8 - 115
Cadmium, Total	6010C	54.7	60.5	90	83.1 - 116
Chromium, Total	6010C	69.1	70.4	98	81.8 - 118
Lead, Total	6010C	86.4	91.8	94	82.2 - 117
Mercury, Total	7471B	3.69	3.73	99	71.6 - 128
Selenium, Total	6010C	74.7	86.4	86	80.1 - 120
Silver, Total	6010C	32.2	34.4	94	66.3 - 134

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Analyzed: 4/17/14 -  
 4/22/14

Lab Control Sample Summary  
 Inorganic Parameters

Units: µg/L  
 Basis: NA

Lab Control Sample  
 R1402720-LCS2

Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic, Total	6010C	33.8	40	84	80 - 120
Barium, Total	6010C	1990	2000	100	80 - 120
Cadmium, Total	6010C	47.7	50.0	95	80 - 120
Chromium, Total	6010C	200	200	100	80 - 120
Lead, Total	6010C	490	500	98	80 - 120
Mercury, Total	7470A	1.00	1.00	100	80 - 120
Selenium, Total	6010C	989	1010	98	80 - 120
Silver, Total	6010C	48.2	50	96	80 - 120

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/Kg  
 Basis: Dry

Analysis Lot: 388901

Analyte Name	Lab Control Sample RQ1403888-03			Duplicate Lab Control Sample RQ1403888-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	18.2	20.0	91	17.7	20.0	88	65 - 127	3	30
1,1,2,2-Tetrachloroethane	19.7	20.0	99	19.2	20.0	96	71 - 134	3	30
1,1,2-Trichloroethane	19.0	20.0	95	18.8	20.0	94	76 - 123	1	30
1,1,2-Trichloro-1,2,2-trifluoroethane	30.3	20.0	151 *	28.0	20.0	140 *	59 - 127	8	30
1,1-Dichloroethane (1,1-DCA)	18.7	20.0	93	18.8	20.0	94	75 - 126	1	30
1,1-Dichloroethene (1,1-DCE)	23.6	20.0	118	22.9	20.0	114	69 - 135	3	30
1,2,3-Trichlorobenzene	20.5	20.0	103	19.4	20.0	97	70 - 139	6	30
1,2,4-Trichlorobenzene	22.5	20.0	113	20.9	20.0	105	68 - 136	7	30
1,2-Dibromo-3-chloropropane (DBCP)	17.8	20.0	89	18.2	20.0	91	56 - 138	2	30
1,2-Dibromoethane	19.6	20.0	98	19.6	20.0	98	73 - 125	<1	30
1,2-Dichlorobenzene	21.2	20.0	106	20.6	20.0	103	77 - 125	3	30
1,2-Dichloroethane	16.7	20.0	84	16.8	20.0	84	69 - 121	<1	30
1,2-Dichloropropane	20.4	20.0	102	20.2	20.0	101	79 - 124	<1	30
1,3-Dichlorobenzene	22.2	20.0	111	21.2	20.0	106	74 - 130	5	30
1,4-Dichlorobenzene	21.8	20.0	109	21.0	20.0	105	75 - 129	4	30
1,4-Dioxane	402	400	101	413	400	103	59 - 152	2	30
2-Butanone (MEK)	17.0	20.0	85	17.3	20.0	86	63 - 135	1	30
2-Hexanone	17.1	20.0	86	17.4	20.0	87	59 - 144	1	30
4-Methyl-2-pentanone	17.3	20.0	86	17.8	20.0	89	65 - 138	3	30
Acetone	19.2	20.0	96	18.3	20.0	91	50 - 151	5	30
Benzene	20.6	20.0	103	20.2	20.0	101	75 - 124	2	30
Bromochloromethane	20.6	20.0	103	21.1	20.0	105	79 - 125	2	30
Bromodichloromethane	18.7	20.0	93	18.6	20.0	93	77 - 127	<1	30
Bromoform	17.2	20.0	86	18.8	20.0	94	61 - 144	9	30
Bromomethane	20.0	20.0	100	18.5	20.0	93	52 - 140	7	30
Carbon Disulfide	19.4	20.0	97	18.3	20.0	91	66 - 135	6	30
Carbon Tetrachloride	18.9	20.0	94	18.5	20.0	92	58 - 125	2	30
Chlorobenzene	20.8	20.0	104	20.1	20.0	100	77 - 124	4	30
Chloroethane	21.2	20.0	106	20.7	20.0	103	56 - 138	3	30
Chloroform	18.0	20.0	90	17.7	20.0	88	75 - 126	2	30
Chloromethane	21.4	20.0	107	20.7	20.0	103	52 - 145	4	30
Cyclohexane	17.5	20.0	87	16.8	20.0	84	54 - 135	4	30
Dibromochloromethane	18.9	20.0	94	18.7	20.0	94	69 - 133	<1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/Kg  
 Basis: Dry

Analysis Lot: 388901

Analyte Name	Lab Control Sample RQ1403888-03			Duplicate Lab Control Sample RQ1403888-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Dichlorodifluoromethane (CFC 12)	19.9	20.0	100	19.2	20.0	96	46 - 146	4	30
Dichloromethane	20.9	20.0	104	20.7	20.0	104	75 - 122	<1	30
Ethylbenzene	20.5	20.0	102	20.1	20.0	100	70 - 130	2	30
Isopropylbenzene (Cumene)	21.4	20.0	107	21.0	20.0	105	72 - 145	2	30
Methyl Acetate	18.0	20.0	90	18.6	20.0	93	61 - 144	3	30
Methyl tert-Butyl Ether	18.7	20.0	93	18.8	20.0	94	69 - 124	1	30
Methylcyclohexane	17.9	20.0	90	17.2	20.0	86	57 - 131	5	30
Styrene	21.0	20.0	105	20.6	20.0	103	71 - 127	2	30
Tetrachloroethene (PCE)	22.7	20.0	113	21.8	20.0	109	67 - 133	4	30
Toluene	20.3	20.0	101	19.7	20.0	99	72 - 127	2	30
Trichloroethene (TCE)	20.1	20.0	100	19.9	20.0	100	72 - 128	<1	30
Trichlorofluoromethane (CFC 11)	18.2	20.0	91	18.0	20.0	90	62 - 138	1	30
Vinyl Chloride	21.4	20.0	107	20.9	20.0	104	58 - 152	3	30
cis-1,2-Dichloroethene	20.9	20.0	105	20.3	20.0	102	75 - 127	3	30
cis-1,3-Dichloropropene	18.9	20.0	95	18.3	20.0	91	73 - 120	4	30
m,p-Xylenes	43.0	40.0	107	41.9	40.0	105	70 - 131	2	30
o-Xylene	20.9	20.0	104	21.3	20.0	106	71 - 127	2	30
trans-1,2-Dichloroethene	21.2	20.0	106	20.6	20.0	103	69 - 125	3	30
trans-1,3-Dichloropropene	17.8	20.0	89	17.2	20.0	86	68 - 120	3	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Analyzed: 4/23/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389418

Lab Control Sample  
 RQ1404137-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	17.1	20.0	86	67 - 121
1,1,2,2-Tetrachloroethane	17.8	20.0	89	72 - 124
1,1,2-Trichloroethane	17.9	20.0	90	81 - 117
1,1,2-Trichloro-1,2,2-trifluoroethane	18.1	20.0	90	60 - 123
1,1-Dichloroethane (1,1-DCA)	18.7	20.0	93	76 - 128
1,1-Dichloroethene (1,1-DCE)	20.5	20.0	102	74 - 135
1,2,3-Trichlorobenzene	18.2	20.0	91	67 - 135
1,2,4-Trichlorobenzene	18.7	20.0	94	70 - 130
1,2-Dibromo-3-chloropropane (DBCP)	16.7	20.0	83	64 - 131
1,2-Dibromoethane	18.4	20.0	92	81 - 118
1,2-Dichlorobenzene	18.5	20.0	92	80 - 119
1,2-Dichloroethane	16.8	20.0	84	72 - 130
1,2-Dichloropropane	19.5	20.0	97	80 - 119
1,3-Dichlorobenzene	18.0	20.0	90	79 - 121
1,4-Dichlorobenzene	17.5	20.0	87	79 - 119
1,4-Dioxane	421	400	105	51 - 180
2-Butanone (MEK)	18.0	20.0	90	60 - 133
2-Hexanone	17.1	20.0	86	61 - 131
4-Methyl-2-pentanone	18.0	20.0	90	61 - 132
Acetone	14.3	20.0	72	61 - 138
Benzene	18.3	20.0	92	76 - 118
Bromochloromethane	19.2	20.0	96	83 - 123
Bromodichloromethane	17.9	20.0	89	79 - 123
Bromoform	18.1	20.0	90	72 - 128
Bromomethane	21.9	20.0	110	46 - 157
Carbon Disulfide	22.9	20.0	114	61 - 144
Carbon Tetrachloride	17.1	20.0	85	64 - 129
Chlorobenzene	18.0	20.0	90	80 - 121
Chloroethane	16.8	20.0	84	69 - 128
Chloroform	17.8	20.0	89	75 - 123
Chloromethane	20.1	20.0	101	55 - 139
Cyclohexane	19.5	20.0	97	55 - 132
Dibromochloromethane	18.4	20.0	92	78 - 127

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Analyzed: 4/23/14

**Lab Control Sample Summary**  
**Volatile Organic Compounds by GC/MS**

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389418

**Lab Control Sample**  
 RQ1404137-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Dichlorodifluoromethane (CFC 12)	18.6	20.0	93	45 - 147
Dichloromethane	19.6	20.0	98	73 - 122
Ethylbenzene	18.1	20.0	91	75 - 123
Isopropylbenzene (Cumene)	18.2	20.0	91	75 - 139
Methyl Acetate	20.4	20.0	102	65 - 131
Methyl tert-Butyl Ether	18.9	20.0	95	75 - 116
Methylcyclohexane	19.9	20.0	100	59 - 127
Styrene	18.9	20.0	95	80 - 121
Tetrachloroethene (PCE)	18.0	20.0	90	71 - 127
Toluene	17.9	20.0	89	77 - 120
Trichloroethene (TCE)	17.6	20.0	88	75 - 122
Trichlorofluoromethane (CFC 11)	16.6	20.0	83	64 - 134
Vinyl Chloride	19.1	20.0	96	68 - 139
cis-1,2-Dichloroethene	18.1	20.0	91	77 - 123
cis-1,3-Dichloropropene	18.0	20.0	90	77 - 125
m,p-Xylenes	37.8	40.0	94	77 - 124
o-Xylene	18.7	20.0	93	77 - 131
trans-1,2-Dichloroethene	18.1	20.0	90	72 - 120
trans-1,3-Dichloropropene	17.7	20.0	89	69 - 127

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Gasoline Range Organics by GC

Analytical Method: 8015C

Units: µg/L  
 Basis: NA

Analysis Lot: 388950

Analyte Name	Lab Control Sample RQ1403860-02			Duplicate Lab Control Sample RQ1403860-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Gasoline Range Organics as C6-C10 Commercial	405	499	81	387	499	78	52 - 140	5	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Soil

Service Request: R1402720  
Date Analyzed: 4/19/14

Lab Control Sample Summary  
Gasoline Range Organics by GC

Analytical Method: 8015C

Units: µg/Kg  
Basis: Dry

Analysis Lot: 388999

Lab Control Sample  
RQ1403879-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Gasoline Range Organics as C6-C10 Commercial	468	499	94	70 - 128

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541

Units: µg/Kg  
 Basis: Dry

Extraction Lot: 206451

Analyte Name	Lab Control Sample RQ1403770-02			Duplicate Lab Control Sample RQ1403770-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,2,4,5-Tetrachlorobenzene	2720	3330	82	2470	3330	74	31 - 127	10	30
2,3,4,6-Tetrachlorophenol	2780	3330	83	2540	3330	76	37 - 156	9	30
2,4,5-Trichlorophenol	2630	3330	79	2440	3330	73	47 - 131	8	30
2,4,6-Trichlorophenol	2620	3330	79	2470	3330	74	46 - 136	6	30
2,4-Dichlorophenol	2460	3330	74	2390	3330	72	39 - 135	3	30
2,4-Dimethylphenol	2220	3330	67	2090	3330	63	31 - 135	6	30
2,4-Dinitrophenol	630	3330	19	622	3330	19	10 - 148	1	30
2,4-Dinitrotoluene	2920	3330	88	2520	3330	76	45 - 152	15	30
2,6-Dinitrotoluene	2760	3330	83	2380	3330	72	50 - 146	15	30
2-Chloronaphthalene	2750	3330	83	2520	3330	76	41 - 124	9	30
2-Chlorophenol	2560	3330	77	2470	3330	74	39 - 123	3	30
2-Methylnaphthalene	2370	3330	71	2240	3330	67	33 - 125	6	30
2-Methylphenol	2540	3330	76	2240	3330	67	38 - 123	12	30
2-Nitroaniline	3080	3330	92	2790	3330	84	44 - 139	10	30
2-Nitrophenol	3020	3330	91	2910	3330	87	47 - 128	4	30
3,3'-Dichlorobenzidine	2360	3330	71	2300	3330	69	19 - 111	3	30
3- and 4-Methylphenol Coelution	4900	6670	73	4250	6670	64	42 - 114	14	30
3-Nitroaniline	2660	3330	80	2450	3330	73	43 - 106	9	30
4,6-Dinitro-2-methylphenol	1270	3330	38	1100	3330	33	29 - 141	15	30
4-Bromophenyl Phenyl Ether	2680	3330	80	2330	3330	70	45 - 137	14	30
4-Chloro-3-methylphenol	2410	3330	72	2350	3330	70	42 - 140	3	30
4-Chloroaniline	2120	3330	63	2070	3330	62	34 - 101	2	30
4-Chlorophenyl Phenyl Ether	2780	3330	83	2530	3330	76	47 - 132	10	30
4-Nitroaniline	2870	3330	86	2520	3330	75	34 - 131	13	30
4-Nitrophenol	2410	3330	72	2200	3330	66	10 - 130	9	30
Acenaphthene	2600	3330	78	2440	3330	73	43 - 133	7	30
Acenaphthylene	2700	3330	81	2550	3330	76	45 - 133	6	30
Acetophenone	2550	3330	76	2170	3330	65	44 - 114	16	30
Anthracene	2650	3330	79	2480	3330	74	48 - 129	7	30
Atrazine	3840	3330	115	3630	3330	109	39 - 151	6	30
Benz(a)anthracene	2460	3330	74	2390	3330	72	48 - 129	3	30
Benzaldehyde	9160	3330	275 *	8590	3330	258 *	62 - 200	6	30
Benzo(a)pyrene	2530	3330	76	2410	3330	72	45 - 125	5	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3541

Units: µg/Kg  
 Basis: Dry

Extraction Lot: 206451

Analyte Name	Lab Control Sample RQ1403770-02			Duplicate Lab Control Sample RQ1403770-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Benzo(b)fluoranthene	2620	3330	79	2390	3330	72	45 - 136	9	30
Benzo(g,h,i)perylene	2760	3330	83	2580	3330	77	51 - 131	7	30
Benzo(k)fluoranthene	2380	3330	72	2310	3330	69	43 - 131	3	30
Biphenyl	2760	3330	83	2600	3330	78	35 - 131	6	30
2,2'-Oxybis(1-chloropropane)	2830	3330	85	2410	3330	72	38 - 138	16	30
Bis(2-chloroethoxy)methane	2550	3330	77	2430	3330	73	48 - 123	5	30
Bis(2-chloroethyl) Ether	2410	3330	72	2090	3330	63	44 - 111	14	30
Bis(2-ethylhexyl) Phthalate	2810	3330	84	2630	3330	79	50 - 142	6	30
Butyl Benzyl Phthalate	2480	3330	74	2360	3330	71	46 - 137	5	30
Caprolactam	2640	3330	79	2470	3330	74	42 - 112	7	30
Carbazole	2670	3330	80	2550	3330	76	40 - 140	4	30
Chrysene	2560	3330	77	2360	3330	71	48 - 128	8	30
Di-n-butyl Phthalate	3280	3330	98	2760	3330	83	36 - 164	17	30
Di-n-octyl Phthalate	2870	3330	86	2690	3330	81	48 - 137	7	30
Dibenz(a,h)anthracene	2680	3330	80	2550	3330	77	50 - 135	5	30
Dibenzofuran	2590	3330	78	2380	3330	71	45 - 126	9	30
Diethyl Phthalate	2880	3330	86	2580	3330	77	46 - 141	11	30
Dimethyl Phthalate	2830	3330	85	2520	3330	75	48 - 139	12	30
Fluoranthene	3160	3330	95	2730	3330	82	46 - 138	15	30
Fluorene	2780	3330	83	2420	3330	73	46 - 134	14	30
Hexachlorobenzene	2620	3330	79	2380	3330	71	41 - 138	10	30
Hexachlorobutadiene	2430	3330	73	2280	3330	68	10 - 142	7	30
Hexachlorocyclopentadiene	2710	3330	81	2420	3330	73	10 - 133	11	30
Hexachloroethane	2240	3330	67	1850	3330	55	10 - 129	19	30
Indeno(1,2,3-cd)pyrene	2650	3330	80	2550	3330	76	48 - 128	4	30
Isophorone	2400	3330	72	2280	3330	68	44 - 122	5	30
N-Nitrosodi-n-propylamine	2460	3330	74	2140	3330	64	44 - 126	14	30
N-Nitrosodiphenylamine	2620	3330	79	2550	3330	77	43 - 156	3	30
Naphthalene	2530	3330	76	2310	3330	69	31 - 123	9	30
Nitrobenzene	2410	3330	72	2240	3330	67	35 - 134	7	30
Pentachlorophenol (PCP)	1820	3330	55	1650	3330	49	17 - 150	10	30
Phenanthrene	2700	3330	81	2500	3330	75	45 - 140	7	30
Phenol	2620	3330	79	2380	3330	71	10 - 144	9	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Analyzed: 4/18/14

**Lab Control Sample Summary**  
**Semivolatile Organic Compounds by GC/MS**

Analytical Method: 8270D  
 Prep Method: EPA 3541

Units: µg/Kg  
 Basis: Dry

Extraction Lot: 206451

Analyte Name	Lab Control Sample RQ1403770-02			Duplicate Lab Control Sample RQ1403770-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Pyrene	2740	3330	82	2530	3330	76	45 - 132	8	30

\* Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3510C

Units: µg/L  
 Basis: NA

Extraction Lot: 206383

Analyte Name	Lab Control Sample RQ1403732-02			Duplicate Lab Control Sample RQ1403732-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,2,4,5-Tetrachlorobenzene	89.5	101	89	88.1	101	87	31 - 100	2	30
2,3,4,6-Tetrachlorophenol	109	100	109	110	100	110	87 - 145	<1	30
2,4,5-Trichlorophenol	109	100	109	108	100	108	62 - 117	<1	30
2,4,6-Trichlorophenol	108	100	108	107	100	107	62 - 115	<1	30
2,4-Dichlorophenol	101	100	101	99.9	100	100	62 - 109	<1	30
2,4-Dimethylphenol	97.9	100	98	96.4	100	96	28 - 100	2	30
2,4-Dinitrophenol	181	100	181 *	186	100	186 *	40 - 156	3	30
2,4-Dinitrotoluene	126	100	126 *	126	100	126 *	69 - 122	<1	30
2,6-Dinitrotoluene	136	100	136 *	132	100	132 *	48 - 125	3	30
2-Chloronaphthalene	95.5	100	96	94.5	100	94	47 - 98	2	30
2-Chlorophenol	92.3	100	92	92.1	100	92	42 - 112	<1	30
2-Methylnaphthalene	85.9	100	86	86.4	100	86	34 - 102	<1	30
2-Methylphenol	86.9	100	87	84.7	100	85	51 - 95	2	30
2-Nitroaniline	111	100	111	112	100	112	60 - 119	<1	30
2-Nitrophenol	121	100	121 *	123	100	123 *	60 - 113	2	30
3,3'-Dichlorobenzidine	82.0	100	82	86.4	100	86	44 - 114	5	30
3- and 4-Methylphenol Coelution	165	200	83	160	200	80	49 - 89	4	30
3-Nitroaniline	91.1	100	91	93.3	100	93	49 - 110	2	30
4,6-Dinitro-2-methylphenol	172	100	172 *	172	100	172 *	65 - 141	<1	30
4-Bromophenyl Phenyl Ether	95.9	100	96	96.0	100	96	63 - 124	<1	30
4-Chloro-3-methylphenol	99.7	100	100	101	100	101	42 - 124	<1	30
4-Chloroaniline	79.8	100	80	81.6	100	82	40 - 111	2	30
4-Chlorophenyl Phenyl Ether	102	100	102	100	100	100	59 - 112	2	30
4-Nitroaniline	110	100	110	111	100	111	61 - 122	<1	30
4-Nitrophenol	63.6	100	64	62.6	100	63	10 - 126	2	30
Acenaphthene	98.3	100	98	98.1	100	98	54 - 125	<1	30
Acenaphthylene	102	100	102	102	100	102	69 - 111	<1	30
Acetophenone	99.8	100	100	99.6	100	100	42 - 126	<1	30
Anthracene	101	100	101	102	100	102	55 - 116	<1	30
Atrazine	150	100	150	151	100	151	10 - 160	<1	30
Benz(a)anthracene	100	100	100	99.9	100	100	66 - 110	<1	30
Benzaldehyde	348	100	348 *	352	100	352 *	46 - 200	1	30
Benzo(a)pyrene	102	100	102	103	100	103	44 - 114	<1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3510C

Units: µg/L  
 Basis: NA

Extraction Lot: 206383

Analyte Name	Lab Control Sample RQ1403732-02			Duplicate Lab Control Sample RQ1403732-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Benzo(b)fluoranthene	101	100	101	101	100	101	64 - 122	<1	30
Benzo(g,h,i)perylene	105	100	105	107	100	107	60 - 127	2	30
Benzo(k)fluoranthene	97.1	100	97	96.2	100	96	49 - 133	1	30
Biphenyl	98.5	100	98	98.0	100	98	30 - 126	<1	30
2,2'-Oxybis(1-chloropropane)	107	100	107	105	100	105	44 - 112	2	30
Bis(2-chloroethoxy)methane	98.3	100	98	96.7	100	97	53 - 142	1	30
Bis(2-chloroethyl) Ether	92.6	100	93	91.6	100	92	56 - 106	1	30
Bis(2-ethylhexyl) Phthalate	101	100	101	99.9	100	100	62 - 124	<1	30
Butyl Benzyl Phthalate	94.5	100	94	94.7	100	95	41 - 148	1	30
Caprolactam	33.3	100	33	33.6	100	34	10 - 41	3	30
Carbazole	106	100	106	107	100	107	66 - 117	<1	30
Chrysene	101	100	101	102	100	102	57 - 118	<1	30
Di-n-butyl Phthalate	103	100	103	102	100	102	57 - 139	<1	30
Di-n-octyl Phthalate	97.9	100	98	98.7	100	99	77 - 120	1	30
Dibenz(a,h)anthracene	104	100	104	106	100	106	58 - 132	2	30
Dibenzofuran	96.1	100	96	96.6	100	97	58 - 105	1	30
Diethyl Phthalate	96.5	100	96	93.8	100	94	65 - 122	2	30
Dimethyl Phthalate	97.0	100	97	96.1	100	96	69 - 115	1	30
Fluoranthene	108	100	108	108	100	108	62 - 123	<1	30
Fluorene	98.6	100	99	96.5	100	96	60 - 112	3	30
Hexachlorobenzene	101	100	101	104	100	104	76 - 119	3	30
Hexachlorobutadiene	73.5	100	73	71.7	100	72	16 - 95	1	30
Hexachlorocyclopentadiene	98.8	100	99	97.0	100	97	10 - 99	2	30
Hexachloroethane	66.4	100	66	66.7	100	67	15 - 92	2	30
Indeno(1,2,3-cd)pyrene	99.5	100	100	103	100	103	64 - 126	3	30
Isophorone	99.1	100	99	99.2	100	99	61 - 128	<1	30
N-Nitrosodi-n-propylamine	95.0	100	95	94.5	100	95	51 - 119	<1	30
N-Nitrosodiphenylamine	99.7	100	100	102	100	102	45 - 123	2	30
Naphthalene	82.9	100	83	82.4	100	82	36 - 95	1	30
Nitrobenzene	104	100	104	104	100	104	51 - 113	<1	30
Pentachlorophenol (PCP)	114	100	114	114	100	114	56 - 146	<1	30
Phenanthrene	103	100	103	105	100	105	58 - 118	2	30
Phenol	46.6	100	47	44.6	100	45	10 - 113	4	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Semivolatile Organic Compounds by GC/MS

Analytical Method: 8270D  
 Prep Method: EPA 3510C

Units: µg/L  
 Basis: NA

Extraction Lot: 206383

Analyte Name	Lab Control Sample RQ1403732-02			Duplicate Lab Control Sample RQ1403732-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Pyrene	112	100	112	111	100	111	67 - 118	<1	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A  
 Prep Method: EPA 3510C

Units: µg/L  
 Basis: NA

Extraction Lot: 206382

Analyte Name	Lab Control Sample RQ1403731-02			Duplicate Lab Control Sample RQ1403731-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Aroclor 1016	4.14	5.00	83	4.20	5.00	84	40 - 140	1	30
Aroclor 1260	4.60	5.00	92	4.68	5.00	94	45 - 134	2	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Analyzed: 4/21/14

Lab Control Sample Summary  
 Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A  
 Prep Method: EPA 3541

Units: µg/Kg  
 Basis: Dry

Extraction Lot: 206542

Analyte Name	Lab Control Sample RQ1403871-02			Duplicate Lab Control Sample RQ1403871-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Aroclor 1260	128	167	77	158	167	95	58 - 129	20	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402720  
 Date Analyzed: 4/21/14

Lab Control Sample Summary  
 Diesel and Residual Range Organics by GC

Analytical Method: 8015C  
 Prep Method: EPA 3510C

Units: µg/L  
 Basis: NA

Extraction Lot: 206509

Analyte Name	Lab Control Sample RQ1403802-02			Duplicate Lab Control Sample RQ1403802-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Diesel Range Organics (DRO) as C10-C28	362	503	72	402	503	80	11 - 126	11	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402720  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 Diesel and Residual Range Organics by GC

Analytical Method: 8015C  
 Prep Method: EPA 3541

Units: µg/Kg  
 Basis: Dry

Extraction Lot: 206625

Analyte Name	Lab Control Sample RQ1403890-02			Duplicate Lab Control Sample RQ1403890-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Diesel Range Organics (DRO) as C10-C28	179000	251000	71	189000	251000	75	46 - 124	5	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Project Name <b>Varian</b>		Project Number <b>150151</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																																																																																																																																			
Project Manager <b>Ray Cardorette</b>		Report CC		PRESERVATIVE																																																																																																																																			
Company/Address <b>CB&amp;I</b>				NUMBER OF CONTAINERS	<table border="1" style="width:100%; border-collapse: collapse; text-align: center;"> <tr> <td>GC/MS VOAs • 820 • 821 • CLP</td> <td>GC/MS SVOAs • 8270 • 825</td> <td>GC VOAs • 8021 • 801/802</td> <td>PESTICIDES • 8091 • 808</td> <td>PCBs • 8082 • 808</td> <td>METALS, TOTAL (List in comments below)</td> <td>METALS, DISSOLVED (List in comments below)</td> <td>TCLP Metals</td> <td>Asbestos</td> <td>SO<sub>4</sub> DRO, BRO</td> <td>Flashpoint</td> <td>PH</td> <td></td> <td></td> </tr> <tr> <td>1</td> <td>0</td> <td></td> <td></td> <td></td> <td>0</td> <td>2</td> <td></td> <td>0</td> <td>0</td> <td>%</td> <td>0</td> <td>0</td> <td></td> </tr> </table>												GC/MS VOAs • 820 • 821 • CLP	GC/MS SVOAs • 8270 • 825	GC VOAs • 8021 • 801/802	PESTICIDES • 8091 • 808	PCBs • 8082 • 808	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	TCLP Metals	Asbestos	SO <sub>4</sub> DRO, BRO	Flashpoint	PH			1	0				0	2		0	0	%	0	0																																																																																												
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Phone # <b>617-589-6102</b>		Email <b>raymond.cardorette@cbi.com</b>																																																																																																																																					
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <b>Dale Daily</b>																																																																																																																																					
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME		MATRIX	19	20	21	22	23	24	25	26	27	28	29	30																																																																																																																							
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<b>Varian-WC03</b>		<b>4/11/14</b>	<b>14:15</b>	<b>S</b>	X	X	X	X	X	X	X	X	X	X	X	X																																																																																																																							
SPECIAL INSTRUCTIONS/COMMENTS Metals <b>Waste Characterization Suite. Contact Ray C. for further information.</b>																																																																																																																																							
TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day ___ 2 day ___ 3 day ___ 4 day ___ <b>5 day</b> ___					REPORT REQUIREMENTS I. Results Only ___ <b>X</b> II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries ___ IV. Data Validation Report with Raw Data ___ Edata ___ Yes ___ No					INVOICE INFORMATION PO # BILL TO: <b>CB&amp;I</b>																																																																																																																													
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**R1402720 7 Y**  
 CB&I Environmental & Infrastructure  
 Verten Beverly  




# Cooler Receipt and Preservation Check Form

Project/Client CB+I Folder Number R14-2720

Cooler received on 4-16-14 by: RE COURIER: ALS UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler? YES NO
2. Were custody papers properly filled out (ink, signed, etc.)? YES NO
3. Did all bottles arrive in good condition (unbroken)? YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES NO N/A
5. Were Ice or Ice packs present? YES NO
6. Where did the bottles originate? ALS/ROC, CLIENT
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
8. Temperature of cooler(s) upon receipt: 6.0° 4.9°

Is the temperature within 0° - 6° C?: YN YN 4-16-14 @ 09:38 Y N  
If No, Explain Below Date/Time Temperatures Taken:

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location R-002 by RE on 4-16-14 at 09:45  
5035 samples placed in storage location by on at

PC Secondary Review: JMS 4/16/14

Cooler Breakdown: Date: 4/16/14 Time: 1629 by: dlh

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	YES NO		Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK No = Samples were preserved at lab as listed PM OK to Adjust:
		YES	NO							
≥12	NaOH									
≤2	HNO <sub>3</sub>	<u>✓</u>		<u>B08261353</u>	<u>4/15</u>					
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-							*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet
	Zn Aceta	-	-							
	HCl	*	*	<u>4112120</u>	<u>3/5</u>					

Bottle lot numbers: 172672-2W, 102113-1BME, 021014-1BET, 3-294-007, 4-007-003, 031714-1BMS, 172313-1BMM

Other Comments: \* Bldg 3 Line 8: 1 of 3 vials has significant headspace.  
RE 4-16-14

PC Secondary Review: JMS 4/23/14 \*significant air bubbles: VOA > 5-6 mm ; WC > 1 in. diameter

### Data Usability Worksheet

<b>Project Name :</b>	Varian Medical Systems, Inc	<b>Job Number :</b>	150151.17
<b>Prepared By:</b>	Dale Dailey	<b>Date :</b>	6/5/2014
<b>Matrix:</b>	Groundwater, Soil		
<b>Analyte Group :</b>	TCLP Metals Mercury	<b>Analytical Method :</b>	EPA 6010C EPA 7470A
<b>Completed MADEP CAM Certification Form included:</b>	No	<b>Laboratory ID No. :</b>	R1402721
<b>Chain of Custody included in Data Package ?</b>	Yes	<b>Is it Complete ?</b>	Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/11/2014	6010C		180 Days	4/21/14
4/11/2014	7470A		28 Days	4/22/14

**Sample temperature within QC limits:** Yes, 6.0° C

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? Yes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :** None  
**Trip Blank ID :** None

**Method Blank:** 6010 C, 7470A 4/21, 4/22, 4/23/14

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

All LCS and LCSD recoveries were within QC Limits.

**Reviewed By:** Pernilla Haley, 6/9/14





April 25, 2014

Service Request No: R1402721

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150151**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on April 16, 2014. For your reference, these analyses have been assigned our service request number **R1402721**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

  
Janice Jaeger  
Client Services Manager

Page 1 of 14

CC: Pernilla Haley

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402721

<u>Lab ID</u>	<u>Client ID</u>
R1402721-001	VARIAN-WC01
R1402721-002	VARIAN-WC02
R1402721-003	VARIAN-WC03

All samples were received in good condition unless otherwise noted on the cooler receipt and preservation check form located at the end of this report.

All samples were preserved in accordance with approved analytical methods.

All samples have been analyzed by the approved methods cited on the analytical results pages.

All holding times and associated QC were within limits.

No analytical or QC problems were encountered.

All sampling activities performed by ALS personnel have been in accordance with "ALS Field Procedures and Measurements Manual" or by client specifications.

00002

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports; indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402721  
 Date Collected: 4/11/14 1330  
 Date Received: 4/16/14  
 Pre-Prep Date: 4/18/14

Sample Name: VARIAN-WC01  
 Lab Code: R1402721-001

Basis: NA

Toxicity Characteristics Leachate Procedure (TCLP)  
 Inorganic Parameters

Pre-Prep Method: EPA 1311

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Arsenic	6010C	0.50 U	mg/L	0.50	1	4/21/14	4/22/14 15:27	
Barium	6010C	1.0 U	mg/L	1.0	1	4/21/14	4/22/14 15:27	
Cadmium	6010C	0.10 U	mg/L	0.10	1	4/21/14	4/22/14 15:27	
Chromium	6010C	0.10 U	mg/L	0.10	1	4/21/14	4/22/14 15:27	
Lead	6010C	0.10 U	mg/L	0.10	1	4/21/14	4/22/14 15:27	
Mercury	7470A	0.00020 U	mg/L	0.00020	1	4/22/14	4/22/14 16:14	
Selenium	6010C	0.50 U	mg/L	0.50	1	4/21/14	4/23/14 08:52	
Silver	6010C	0.10 U	mg/L	0.10	1	4/21/14	4/22/14 15:27	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402721  
 Date Collected: 4/11/14 1400  
 Date Received: 4/16/14  
 Pre-Prep Date: 4/17/14

Sample Name: VARIAN-WC02  
 Lab Code: R1402721-002

Basis: As Received

Toxicity Characteristics Leachate Procedure (TCLP)  
 Inorganic Parameters

Pre-Prep Method: EPA 1311

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Arsenic	6010C	0.50	U	mg/L	0.50	1	4/21/14	4/22/14 16:19	
Barium	6010C	1.0	U	mg/L	1.0	1	4/21/14	4/22/14 16:19	
Cadmium	6010C	0.84		mg/L	0.10	1	4/21/14	4/22/14 16:19	
Chromium	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 16:19	
Lead	6010C	0.42		mg/L	0.10	1	4/21/14	4/22/14 16:19	
Mercury	7470A	0.00030	U	mg/L	0.00030	1	4/22/14	4/22/14 16:16	
Selenium	6010C	0.50	U	mg/L	0.50	1	4/21/14	4/23/14 09:44	
Silver	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 16:19	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402721  
 Date Collected: 4/11/14 1415  
 Date Received: 4/16/14  
 Pre-Prep Date: 4/17/14

Sample Name: VARIAN-WC03  
 Lab Code: R1402721-003

Basis: As Received

Toxicity Characteristics Leachate Procedure (TCLP)  
 Inorganic Parameters

Pre-Prep Method: EPA 1311

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Arsenic	6010C	0.50 U	mg/L	0.50	1	4/21/14	4/22/14 16:26	
Barium	6010C	1.0 U	mg/L	1.0	1	4/21/14	4/22/14 16:26	
Cadmium	6010C	0.36	mg/L	0.10	1	4/21/14	4/22/14 16:26	
Chromium	6010C	0.10 U	mg/L	0.10	1	4/21/14	4/22/14 16:26	
Lead	6010C	21.3	mg/L	1.0	10	4/21/14	4/23/14 10:02	
Mercury	7470A	0.00030 U	mg/L	0.00030	1	4/22/14	4/22/14 16:21	
Selenium	6010C	0.50 U	mg/L	0.50	1	4/21/14	4/23/14 09:53	
Silver	6010C	0.10 U	mg/L	0.10	1	4/21/14	4/22/14 16:26	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402721  
 Date Collected: NA  
 Date Received: NA  
 Pre-Prep Date: 4/17/14

Sample Name: Method Blank  
 Lab Code: R1402721-MB1

Basis: As Received

Toxicity Characteristics Leachate Procedure (TCLP)  
 Inorganic Parameters

Pre-Prep Method: EPA 1311

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Arsenic	6010C	0.50 U	mg/L	0.50	1	4/21/14	4/22/14 15:12	
Barium	6010C	1.0 U	mg/L	1.0	1	4/21/14	4/22/14 15:12	
Cadmium	6010C	0.10 U	mg/L	0.10	1	4/21/14	4/22/14 15:12	
Chromium	6010C	0.10 U	mg/L	0.10	1	4/21/14	4/22/14 15:12	
Lead	6010C	0.10 U	mg/L	0.10	1	4/21/14	4/22/14 15:12	
Mercury	7470A	0.00030 U	mg/L	0.00030	1	4/22/14	4/22/14 16:11	
Selenium	6010C	0.50 U	mg/L	0.50	1	4/21/14	4/23/14 08:36	
Silver	6010C	0.10 U	mg/L	0.10	1	4/21/14	4/22/14 15:12	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402721  
 Date Collected: NA  
 Date Received: NA  
 Pre-Prep Date: 4/18/14

Sample Name: Method Blank  
 Lab Code: R1402721-MB2

Basis: NA

Toxicity Characteristics Leachate Procedure (TCLP)  
 Inorganic Parameters

Pre-Prep Method: EPA 1311

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Arsenic	6010C	0.50	U	mg/L	0.50	1	4/21/14	4/22/14 15:19	
Barium	6010C	1.0	U	mg/L	1.0	1	4/21/14	4/22/14 15:19	
Cadmium	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 15:19	
Chromium	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 15:19	
Lead	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 15:19	
Mercury	7470A	0.00020	U	mg/L	0.00020	1	4/22/14	4/22/14 16:13	
Selenium	6010C	0.50	U	mg/L	0.50	1	4/21/14	4/23/14 08:44	
Silver	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 15:19	





ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: Method Blank  
 Lab Code: R1402721-MB3

Service Request: R1402721  
 Date Collected: NA  
 Date Received: NA

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Arsenic	6010C	0.50	U	mg/L	0.50	1	4/21/14	4/22/14 14:50	
Barium	6010C	1.0	U	mg/L	1.0	1	4/21/14	4/22/14 14:50	
Cadmium	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 14:50	
Chromium	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 14:50	
Lead	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 14:50	
Mercury	7470A	0.00020	U	mg/L	0.00020	1	4/22/14	4/22/14 16:08	
Selenium	6010C	0.50	U	mg/L	0.50	1	4/21/14	4/23/14 08:13	
Silver	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 14:50	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil  
 Sample Name: Method Blank  
 Lab Code: R1402721-MB4

Service Request: R1402721  
 Date Collected: NA  
 Date Received: NA

Basis: As Received

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Arsenic	6010C	0.50	U	mg/L	0.50	1	4/21/14	4/22/14 14:50	
Barium	6010C	1.0	U	mg/L	1.0	1	4/21/14	4/22/14 14:50	
Cadmium	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 14:50	
Chromium	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 14:50	
Lead	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 14:50	
Mercury	7470A	0.00030	U	mg/L	0.00030	1	4/22/14	4/22/14 16:08	
Selenium	6010C	0.50	U	mg/L	0.50	1	4/21/14	4/23/14 08:13	
Silver	6010C	0.10	U	mg/L	0.10	1	4/21/14	4/22/14 14:50	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Soil

Service Request: R1402721  
 Date Analyzed: 4/22/14 -  
 4/23/14

Lab Control Sample Summary  
 Inorganic Parameters

Units: mg/L  
 Basis: As Received

Lab Control Sample  
 R1402721-LCS1

Analyte Name	Method	Result	Spike		% Rec Limits
			Amount	% Rec	
Arsenic	6010C	4.81	5.0	96	80 - 120
Barium	6010C	5.32	5.0	106	80 - 120
Cadmium	6010C	1.00	1.00	100	80 - 120
Chromium	6010C	5.11	5.00	102	80 - 120
Lead	6010C	5.02	5.00	100	80 - 120
Mercury	7470A	0.000901	0.00100	90	80 - 120
Selenium	6010C	0.949	1.00	95	80 - 120
Silver	6010C	5.03	5.00	101	80 - 120

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1402721  
 Date Analyzed: 4/22/14 -  
 4/23/14

Lab Control Sample Summary  
 Inorganic Parameters

Units: mg/L  
 Basis: NA

Lab Control Sample  
 R1402721-LCS2

Analyte Name	Method	Spike		% Rec	% Rec Limits
		Result	Amount		
Arsenic	6010C	4.81	5.0	96	80 - 120
Barium	6010C	5.32	5.0	106	80 - 120
Cadmium	6010C	1.00	1.00	100	80 - 120
Chromium	6010C	5.11	5.00	102	80 - 120
Lead	6010C	5.02	5.00	100	80 - 120
Mercury	7470A	0.000901	0.00100	90	80 - 120
Selenium	6010C	0.949	1.00	95	80 - 120
Silver	6010C	5.03	5.00	101	80 - 120

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.





# Cooler Receipt and Preservation Check Form

Project/Client CB+I Folder Number R4-2721

Cooler received on 4-16-14 by: RE COURIER: ALS UPS FEDEX VELOCITY CLIENT

- Were custody seals on outside of cooler? YES NO
  - Were custody papers properly filled out (ink, signed, etc.)? YES NO
  - Did all bottles arrive in good condition (unbroken)? YES NO
  - Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES NO N/A
  - Were Ice or Ice packs present? YES NO
  - Where did the bottles originate? ALS/ROC CLIENT
  - Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
  - Temperature of cooler(s) upon receipt: 0.0° 4.9°
- Is the temperature within 0° - 6° C?: Y N Y N Y N Y N Y N  
 If No, Explain Below Date/Time Temperatures Taken: 4-16-14 @ 09:39

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location R-002 by RE on 4-16-14 at 09:45  
 5035 samples placed in storage location by on at

PC Secondary Review: MS 4/16/14

Cooler Breakdown: Date: 4/16/14 Time: 1653 by: SM

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were correct containers used for the tests indicated? YES NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	YES NO		Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK No = Samples were preserved at lab as listed PM OK to Adjust:
		YES	NO							
≥12	NaOH									
≤2	HNO <sub>3</sub>									
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-							*Not to be tested before analysis - pH tested and recorded by VOAs or GenChem on a separate worksheet
	Zn Aceta	-	-							
	HCl	*	*							

Bottle lot numbers: 082613-2ABI, 172313-1BAM

Other Comments: \* Bldg 3 Line 8: 1 of 3 vials has significant headspace.  
RE 4-16-14

PC Secondary Review: MS 4/24/14 Significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150151.20  
**Prepared By:** Dale Dailey **Date :** 6/5/2014  
**Matrix:** Soil  
**Analyte Group :** Volatile Organics **Analytical Method :** SW-846 8260C  
Total Solids Modified EPA 160.3  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** 1402727  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/15/14	Modified EPA 160.3	14 days	14 Days	4/18/2014
4/15/14	VOC 8260C	14 days	30 Days	4/18, 4/22, 4/23/14

**Sample temperature within QC limits:** No, 6.5 C

### Surrogate Recovery

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

### MS/MSD

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

### Laboratory Control Samples

Are all laboratory control sample recoveries within the QC limits ? No

If no, list sample ID where range was exceeded: see notes

**Equipment Field Blank ID :** NA

**Trip Blank ID :** NA

**Method Blank:** 8260C 4/18, 4/22, 4/23/14

160.3 Modified 4/18/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

### Notes:

**All samples were initially analyzed at appropriate dilutions.**

The % recovery was outside limits in the LCS or LCSD for 1,2,2-Trichlorotrifluoroethane in batch 388901. The RPD was outside limits in the LCS or LCSD for carbondisulfide in batch 389503. The data was not impacted since the analytical results in these batches were non-detect for these analytes.

Continuing Calibration Verification for 1,1,2-Trichlorotrifluoroethane was outside QC Limits in batch 388901. Results were non-detect for this analyte, but associate data were given a UJ qualifier (sample OB45-WC).

Samples were insulated from the ice by large amount of bubble wrap.

**Reviewed By:** Pernilla Haley 6/9/14



April 25, 2014

Service Request No: R1402727

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150151-08**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on April 17, 2014. For your reference, these analyses have been assigned our service request number **R1402727**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

Janice Jaeger  
Client Services Manager

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CC: Pemilla Haley



## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Soil

**Service Request No.:** R1402727  
**Project Number:** 150151-08  
**Date Received:** 04/17/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Water samples were collected on 04/15/14 and received at ALS in good condition at a cooler temperature of 6.5 °C as noted on the cooler receipt and preservation check form. The samples were stored in a refrigerator at 1 - 6 °C or frozen upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #.

### Volatile Organics

Three soil samples were analyzed for a site list of Volatile Organics by SW-846 Method 5035/8260C.

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes except the following were > 20%:

- CCV from 04/18/14: Freon 113

As noted on the attached CCV summary forms, these CCV's are flagged with an "\*\*\*".

All Surrogate Standard recoveries were within QC limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits except the LCS/LCSD from 04/18/14 for Freon 113. All RPD's were acceptable except the 04/23-24/14 RPD for Carbon disulfide. All outlying QC has been flagged with an "\*\*\*".

All samples were analyzed within the required holding time of 14 days.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150151

Project Location: Varian Beverly

RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):  
R1402727-001-003

 Matrices: Groundwater/Surface Water    Soil/Sediment     Drinking Water    Air    Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X	Yes	No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X	Yes	No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X	Yes	No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X	Yes	No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes	No	No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X	Yes	No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X	Yes	No <sup>1</sup>
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*Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X	Yes	No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes	X	No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:

 Position: Client Services  
Manager

 Printed Name: Janice Jaeger

 Date: 04/28/14
00003

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402727

<u>Lab ID</u>	<u>Client ID</u>
R1402727-001	OB45-WC
R1402727-002	OB-45DO
R1402727-003	OB-45S

00004

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of:* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*



*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CACO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	

June 25, 2013

\* = Provisional Certification

Page 1 of 2

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**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: **01 JUL 2013**

**M-NY032      ALS ENVIRONMENTAL ROCHESTER  
                 ROCHESTER NY**

**NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014**

<u>Analytes</u>	<u>Methods</u>
CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 365.1
PHOSPHORUS, TOTAL	EPA 365.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-08  
Sample Matrix: Soil  
Sample Name: OB45-WC  
Lab Code: R1402727-001

Service Request: R1402727  
Date Collected: 4/15/14 1345  
Date Received: 4/17/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Solids, Total	160.3 Modified	93.7	Percent	1.0	1	NA	4/18/14 08:15	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Soil

Service Request: R1402727  
 Date Collected: 4/15/14 1345  
 Date Received: 4/17/14  
 Date Analyzed: 4/18/14 19:02

Sample Name: OB45-WC  
 Lab Code: R1402727-001

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 93.7

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041814\K8520.D\

Analysis Lot: 388901  
 Instrument Name: R-MS-07  
 Dilution Factor: 1.17

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	6.2 U	6.2	
79-34-5	1,1,2,2-Tetrachloroethane	6.2 U	6.2	
79-00-5	1,1,2-Trichloroethane	6.2 U	6.2	
76-13-1	1,1,2-Trichlorotrifluoroethane	6.2 U	6.2	
75-34-3	1,1-Dichloroethane (1,1-DCA)	6.2 U	6.2	
75-35-4	1,1-Dichloroethene (1,1-DCE)	6.2 U	6.2	
95-50-1	1,2-Dichlorobenzene	6.2 U	6.2	
107-06-2	1,2-Dichloroethane	6.2 U	6.2	
78-87-5	1,2-Dichloropropane	6.2 U	6.2	
78-93-3	2-Butanone (MEK)	6.2 U	6.2	
591-78-6	2-Hexanone	6.2 U	6.2	
108-10-1	4-Methyl-2-pentanone	6.2 U	6.2	
67-64-1	Acetone	6.2 U	6.2	
71-43-2	Benzene	6.2 U	6.2	
75-27-4	Bromodichloromethane	6.2 U	6.2	
75-25-2	Bromoform	6.2 U	6.2	
74-83-9	Bromomethane	6.2 U	6.2	
75-15-0	Carbon Disulfide	6.2 U	6.2	
56-23-5	Carbon Tetrachloride	6.2 U	6.2	
108-90-7	Chlorobenzene	6.2 U	6.2	
75-00-3	Chloroethane	6.2 U	6.2	
67-66-3	Chloroform	6.2 U	6.2	
74-87-3	Chloromethane	6.2 U	6.2	
124-48-1	Dibromochloromethane	6.2 U	6.2	
75-09-2	Dichloromethane	6.2 U	6.2	
100-41-4	Ethylbenzene	6.2 U	6.2	
100-42-5	Styrene	6.2 U	6.2	
127-18-4	Tetrachloroethene (PCE)	6.2 U	6.2	
108-88-3	Toluene	6.2 U	6.2	
79-01-6	Trichloroethene (TCE)	6.2 U	6.2	
75-69-4	Trichlorofluoromethane (CFC 11)	6.2 U	6.2	
75-01-4	Vinyl Chloride	6.2 U	6.2	
156-59-2	cis-1,2-Dichloroethene	6.2 U	6.2	
10061-01-5	cis-1,3-Dichloropropene	6.2 U	6.2	
179601-23-1	m,p-Xylenes	12 U	12	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Soil

Service Request: R1402727  
 Date Collected: 4/15/14 1345  
 Date Received: 4/17/14  
 Date Analyzed: 4/18/14 19:02

Sample Name: OB45-WC  
 Lab Code: R1402727-001

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 93.7

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041814\K8520.D\

Analysis Lot: 388901  
 Instrument Name: R-MS-07  
 Dilution Factor: 1.17

CAS No.	Analyte Name	Result Q	MRL	Note
95-47-6	o-Xylene	6.2 U	6.2	
156-60-5	trans-1,2-Dichloroethene	6.2 U	6.2	
10061-02-6	trans-1,3-Dichloropropene	6.2 U	6.2	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	70-130	4/18/14 19:02	
Dibromofluoromethane	91	70-130	4/18/14 19:02	
Toluene-d8	99	70-130	4/18/14 19:02	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Water

Service Request: R1402727  
 Date Collected: 4/15/14 1445  
 Date Received: 4/17/14  
 Date Analyzed: 4/23/14 16:59

Sample Name: OB-45DO  
 Lab Code: R1402727-002

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\042314\K8669.D\

Analysis Lot: 389503  
 Instrument Name: R-MS-07  
 Dilution Factor: 2.5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
76-13-1	1,1,2-Trichlorotrifluoroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.0	U	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0	U	5.0	
95-50-1	1,2-Dichlorobenzene	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
78-93-3	2-Butanone (MEK)	25	U	25	
591-78-6	2-Hexanone	25	U	25	
108-10-1	4-Methyl-2-pentanone	25	U	25	
67-64-1	Acetone	35		25	
71-43-2	Benzene	5.0	U	5.0	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
75-15-0	Carbon Disulfide	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-09-2	Dichloromethane	5.0	U	5.0	
100-41-4	Ethylbenzene	5.0	U	5.0	
100-42-5	Styrene	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	5.9		5.0	
108-88-3	Toluene	5.0	U	5.0	
79-01-6	Trichloroethene (TCE)	270		5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	5.0	U	5.0	
156-59-2	cis-1,2-Dichloroethene	370		5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
179601-23-1	m,p-Xylenes	5.0	U	5.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Water

Service Request: R1402727  
 Date Collected: 4/15/14 1445  
 Date Received: 4/17/14  
 Date Analyzed: 4/23/14 16:59

Sample Name: OB-45DO  
 Lab Code: R1402727-002

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\042314\K8669.D\

Analysis Lot: 389503  
 Instrument Name: R-MS-07  
 Dilution Factor: 2.5

CAS No.	Analyte Name	Result	Q	MRL	Note
95-47-6	o-Xylene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0	U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/23/14 16:59	
Dibromofluoromethane	92	70-130	4/23/14 16:59	
Toluene-d8	100	70-130	4/23/14 16:59	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Water

Service Request: R1402727  
 Date Collected: 4/15/14 1430  
 Date Received: 4/17/14  
 Date Analyzed: 4/22/14 16:30

Sample Name: OB-45S  
 Lab Code: R1402727-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\042214\J5002.D\

Analysis Lot: 389276  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
76-13-1	1,1,2-Trichlorotrifluoroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
95-50-1	1,2-Dichlorobenzene	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
78-93-3	2-Butanone (MEK)	10	U	10	
591-78-6	2-Hexanone	10	U	10	
108-10-1	4-Methyl-2-pentanone	10	U	10	
67-64-1	Acetone	10	U	10	
71-43-2	Benzene	2.0	U	2.0	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
75-15-0	Carbon Disulfide	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Dichloromethane	2.0	U	2.0	
100-41-4	Ethylbenzene	2.0	U	2.0	
100-42-5	Styrene	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
108-88-3	Toluene	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Water

Service Request: R1402727  
 Date Collected: 4/15/14 1430  
 Date Received: 4/17/14  
 Date Analyzed: 4/22/14 16:30

Sample Name: OB-45S  
 Lab Code: R1402727-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\042214\J5002.D\

Analysis Lot: 389276  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
95-47-6	o-Xylene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/22/14 16:30	
Dibromofluoromethane	100	70-130	4/22/14 16:30	
Toluene-d8	96	70-130	4/22/14 16:30	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151-08  
Sample Matrix: Soil  
Sample Name: Method Blank  
Lab Code: R1402727-MB

Service Request: R1402727  
Date Collected: NA  
Date Received: NA

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Solids, Total	160.3 Modified	1.0 U	Percent	1.0	1	NA	4/18/14 08:15	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Soil

Service Request: R1402727  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/18/14 15:43

Sample Name: Method Blank  
 Lab Code: RQ1403888-05

Units: µg/Kg  
 Basis: Dry

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041814\K8515.D\

Analysis Lot: 388901  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0 U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0 U	5.0	
76-13-1	1,1,2-Trichlorotrifluoroethane	5.0 U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.0 U	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0 U	5.0	
95-50-1	1,2-Dichlorobenzene	5.0 U	5.0	
107-06-2	1,2-Dichloroethane	5.0 U	5.0	
78-87-5	1,2-Dichloropropane	5.0 U	5.0	
78-93-3	2-Butanone (MEK)	5.0 U	5.0	
591-78-6	2-Hexanone	5.0 U	5.0	
108-10-1	4-Methyl-2-pentanone	5.0 U	5.0	
67-64-1	Acetone	5.0 U	5.0	
71-43-2	Benzene	5.0 U	5.0	
75-27-4	Bromodichloromethane	5.0 U	5.0	
75-25-2	Bromoform	5.0 U	5.0	
74-83-9	Bromomethane	5.0 U	5.0	
75-15-0	Carbon Disulfide	5.0 U	5.0	
56-23-5	Carbon Tetrachloride	5.0 U	5.0	
108-90-7	Chlorobenzene	5.0 U	5.0	
75-00-3	Chloroethane	5.0 U	5.0	
67-66-3	Chloroform	5.0 U	5.0	
74-87-3	Chloromethane	5.0 U	5.0	
124-48-1	Dibromochloromethane	5.0 U	5.0	
75-09-2	Dichloromethane	5.0 U	5.0	
100-41-4	Ethylbenzene	5.0 U	5.0	
100-42-5	Styrene	5.0 U	5.0	
127-18-4	Tetrachloroethene (PCE)	5.0 U	5.0	
108-88-3	Toluene	5.0 U	5.0	
79-01-6	Trichloroethene (TCE)	5.0 U	5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0 U	5.0	
75-01-4	Vinyl Chloride	5.0 U	5.0	
156-59-2	cis-1,2-Dichloroethene	5.0 U	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0 U	5.0	
179601-23-1	m,p-Xylenes	10 U	10	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Soil

Service Request: R1402727  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/18/14 15:43

Sample Name: Method Blank  
 Lab Code: RQ1403888-05

Units: µg/Kg  
 Basis: Dry

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\041814\K8515.D\

Analysis Lot: 388901  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
95-47-6	o-Xylene	5.0 U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0 U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0 U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/18/14 15:43	
Dibromofluoromethane	93	70-130	4/18/14 15:43	
Toluene-d8	99	70-130	4/18/14 15:43	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Water

Service Request: R1402727  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/22/14 14:22

Sample Name: Method Blank  
 Lab Code: RQ1403997-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa12\Data\042214\J4998.D\

Analysis Lot: 389276  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
76-13-1	1,1,2-Trichlorotrifluoroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
95-50-1	1,2-Dichlorobenzene	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
78-93-3	2-Butanone (MEK)	10	U	10	
591-78-6	2-Hexanone	10	U	10	
108-10-1	4-Methyl-2-pentanone	10	U	10	
67-64-1	Acetone	10	U	10	
71-43-2	Benzene	2.0	U	2.0	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
75-15-0	Carbon Disulfide	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Dichloromethane	2.0	U	2.0	
100-41-4	Ethylbenzene	2.0	U	2.0	
100-42-5	Styrene	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
108-88-3	Toluene	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Water

Service Request: R1402727  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/22/14 14:22

Sample Name: Method Blank  
 Lab Code: RQ1403997-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\042214\J4998.D\

Analysis Lot: 389276  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
95-47-6	o-Xylene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	4/22/14 14:22	
Dibromofluoromethane	100	70-130	4/22/14 14:22	
Toluene-d8	98	70-130	4/22/14 14:22	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Water

Service Request: R1402727  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/23/14 15:42

Sample Name: Method Blank  
 Lab Code: RQ1404080-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\MSVOA7\DATA\042314\K8667.D\

Analysis Lot: 389503  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
76-13-1	1,1,2-Trichlorotrifluoroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
95-50-1	1,2-Dichlorobenzene	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
78-93-3	2-Butanone (MEK)	10 U	10	
591-78-6	2-Hexanone	10 U	10	
108-10-1	4-Methyl-2-pentanone	10 U	10	
67-64-1	Acetone	10 U	10	
71-43-2	Benzene	2.0 U	2.0	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
75-15-0	Carbon Disulfide	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Dichloromethane	2.0 U	2.0	
100-41-4	Ethylbenzene	2.0 U	2.0	
100-42-5	Styrene	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
108-88-3	Toluene	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0 U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
179601-23-1	m,p-Xylenes	2.0 U	2.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Water

Service Request: R1402727  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/23/14 15:42

Sample Name: Method Blank  
 Lab Code: RQ1404080-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\042314\K8667.D\

Analysis Lot: 389503  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
95-47-6	o-Xylene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	70-130	4/23/14 15:42	
Dibromofluoromethane	95	70-130	4/23/14 15:42	
Toluene-d8	99	70-130	4/23/14 15:42	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Soil

Service Request: R1402727  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/Kg  
 Basis: Dry

Analysis Lot: 388901

Analyte Name	Lab Control Sample RQ1403888-03			Duplicate Lab Control Sample RQ1403888-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	18.2	20.0	91	17.7	20.0	88	70 - 130	3	20
1,1,2,2-Tetrachloroethane	19.7	20.0	99	19.2	20.0	96	70 - 130	3	20
1,1,2-Trichloroethane	19.0	20.0	95	18.8	20.0	94	70 - 130	1	20
1,1,2-Trichlorotrifluoroethane	30.3	20.0	151 *	28.0	20.0	140 *	70 - 130	8	20
1,1-Dichloroethane (1,1-DCA)	18.7	20.0	93	18.8	20.0	94	70 - 130	1	20
1,1-Dichloroethene (1,1-DCE)	23.6	20.0	118	22.9	20.0	114	70 - 130	3	20
1,2-Dichlorobenzene	21.2	20.0	106	20.6	20.0	103	70 - 130	3	20
1,2-Dichloroethane	16.7	20.0	84	16.8	20.0	84	70 - 130	<1	20
1,2-Dichloropropane	20.4	20.0	102	20.2	20.0	101	70 - 130	<1	20
2-Butanone (MEK)	17.0	20.0	85	17.3	20.0	86	40 - 160	1	20
2-Hexanone	17.1	20.0	86	17.4	20.0	87	40 - 160	1	20
4-Methyl-2-pentanone	17.3	20.0	86	17.8	20.0	89	40 - 160	3	20
Acetone	19.2	20.0	96	18.3	20.0	91	40 - 160	5	20
Benzene	20.6	20.0	103	20.2	20.0	101	70 - 130	2	20
Bromodichloromethane	18.7	20.0	93	18.6	20.0	93	70 - 130	<1	20
Bromoform	17.2	20.0	86	18.8	20.0	94	70 - 130	9	20
Bromomethane	20.0	20.0	100	18.5	20.0	93	40 - 160	7	20
Carbon Disulfide	19.4	20.0	97	18.3	20.0	91	70 - 130	6	20
Carbon Tetrachloride	18.9	20.0	94	18.5	20.0	92	70 - 130	2	20
Chlorobenzene	20.8	20.0	104	20.1	20.0	100	70 - 130	4	20
Chloroethane	21.2	20.0	106	20.7	20.0	103	70 - 130	3	20
Chloroform	18.0	20.0	90	17.7	20.0	88	70 - 130	2	20
Chloromethane	21.4	20.0	107	20.7	20.0	103	40 - 160	4	20
Dibromochloromethane	18.9	20.0	94	18.7	20.0	94	70 - 130	<1	20
Dichloromethane	20.9	20.0	104	20.7	20.0	104	70 - 130	<1	20
Ethylbenzene	20.5	20.0	102	20.1	20.0	100	70 - 130	2	20
Styrene	21.0	20.0	105	20.6	20.0	103	70 - 130	2	20
Tetrachloroethene (PCE)	22.7	20.0	113	21.8	20.0	109	70 - 130	4	20
Toluene	20.3	20.0	101	19.7	20.0	99	70 - 130	2	20
Trichloroethene (TCE)	20.1	20.0	100	19.9	20.0	100	70 - 130	<1	20
Trichlorofluoromethane (CFC 11)	18.2	20.0	91	18.0	20.0	90	70 - 130	1	20
Vinyl Chloride	21.4	20.0	107	20.9	20.0	104	70 - 130	3	20
cis-1,2-Dichloroethene	20.9	20.0	105	20.3	20.0	102	70 - 130	3	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Soil

Service Request: R1402727  
 Date Analyzed: 4/18/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/Kg  
 Basis: Dry

Analysis Lot: 388901

Analyte Name	Lab Control Sample RQ1403888-03			Duplicate Lab Control Sample RQ1403888-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
cis-1,3-Dichloropropene	18.9	20.0	95	18.3	20.0	91	70 - 130	4	20
m,p-Xylenes	43.0	40.0	107	41.9	40.0	105	70 - 130	2	20
o-Xylene	20.9	20.0	104	21.3	20.0	106	70 - 130	2	20
trans-1,2-Dichloroethene	21.2	20.0	106	20.6	20.0	103	70 - 130	3	20
trans-1,3-Dichloropropene	17.8	20.0	89	17.2	20.0	86	70 - 130	3	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Water

Service Request: R1402727  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389276

Analyte Name	Lab Control Sample RQ1403997-03			Duplicate Lab Control Sample RQ1403997-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	21.3	20.0	107	20.3	20.0	102	70 - 130	5	20
1,1,2,2-Tetrachloroethane	20.3	20.0	102	19.4	20.0	97	70 - 130	4	20
1,1,2-Trichloroethane	20.7	20.0	103	20.3	20.0	101	70 - 130	2	20
1,1,2-Trichlorotrifluoroethane	21.2	20.0	106	20.5	20.0	103	70 - 130	3	20
1,1-Dichloroethane (1,1-DCA)	19.9	20.0	100	19.3	20.0	97	70 - 130	3	20
1,1-Dichloroethene (1,1-DCE)	23.2	20.0	116	22.5	20.0	112	70 - 130	3	20
1,2-Dichlorobenzene	22.6	20.0	113	20.6	20.0	103	70 - 130	9	20
1,2-Dichloroethane	21.8	20.0	109	21.0	20.0	105	70 - 130	3	20
1,2-Dichloropropane	20.2	20.0	101	19.3	20.0	96	70 - 130	4	20
2-Butanone (MEK)	20.2	20.0	101	21.2	20.0	106	40 - 160	5	20
2-Hexanone	20.2	20.0	101	22.6	20.0	113	40 - 160	11	20
4-Methyl-2-pentanone	20.2	20.0	101	19.9	20.0	100	40 - 160	1	20
Acetone	21.1	20.0	106	21.8	20.0	109	40 - 160	3	20
Benzene	20.8	20.0	104	19.8	20.0	99	70 - 130	5	20
Bromodichloromethane	22.2	20.0	111	21.7	20.0	108	70 - 130	2	20
Bromoform	22.1	20.0	111	20.9	20.0	104	70 - 130	6	20
Bromomethane	23.9	20.0	119	22.0	20.0	110	40 - 160	8	20
Carbon Disulfide	21.2	20.0	106	20.6	20.0	103	70 - 130	3	20
Carbon Tetrachloride	22.0	20.0	110	20.5	20.0	102	70 - 130	7	20
Chlorobenzene	21.2	20.0	106	20.5	20.0	103	70 - 130	3	20
Chloroethane	22.3	20.0	112	21.6	20.0	108	70 - 130	3	20
Chloroform	20.3	20.0	102	19.6	20.0	98	70 - 130	3	20
Chloromethane	22.5	20.0	113	21.4	20.0	107	40 - 160	5	20
Dibromochloromethane	22.3	20.0	112	22.2	20.0	111	70 - 130	<1	20
Dichloromethane	19.6	20.0	98	19.3	20.0	96	70 - 130	2	20
Ethylbenzene	21.7	20.0	109	20.3	20.0	101	70 - 130	7	20
Styrene	21.9	20.0	109	21.0	20.0	105	70 - 130	4	20
Tetrachloroethene (PCE)	22.4	20.0	112	20.8	20.0	104	70 - 130	8	20
Toluene	21.0	20.0	105	20.3	20.0	101	70 - 130	4	20
Trichloroethene (TCE)	21.9	20.0	109	21.0	20.0	105	70 - 130	4	20
Trichlorofluoromethane (CFC 11)	21.7	20.0	108	20.4	20.0	102	70 - 130	6	20
Vinyl Chloride	23.3	20.0	116	22.3	20.0	112	70 - 130	4	20
cis-1,2-Dichloroethene	19.9	20.0	99	19.2	20.0	96	70 - 130	3	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Water

Service Request: R1402727  
 Date Analyzed: 4/22/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389276

Analyte Name	Lab Control Sample RQ1403997-03			Duplicate Lab Control Sample RQ1403997-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
cis-1,3-Dichloropropene	21.0	20.0	105	20.0	20.0	100	70 - 130	5	20
m,p-Xylenes	45.2	40.0	113	43.1	40.0	108	70 - 130	5	20
o-Xylene	21.6	20.0	108	20.3	20.0	101	70 - 130	6	20
trans-1,2-Dichloroethene	21.4	20.0	107	20.1	20.0	100	70 - 130	6	20
trans-1,3-Dichloropropene	22.2	20.0	111	21.6	20.0	108	70 - 130	2	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Water

Service Request: R1402727  
 Date Analyzed: 4/23/14 -  
 4/24/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389503

Analyte Name	Lab Control Sample RQ1404080-03			Duplicate Lab Control Sample RQ1404080-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	17.9	20.0	89	16.5	20.0	83	70 - 130	8	20
1,1,2,2-Tetrachloroethane	20.9	20.0	105	18.2	20.0	91	70 - 130	14	20
1,1,2-Trichloroethane	20.6	20.0	103	19.7	20.0	98	70 - 130	5	20
1,1,2-Trichlorotrifluoroethane	21.3	20.0	106	19.1	20.0	96	70 - 130	11	20
1,1-Dichloroethane (1,1-DCA)	19.2	20.0	96	17.7	20.0	89	70 - 130	8	20
1,1-Dichloroethene (1,1-DCE)	22.7	20.0	114	19.7	20.0	99	70 - 130	14	20
1,2-Dichlorobenzene	19.8	20.0	99	19.2	20.0	96	70 - 130	3	20
1,2-Dichloroethane	18.2	20.0	91	18.2	20.0	91	70 - 130	<1	20
1,2-Dichloropropane	21.3	20.0	107	19.5	20.0	97	70 - 130	9	20
2-Butanone (MEK)	19.0	20.0	95	16.5	20.0	83	40 - 160	14	20
2-Hexanone	18.5	20.0	92	17.9	20.0	90	40 - 160	3	20
4-Methyl-2-pentanone	19.2	20.0	96	18.8	20.0	94	40 - 160	2	20
Acetone	17.1	20.0	86	15.0	20.0	75	40 - 160	13	20
Benzene	20.0	20.0	100	18.0	20.0	90	70 - 130	10	20
Bromodichloromethane	19.5	20.0	97	18.4	20.0	92	70 - 130	6	20
Bromoform	19.7	20.0	99	18.7	20.0	94	70 - 130	5	20
Bromomethane	18.0	20.0	90	15.4	20.0	77	40 - 160	16	20
Carbon Disulfide	21.0	20.0	105	16.1	20.0	80	70 - 130	27 *	20
Carbon Tetrachloride	18.8	20.0	94	16.3	20.0	82	70 - 130	14	20
Chlorobenzene	20.3	20.0	101	18.8	20.0	94	70 - 130	8	20
Chloroethane	20.0	20.0	100	17.7	20.0	89	70 - 130	12	20
Chloroform	18.6	20.0	93	17.4	20.0	87	70 - 130	7	20
Chloromethane	19.8	20.0	99	17.5	20.0	88	40 - 160	12	20
Dibromochloromethane	20.0	20.0	100	18.8	20.0	94	70 - 130	6	20
Dichloromethane	20.0	20.0	100	18.7	20.0	93	70 - 130	7	20
Ethylbenzene	20.0	20.0	100	18.2	20.0	91	70 - 130	10	20
Styrene	20.7	20.0	103	19.4	20.0	97	70 - 130	7	20
Tetrachloroethene (PCE)	20.8	20.0	104	18.3	20.0	91	70 - 130	13	20
Toluene	20.6	20.0	103	18.6	20.0	93	70 - 130	10	20
Trichloroethene (TCE)	19.9	20.0	100	19.8	20.0	99	70 - 130	<1	20
Trichlorofluoromethane (CFC 11)	18.2	20.0	91	16.7	20.0	83	70 - 130	9	20
Vinyl Chloride	20.0	20.0	100	17.1	20.0	85	70 - 130	16	20
cis-1,2-Dichloroethene	20.3	20.0	102	18.3	20.0	92	70 - 130	10	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151-08  
 Sample Matrix: Water

Service Request: R1402727  
 Date Analyzed: 4/23/14 -  
 4/24/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389503

Analyte Name	Lab Control Sample RQ1404080-03			Duplicate Lab Control Sample RQ1404080-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
cis-1,3-Dichloropropene	19.6	20.0	98	17.1	20.0	85	70 - 130	13	20
m,p-Xylenes	41.3	40.0	103	37.9	40.0	95	70 - 130	8	20
o-Xylene	20.5	20.0	102	19.4	20.0	97	70 - 130	6	20
trans-1,2-Dichloroethene	20.7	20.0	104	18.5	20.0	92	70 - 130	12	20
trans-1,3-Dichloropropene	18.9	20.0	94	17.2	20.0	86	70 - 130	10	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151-08

Service Request: R1402727  
 Date Analyzed: 4/18/14

Continuing Calibration Verification Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Calibration Date: 2/3/14  
 Calibration ID: RC1400008  
 Analysis Lot: 388901  
 Units: ppb

File ID: I:\ACQUDATA\MSVOA7\DATA\041814\K8511.D\

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
1,1,1-Trichloroethane (TCA)	50.0	45.8	0.8478	0.7765	-8.4	NA	± 20 %	Average RF
1,1,2,2-Tetrachloroethane	50.0	48.2	1.158	1.117	-3.5	NA	± 20 %	Average RF
1,1,2-Trichloroethane	50.0	47.6	0.3209	0.3054	-4.8	NA	± 20 %	Average RF
1,1,2-Trichlorotrifluoroethane	50.0	69.4	0.3435	0.4769	38.8 *	NA	± 20 %	Average RF
1,1-Dichloroethane (1,1-DCA)	50.0	45.4	1.327	1.205	-9.2	NA	± 20 %	Average RF
1,1-Dichloroethene (1,1-DCE)	50.0	48.2	0.3954	0.3809	-3.7	NA	± 20 %	Average RF
1,2-Dichlorobenzene	50.0	50.4	1.496	1.507	0.8	NA	± 20 %	Average RF
1,2-Dichloroethane	50.0	40.7	0.5986	0.4876	-18.5	NA	± 20 %	Average RF
1,2-Dichloropropane	50.0	47.1	0.4648	0.4377	-5.8	NA	± 20 %	Average RF
2-Butanone (MEK)	50.0	45.9	0.6232	0.5725	-8.1	NA	± 60 %	Average RF
2-Hexanone	50.0	44.9	0.5619	0.5049	-10.1	NA	± 60 %	Average RF
4-Methyl-2-pentanone	50.0	44.5	0.7654	0.6818	-10.9	NA	± 60 %	Average RF
Acetone	50.0	54.6	NA	NA	NA	9.1	± 60 %	Quadratic
Benzene	50.0	48.2	1.403	1.351	-3.7	NA	± 20 %	Average RF
Bromodichloromethane	50.0	45.0	0.5219	0.4693	-10.1	NA	± 20 %	Average RF
Bromoform	50.0	49.4	0.2684	0.2651	-1.2	NA	± 20 %	Average RF
Bromomethane	50.0	45.7	0.4202	0.3840	-8.6	NA	± 60 %	Average RF
Carbon Disulfide	50.0	51.8	1.803	1.867	3.5	NA	± 20 %	Average RF
Carbon Tetrachloride	50.0	46.6	0.3748	0.3495	-6.8	NA	± 20 %	Average RF
Chlorobenzene	50.0	51.0	0.9281	0.9462	2.0	NA	± 20 %	Average RF
Chloroethane	50.0	49.0	0.5156	0.5055	-2.0	NA	± 20 %	Average RF
Chloroform	50.0	44.7	1.149	1.027	-10.7	NA	± 20 %	Average RF
Chloromethane	50.0	49.8	0.9612	0.9575	-0.4	NA	± 60 %	Average RF
Dibromochloromethane	50.0	49.0	0.4107	0.4023	-2.0	NA	± 20 %	Average RF
Dichloromethane	50.0	47.5	0.6446	0.6124	-5.0	NA	± 20 %	Average RF
Ethylbenzene	50.0	49.0	1.659	1.626	-2.0	NA	± 20 %	Average RF
Styrene	50.0	50.5	1.029	1.039	1.0	NA	± 20 %	Average RF
Tetrachloroethene (PCE)	50.0	52.6	0.3238	0.3408	5.2	NA	± 20 %	Average RF
Toluene	50.0	48.3	1.444	1.395	-3.4	NA	± 20 %	Average RF
Trichloroethene (TCE)	50.0	45.6	0.3331	0.3036	-8.9	NA	± 20 %	Average RF
Trichlorofluoromethane (CFC 11)	50.0	47.2	0.7625	0.7204	-5.5	NA	± 20 %	Average RF
Vinyl Chloride	50.0	50.1	0.7866	0.7878	0.2	NA	± 20 %	Average RF
cis-1,2-Dichloroethene	50.0	48.8	0.6288	0.6135	-2.4	NA	± 20 %	Average RF
cis-1,3-Dichloropropene	50.0	46.9	0.6876	0.6453	-6.1	NA	± 20 %	Average RF
m,p-Xylenes	100	102	0.5795	0.5894	1.7	NA	± 20 %	Average RF
o-Xylene	50.0	50.8	0.5803	0.5898	1.6	NA	± 20 %	Average RF
trans-1,2-Dichloroethene	50.0	48.0	0.5321	0.5102	-4.1	NA	± 20 %	Average RF
trans-1,3-Dichloropropene	50.0	44.6	0.6807	0.6067	-10.9	NA	± 20 %	Average RF
4-Bromofluorobenzene	50.0	46.3	0.5180	0.4794	-7.5	NA	± 20 %	Average RF
Dibromofluoromethane	50.0	46.6	0.3518	0.3281	-6.7	NA	± 20 %	Average RF
Toluene-d8	50.0	49.9	1.245	1.243	-0.1	NA	± 20 %	Average RF

Client: CB&I  
 Project: Varian Beverly/150151-08

Service Request: R1402727  
 Date Analyzed: 4/22/14

Continuing Calibration Verification Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Calibration Date: 3/12/14  
 Calibration ID: RC1400023  
 Analysis Lot: 389276  
 Units: ppb

File ID: I:\ACQUDATA\msv0a12\Data\042214\J4994.D\

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
1,1,1-Trichloroethane (TCA)	50.0	49.3	0.7112	0.7018	-1.3	NA	± 20 %	Average RF
1,1,2,2-Tetrachloroethane	50.0	47.1	0.5726	0.5399	-5.7	NA	± 20 %	Average RF
1,1,2-Trichloroethane	50.0	50.8	0.2220	0.2255	1.5	NA	± 20 %	Average RF
1,1,2-Trichlorotrifluoroethane	50.0	48.1	0.3971	0.3816	-3.9	NA	± 20 %	Average RF
1,1-Dichloroethane (1,1-DCA)	50.0	45.6	0.8461	0.7721	-8.8	NA	± 20 %	Average RF
1,1-Dichloroethene (1,1-DCE)	50.0	46.3	0.3628	0.3362	-7.3	NA	± 20 %	Average RF
1,2-Dichlorobenzene	50.0	51.2	1.206	1.234	2.4	NA	± 20 %	Average RF
1,2-Dichloroethane	50.0	52.5	0.3737	0.3927	5.1	NA	± 20 %	Average RF
1,2-Dichloropropane	50.0	46.6	0.3148	0.2936	-6.7	NA	± 20 %	Average RF
2-Butanone (MEK)	50.0	56.6	0.1390	0.1572	13.1	NA	± 60 %	Average RF
2-Hexanone	50.0	56.8	0.1416	0.1610	13.7	NA	± 60 %	Average RF
4-Methyl-2-pentanone	50.0	54.4	0.1899	0.2065	8.8	NA	± 60 %	Average RF
Acetone	50.0	57.6	0.09920	0.1143	15.2	NA	± 60 %	Average RF
Benzene	50.0	47.4	1.231	1.167	-5.2	NA	± 20 %	Average RF
Bromodichloromethane	50.0	53.3	0.3677	0.3922	6.7	NA	± 20 %	Average RF
Bromoform	50.0	55.3	0.2840	0.3143	10.7	NA	± 20 %	Average RF
Bromomethane	50.0	52.1	0.2881	0.2999	4.1	NA	± 60 %	Average RF
Carbon Disulfide	50.0	51.7	1.262	1.306	3.5	NA	± 20 %	Average RF
Carbon Tetrachloride	50.0	50.1	0.1199	0.1200	0.1	NA	± 20 %	Average RF
Chlorobenzene	50.0	49.6	0.8701	0.8626	-0.9	NA	± 20 %	Average RF
Chloroethane	50.0	50.7	0.2851	0.2889	1.3	NA	± 20 %	Average RF
Chloroform	50.0	47.3	0.8292	0.7849	-5.3	NA	± 20 %	Average RF
Chloromethane	50.0	47.8	0.5146	0.4918	-4.4	NA	± 60 %	Average RF
Dibromochloromethane	50.0	55.6	0.2588	0.2880	11.3	NA	± 20 %	Average RF
Dichloromethane	50.0	43.8	0.4753	0.4160	-12.5	NA	± 20 %	Average RF
Ethylbenzene	50.0	50.3	0.4636	0.4664	0.6	NA	± 20 %	Average RF
Styrene	50.0	53.7	0.8888	0.9550	7.5	NA	± 20 %	Average RF
Tetrachloroethene (PCE)	50.0	49.9	0.2583	0.2576	-0.3	NA	± 20 %	Average RF
Toluene	50.0	49.9	1.269	1.267	-0.2	NA	± 20 %	Average RF
Trichloroethene (TCE)	50.0	50.8	0.2982	0.3026	1.5	NA	± 20 %	Average RF
Trichlorofluoromethane (CFC 11)	50.0	50.5	0.7340	0.7412	1.0	NA	± 20 %	Average RF
Vinyl Chloride	50.0	52.4	0.4781	0.5014	4.9	NA	± 20 %	Average RF
cis-1,2-Dichloroethene	50.0	46.9	0.5073	0.4758	-6.2	NA	± 20 %	Average RF
cis-1,3-Dichloropropene	50.0	53.2	0.4363	0.4639	6.3	NA	± 20 %	Average RF
m,p-Xylenes	100	104	0.5448	0.5673	4.1	NA	± 20 %	Average RF
o-Xylene	50.0	50.9	0.5559	0.5658	1.8	NA	± 20 %	Average RF
trans-1,2-Dichloroethene	50.0	46.4	0.4546	0.4218	-7.2	NA	± 20 %	Average RF
trans-1,3-Dichloropropene	50.0	56.8	0.3517	0.3997	13.7	NA	± 20 %	Average RF
4-Bromofluorobenzene	50.0	52.7	0.4538	0.4783	5.4	NA	± 20 %	Average RF
Dibromofluoromethane	50.0	51.5	0.2895	0.2979	2.9	NA	± 20 %	Average RF
Toluene-d8	50.0	49.7	1.216	1.210	-0.5	NA	± 20 %	Average RF

Client: CB&I  
Project: Varian Beverly/150151-08

Service Request: R1402727  
Date Analyzed: 4/23/14

Continuing Calibration Verification Summary  
Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Calibration Date: 2/12/14  
Calibration ID: RC1400016  
Analysis Lot: 389503  
Units: ppb

File ID: I:\ACQUDATA\MSVOA7\DATA\042314\K8663.D\

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
1,1,1-Trichloroethane (TCA)	50.0	43.4	0.7556	0.6558	-13.2	NA	± 20 %	Average RF
1,1,2,2-Tetrachloroethane	50.0	51.5	0.7954	0.8191	3.0	NA	± 20 %	Average RF
1,1,2-Trichloroethane	50.0	50.8	0.2526	0.2564	1.5	NA	± 20 %	Average RF
1,1,2-Trichlorotrifluoroethane	50.0	49.8	0.4316	0.4298	-0.4	NA	± 20 %	Average RF
1,1-Dichloroethane (1,1-DCA)	50.0	45.2	1.162	1.050	-9.6	NA	± 20 %	Average RF
1,1-Dichloroethene (1,1-DCE)	50.0	44.8	0.3955	0.3540	-10.5	NA	± 20 %	Average RF
1,2-Dichlorobenzene	50.0	49.9	1.257	1.256	-0.1	NA	± 20 %	Average RF
1,2-Dichloroethane	50.0	44.4	0.4672	0.4144	-11.3	NA	± 20 %	Average RF
1,2-Dichloropropane	50.0	49.5	0.4018	0.3978	-1.0	NA	± 20 %	Average RF
2-Butanone (MEK)	50.0	46.4	0.3528	0.3276	-7.1	NA	± 60 %	Average RF
2-Hexanone	50.0	47.6	0.3403	0.3236	-4.9	NA	± 60 %	Average RF
4-Methyl-2-pentanone	50.0	49.8	0.4753	0.4732	-0.4	NA	± 60 %	Average RF
Acetone	50.0	38.9	0.2443	0.1902	-22.2	NA	± 60 %	Average RF
Benzene	50.0	46.3	1.327	1.229	-7.4	NA	± 20 %	Average RF
Bromodichloromethane	50.0	46.7	0.4467	0.4168	-6.7	NA	± 20 %	Average RF
Bromoform	50.0	51.9	0.1922	0.1995	3.8	NA	± 20 %	Average RF
Bromomethane	50.0	43.1	0.4226	0.3638	-13.9	NA	± 60 %	Average RF
Carbon Disulfide	50.0	53.8	1.667	1.794	7.6	NA	± 20 %	Average RF
Carbon Tetrachloride	50.0	43.6	0.3467	0.3026	-12.7	NA	± 20 %	Average RF
Chlorobenzene	50.0	49.0	0.8455	0.8293	-1.9	NA	± 20 %	Average RF
Chloroethane	50.0	48.4	0.5091	0.4931	-3.2	NA	± 20 %	Average RF
Chloroform	50.0	43.8	0.9988	0.8743	-12.5	NA	± 20 %	Average RF
Chloromethane	50.0	44.7	0.8890	0.7946	-10.6	NA	± 60 %	Average RF
Dibromochloromethane	50.0	50.3	0.3395	0.3418	0.7	NA	± 20 %	Average RF
Dichloromethane	50.0	45.4	0.5971	0.5422	-9.2	NA	± 20 %	Average RF
Ethylbenzene	50.0	47.7	1.482	1.413	-4.6	NA	± 20 %	Average RF
Styrene	50.0	50.7	0.9130	0.9253	1.3	NA	± 20 %	Average RF
Tetrachloroethene (PCE)	50.0	49.4	0.3135	0.3099	-1.2	NA	± 20 %	Average RF
Toluene	50.0	49.5	1.301	1.287	-1.1	NA	± 20 %	Average RF
Trichloroethene (TCE)	50.0	46.6	0.3064	0.2855	-6.8	NA	± 20 %	Average RF
Trichlorofluoromethane (CFC 11)	50.0	43.0	0.7006	0.6019	-14.1	NA	± 20 %	Average RF
Vinyl Chloride	50.0	46.5	0.7552	0.7026	-7.0	NA	± 20 %	Average RF
cis-1,2-Dichloroethene	50.0	47.4	0.5845	0.5544	-5.2	NA	± 20 %	Average RF
cis-1,3-Dichloropropene	50.0	48.2	0.6033	0.5810	-3.7	NA	± 20 %	Average RF
m,p-Xylenes	100	100	0.5222	0.5230	0.2	NA	± 20 %	Average RF
o-Xylene	50.0	50.4	0.5207	0.5249	0.8	NA	± 20 %	Average RF
trans-1,2-Dichloroethene	50.0	47.2	0.5042	0.4756	-5.7	NA	± 20 %	Average RF
trans-1,3-Dichloropropene	50.0	48.2	0.5469	0.5277	-3.5	NA	± 20 %	Average RF
4-Bromofluorobenzene	50.0	47.8	0.5084	0.4861	-4.4	NA	± 20 %	Average RF
Dibromofluoromethane	50.0	45.8	0.3497	0.3206	-8.3	NA	± 20 %	Average RF
Toluene-d8	50.0	51.1	1.207	1.233	2.2	NA	± 20 %	Average RF

Project Name <b>Varian</b>			Project Number <b>150151-08</b>			ANALYSIS REQUESTED (Include Method Number and Container Preservative)													
Project Manager <b>R. Cadorette</b>			Report CC			PRESERVATIVE													
Company/Address <b>150 Royall Dr Canton, MA 02021</b>			NUMBER OF CONTAINERS	<b>GC/MS VDAs</b> • 8200 • 824 • CLP <b>GC/MS SVOAs</b> • 8270 • 825 <b>GC VDAs</b> • 8021 • 801/802 <b>PESTICIDES</b> • 8081 • 808 <b>PCBs</b> • 8082 • 808 <b>METALS, TOTAL</b> (List in comments below) <b>METALS, DISSOLVED</b> (List in comments below) <b>160.3 Anal. TS</b>									Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____						
Phone # <b>617-589-5327</b>				Email <b>raymond.cadorette@cbi.com</b>									REMARKS/ ALTERNATE DESCRIPTION						
Sampler's Signature <i>[Signature]</i>			Sampler's Printed Name <b>Dale Dailey</b>																
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING		MATRIX	4	X	X												
		DATE	TIME																
<b>0845-WL</b>		<b>4/15/14</b>	<b>1345</b>	<b>S</b>															
<del>0845-WL</del>																			
<b>03-45PD</b>		<b>4/15/14</b>	<b>1445</b>	<b>W</b>	<b>3</b>	<b>X</b>													
<b>03-455</b>		<b>4/15/14</b>	<b>1430</b>	<b>W</b>	<b>3</b>	<b>X</b>													
SPECIAL INSTRUCTIONS/COMMENTS Metals <b>MADEP CAM QA/QC</b>								TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day _____ 2 day _____ 3 day _____ 4 day _____ 5 day _____ REQUESTED REPORT DATE				REPORT REQUIREMENTS I. Results Only II. Results + OC Summaries (LCS, DUP, MS/MSD as required) III. Results + OC and Calibration Summaries IV. Data Validation Report with Raw Data Edata Yes _____ No _____				INVOICE INFORMATION PO # BILL TO: <b>CRIZ</b>			
STATE WHERE SAMPLES WERE COLLECTED								RECEIVED BY				RECEIVED BY							
RELINQUISHED BY <i>[Signature]</i>								RECEIVED BY <b>(GO UPS)</b>				RELINQUISHED BY							
Signature <b>Dale Dailey</b>		Signature <b>V. Sasso</b>		Signature <b>V. Sasso</b>		Signature <b>[Signature]</b>		Signature <b>[Signature]</b>		Signature <b>[Signature]</b>		Signature <b>[Signature]</b>		Signature <b>[Signature]</b>					
Printed Name <b>CB I</b>		Printed Name <b>Valerie Sasso</b>		Printed Name <b>Valerie Sasso</b>		Printed Name <b>[Printed Name]</b>		Printed Name <b>[Printed Name]</b>		Printed Name <b>[Printed Name]</b>		Printed Name <b>[Printed Name]</b>		Printed Name <b>[Printed Name]</b>					
Firm <b>4/15/14 16:00</b>		Firm <b>CB + I</b>		Firm <b>CB + I</b>		Firm <b>ALS</b>		Firm <b>ALS</b>		Firm <b>ALS</b>		Firm <b>ALS</b>		Firm <b>ALS</b>					
Date/Time		Date/Time <b>4/15/14 16:00</b>		Date/Time <b>4/16/14 14:20</b>		Date/Time <b>4/17/14 8:45</b>		Date/Time <b>4/17/14 8:45</b>		Date/Time <b>4/17/14 8:45</b>		Date/Time <b>4/17/14 8:45</b>		Date/Time <b>4/17/14 8:45</b>					

**R1402727 7 Y**  
 CB&I Environmental & Infrastructure  
 Varian Beverly



# Cooler Receipt and Preservation Check Form

Project/Client CBI Folder Number R14-2727

Cooler received on 4-17-14 by: NE COURIER: ALS UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler? YES NO
2. Were custody papers properly filled out (ink, signed, etc.)? YES NO
3. Did all bottles arrive in good condition (unbroken)? YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES NO N/A
5. Were Ice or Ice packs present? YES\* NO
6. Where did the bottles originate? ALS/ROC CLIENT NE 4-17-14
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035se N/A
8. Temperature of cooler(s) upon receipt: 6.5°\*

Is the temperature within 0° - 6° C?: Y N Y N Y N Y N Y N  
If No, Explain Below Date/Time Temperatures Taken: 4-17-14 @ 09:01

Thermometer ID: IR GUN#3 IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location	<u>R-002</u>	by <u>NE</u>	on <u>4-17-14</u>	at <u>09:05</u>
5035 samples placed in storage location	<u>F-05</u>	by <u>NE</u>	on <u>4-17-14</u>	at <u>09:05</u>

PC Secondary Review: MM 4/17/14

Cooler Breakdown: Date: 4/17/14 Time: 1732 by: slh

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

### Explain any discrepancies:

pH	Reagent	Lot Received		Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK
		YES	NO						
≥12	NaOH								No = Samples were preserved at lab as listed
≤2	HNO <sub>3</sub>								
≤2	H <sub>2</sub> SO <sub>4</sub>								
<4	NaHSO <sub>4</sub>								
Residual Chlorine (-)	For TCN Phenol and 522	If present, contact PM to add ascorbic acid Or sodium sulfite (522)							PM OK to Adjust:
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-						
	Zn Aceta	-	-						
	HCl	*	*	<u>4/17/14</u>	<u>3/15</u>				

\*Not to be tested before analysis - pH tested and recorded by VOAs or GenChem on a separate worksheet

Bottle lot numbers: 4002-003, 031714-1043

Other Comments:

*\* Samples were insulated from ice by a large amount of bubble wrap*

*NE 4-17-14*

PC Secondary Review: MM 4/21/14

\*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150148.05  
**Prepared By:** Dale Dailey **Date :** 6/3/2014  
**Matrix:** Groundwater  
**Analyte Group :** Volatile Organics **Analytical Method :** SW-846 8260C  
Metals 6010 C  
Chloride SM 4500-CL-E  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1402779  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes\*

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/16/14	SW-846 8260C	14 days	10 days	4/25, 4/26/14
4/16/14	6010 C	180 Days	180 Days	4/21, 4/22/14
4/16/14	SM 4500-CL-E	28 Days	28 Days	4/22/14

**Sample temperature within QC limits:** Yes, 2.8 C

### Surrogate Recovery

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

### MS/MSD

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

### Laboratory Control Samples

Are all laboratory control sample recoveries within the QC limits ? No

If no, list sample ID where range was exceeded: See Notes

**Equipment Field Blank ID :** NA

**Trip Blank ID :** NA

**Method Blank:** SW-846 8260C 4/25/2014

6010 C 4/22/2014

SM 4500-CL-E 4/22/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

### Notes:

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. AP26-DO (60), AP31-DO (30), OB-25-BR (86), OB26-DO (59), OB26-BR (90) AND OB28-BR (89) were re-analyzed at larger dilutions to bring the target analytes within the calibration range of the method. Both dilutions were reported with analytes over the range flagged with an "E" and the diluted analytes flagged with a "D"

All LCS and LCSD recoveries were within QC limits except 1,1-dichloroethane was outside limits high on the 4/24/14 LCS. Various RPD's were outside limits, including 1,1-dichloroethene, bromoform, Vinyl Chloride, and Acetone in batches 389662 and 389843. All outlying QC has been flagged with an "\*\*\*". The data was impacted for analyte vinyl chloride which was given a J qualifier in OB-25-BR (86'), OB26-BR (90) and OB-19-DO (56). No other data was impacted.

\* COC with added depth values did not scan well, but is included with original COC in the report.

**Reviewed By:** Pernilla Haley, 6/5/14



April 29, 2014

Service Request No: R1402779

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150148-05000000**

Dear Mr. Cadorette:

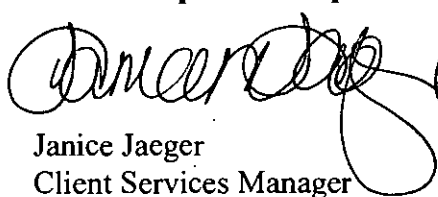
Enclosed are the results of the sample(s) submitted to our laboratory on April 18, 2014. For your reference, these analyses have been assigned our service request number **R1402779**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**



Janice Jaeger  
Client Services Manager

Page 1 of 46

CC: Pernilla Haley

## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Water

**Service Request No.:** R1402779  
**Project Number:** 150148-05000000  
**Date Received:** 04/18/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Water samples were collected on 04/16/14 and received at ALS in good condition at a cooler temperature of 2.8 °C as noted on the cooler receipt and preservation check form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #.

### Volatile Organics

Eight water samples were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples AP26-DO (60'), AP31-DO (30'), OB-25-BR (86'), OB26-DO (59'), OB26-BR (90') and OB28-BR (89') were re-analyzed at larger dilutions to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D".

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Surrogate Standard recoveries were within QC limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits except 1,1,-Dichloroethane was outside limits high on the 04/24/14 LCS. Various RPD's were outside limits. All outlying QC has been flagged with an "\*\*". No data was affected.

All samples were analyzed within the required holding time of 14 days.

### Inorganic Analyses

Five water samples were analyzed for Chloride by SM3400-Cl-E and Soluble Iron and Manganese by method 6010C. Soluble Metals were filtered in the field.

The initial and continuing calibration criteria were met for all analytes.

All Blank Spike (LCS) recoveries were within QC limits.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150148

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1402779-001-008

 Matrices: Groundwater/Surface Water  Soil/Sediment Drinking Water Air Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X Yes No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X Yes No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X Yes No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X Yes No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes No Yes No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X Yes No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X Yes No <sup>1</sup>
----------	---	-----------------------

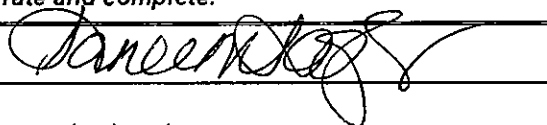
**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X Yes No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes X No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:



 Position: Client Services  
Manager

 Printed Name: Janice Jaeger

 Date: 04/29/14
**00003**

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402779

<u>Lab ID</u>	<u>Client ID</u>
R1402779-001	AP26-DO (60')
R1402779-002	AP31-DO (30')
R1402779-003	AP32-DO (30')
R1402779-004	OB19-DO (56')
R1402779-005	OB-25-BR (86')
R1402779-006	OB26-DO (59')
R1402779-007	OB26-BR (90')
R1402779-008	OB28-BR (89')

00004

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*



*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: **01 JUL 2013**

**M-NY032      ALS ENVIRONMENTAL ROCHESTER  
                 ROCHESTER NY**

<b>NON POTABLE WATER (CHEMISTRY)</b>	<b>Effective Date</b>	<b>01 JUL 2013</b>	<b>Expiration Date</b>	<b>30 JUN 2014</b>
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CaCO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	



COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
CHLORIDE			SM 4500-CL-E	
CHLORIDE			EPA 300.0	
FLUORIDE			EPA 300.0	
SULFATE			EPA 300.0	
AMMONIA-N			EPA 350.1	
NITRATE-N			EPA 300.0	
NITRATE-N			EPA 353.2	
KJELDAHL-N			EPA 351.2	
ORTHOPHOSPHATE			EPA 365.1	
PHOSPHORUS, TOTAL			EPA 365.1	
CHEMICAL OXYGEN DEMAND			EPA 410.4	
BIOCHEMICAL OXYGEN DEMAND			SM 5210B	
TOTAL ORGANIC CARBON			SM 5310C	
CYANIDE, TOTAL			EPA 335.4	
NON-FILTERABLE RESIDUE			SM 2540D	
OIL AND GREASE			EPA 1664	
PHENOLICS, TOTAL			EPA 420.4	
VOLATILE HALOCARBONS			EPA 601	
VOLATILE HALOCARBONS			EPA 624	
VOLATILE AROMATICS			EPA 602	
VOLATILE AROMATICS			EPA 624	
SVOC-ACID EXTRACTABLES			EPA 625	
SVOC-BASE/NEUTRAL EXTRACTABLES			EPA 625	
POLYCHLORINATED BIPHENYLS (WATEF			EPA 608	



# INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

## Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	3010A
200.8	ILM05.3
6010C	3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

## Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3010A
6010 SPLP (1312) extract	3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP26-DO (60')  
Lab Code: R1402779-001

Service Request: R1402779  
Date Collected: 4/16/14 0930  
Date Received: 4/18/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	43.0	mg/L	1.0	1	NA	4/22/14 13:19	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP26-DO (60")  
Lab Code: R1402779-001

Service Request: R1402779  
Date Collected: 4/16/14 0930  
Date Received: 4/18/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/21/14	4/22/14 13:33	
Manganese, Dissolved	6010C	810		µg/L	10	1	4/21/14	4/22/14 13:33	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 0930  
 Date Received: 4/18/14  
 Date Analyzed: 4/25/14 05:37

Sample Name: AP26-DO (60')  
 Lab Code: R1402779-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa10\data\042414\F7900.D\

Analysis Lot: 389662  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	10		2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	490	E	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/25/14 05:37	
Dibromofluoromethane	100	70-130	4/25/14 05:37	
Toluene-d8	98	70-130	4/25/14 05:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 0930  
 Date Received: 4/18/14  
 Date Analyzed: 4/25/14 22:04

Sample Name: AP26-DO (60')  
 Lab Code: R1402779-001  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042514\F7931.D\

Analysis Lot: 389843  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10	U	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	50	U	50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	D	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	440	D	10	
79-01-6	Trichloroethene (TCE)	10	U	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	10	U	10	
156-59-2	cis-1,2-Dichloroethene	10	U	10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/25/14 22:04	
Dibromofluoromethane	97	70-130	4/25/14 22:04	
Toluene-d8	99	70-130	4/25/14 22:04	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP31-DO (30')  
Lab Code: R1402779-002

Service Request: R1402779  
Date Collected: 4/16/14 1030  
Date Received: 4/18/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	720	mg/L	10	10	NA	4/22/14 13:27	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP31-DO (30')  
Lab Code: R1402779-002

Service Request: R1402779  
Date Collected: 4/16/14 1030  
Date Received: 4/18/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100 U	µg/L	100	1	4/21/14	4/24/14 16:31	
Manganese, Dissolved	6010C	865	µg/L	10	1	4/21/14	4/25/14 10:43	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 1030  
 Date Received: 4/18/14  
 Date Analyzed: 4/25/14 06:07

Sample Name: AP31-DO (30')  
 Lab Code: R1402779-002

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042414\F7901.D

Analysis Lot: 389662  
 Instrument Name: R-MS-10  
 Dilution Factor: 10

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	600		20	
79-34-5	1,1,2,2-Tetrachloroethane	20	U	20	
79-00-5	1,1,2-Trichloroethane	20	U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20	U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	20	U	20	
107-06-2	1,2-Dichloroethane	20	U	20	
78-87-5	1,2-Dichloropropane	20	U	20	
67-64-1	Acetone	100	U	100	
75-27-4	Bromodichloromethane	20	U	20	
75-25-2	Bromoform	20	U	20	
74-83-9	Bromomethane	20	U	20	
56-23-5	Carbon Tetrachloride	150		20	
108-90-7	Chlorobenzene	20	U	20	
75-00-3	Chloroethane	20	U	20	
67-66-3	Chloroform	800		20	
74-87-3	Chloromethane	20	U	20	
124-48-1	Dibromochloromethane	20	U	20	
75-09-2	Methylene Chloride	20	U	20	
127-18-4	Tetrachloroethene (PCE)	7500	E	20	
79-01-6	Trichloroethene (TCE)	4500	E	20	
75-69-4	Trichlorofluoromethane (CFC 11)	20	U	20	
75-01-4	Vinyl Chloride	20	U	20	
156-59-2	cis-1,2-Dichloroethene	20	U	20	
10061-01-5	cis-1,3-Dichloropropene	20	U	20	
156-60-5	trans-1,2-Dichloroethene	20	U	20	
10061-02-6	trans-1,3-Dichloropropene	20	U	20	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	70-130	4/25/14 06:07	
Dibromofluoromethane	100	70-130	4/25/14 06:07	
Toluene-d8	99	70-130	4/25/14 06:07	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 1030  
 Date Received: 4/18/14  
 Date Analyzed: 4/25/14 22:35

Sample Name: AP31-DO (30')  
 Lab Code: R1402779-002  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042514\F7932.D\

Analysis Lot: 389843  
 Instrument Name: R-MS-10  
 Dilution Factor: 100

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	600 D	200	
79-34-5	1,1,2,2-Tetrachloroethane	200 U	200	
79-00-5	1,1,2-Trichloroethane	200 U	200	
75-34-3	1,1-Dichloroethane (1,1-DCA)	200 U	200	
75-35-4	1,1-Dichloroethene (1,1-DCE)	200 U	200	
107-06-2	1,2-Dichloroethane	200 U	200	
78-87-5	1,2-Dichloropropane	200 U	200	
67-64-1	Acetone	1000 U	1000	
75-27-4	Bromodichloromethane	200 U	200	
75-25-2	Bromoform	200 U	200	
74-83-9	Bromomethane	200 U	200	
56-23-5	Carbon Tetrachloride	200 U	200	
108-90-7	Chlorobenzene	200 U	200	
75-00-3	Chloroethane	200 U	200	
67-66-3	Chloroform	830 D	200	
74-87-3	Chloromethane	200 U	200	
124-48-1	Dibromochloromethane	200 U	200	
75-09-2	Methylene Chloride	200 U	200	
127-18-4	Tetrachloroethene (PCE)	7400 D	200	
79-01-6	Trichloroethene (TCE)	4600 D	200	
75-69-4	Trichlorofluoromethane (CFC 11)	200 U	200	
75-01-4	Vinyl Chloride	200 U	200	
156-59-2	cis-1,2-Dichloroethene	200 U	200	
10061-01-5	cis-1,3-Dichloropropene	200 U	200	
156-60-5	trans-1,2-Dichloroethene	200 U	200	
10061-02-6	trans-1,3-Dichloropropene	200 U	200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/25/14 22:35	
Dibromofluoromethane	97	70-130	4/25/14 22:35	
Toluene-d8	101	70-130	4/25/14 22:35	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: AP32-DO (30')  
Lab Code: R1402779-003

Service Request: R1402779  
Date Collected: 4/16/14 1130  
Date Received: 4/18/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	608	mg/L	10	10	NA	4/22/14 13:27	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: AP32-DO (30')  
 Lab Code: R1402779-003

Service Request: R1402779  
 Date Collected: 4/16/14 1130  
 Date Received: 4/18/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100 U	µg/L	100	1	4/21/14	4/24/14 16:39	
Manganese, Dissolved	6010C	107000	µg/L	2000	200	4/21/14	4/22/14 13:57	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 1130  
 Date Received: 4/18/14  
 Date Analyzed: 4/25/14 23:05

Sample Name: AP32-DO (30')  
 Lab Code: R1402779-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa10\data\042514\F7933.D\

Analysis Lot: 389843  
 Instrument Name: R-MS-10  
 Dilution Factor: 10

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1200		20	
79-34-5	1,1,2,2-Tetrachloroethane	20	U	20	
79-00-5	1,1,2-Trichloroethane	20	U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20	U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	20	U	20	
107-06-2	1,2-Dichloroethane	20	U	20	
78-87-5	1,2-Dichloropropane	20	U	20	
67-64-1	Acetone	100	U	100	
75-27-4	Bromodichloromethane	20	U	20	
75-25-2	Bromoform	20	U	20	
74-83-9	Bromomethane	20	U	20	
56-23-5	Carbon Tetrachloride	450		20	
108-90-7	Chlorobenzene	20	U	20	
75-00-3	Chloroethane	20	U	20	
67-66-3	Chloroform	1600		20	
74-87-3	Chloromethane	20	U	20	
124-48-1	Dibromochloromethane	20	U	20	
75-09-2	Methylene Chloride	20	U	20	
127-18-4	Tetrachloroethene (PCE)	1600		20	
79-01-6	Trichloroethene (TCE)	36		20	
75-69-4	Trichlorofluoromethane (CFC 11)	20	U	20	
75-01-4	Vinyl Chloride	20	U	20	
156-59-2	cis-1,2-Dichloroethene	20	U	20	
10061-01-5	cis-1,3-Dichloropropene	20	U	20	
156-60-5	trans-1,2-Dichloroethene	20	U	20	
10061-02-6	trans-1,3-Dichloropropene	20	U	20	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	4/25/14 23:05	
Dibromofluoromethane	104	70-130	4/25/14 23:05	
Toluene-d8	100	70-130	4/25/14 23:05	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: OB19-DO (56')  
Lab Code: R1402779-004

Service Request: R1402779  
Date Collected: 4/16/14 1315  
Date Received: 4/18/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	33.0	mg/L	1.0	1	NA	4/22/14 13:21	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: OB19-DO (56')  
 Lab Code: R1402779-004

Service Request: R1402779  
 Date Collected: 4/16/14 1315  
 Date Received: 4/18/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/21/14	4/22/14 14:02	
Manganese, Dissolved	6010C	109		µg/L	10	1	4/21/14	4/22/14 14:02	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 1315  
 Date Received: 4/18/14  
 Date Analyzed: 4/25/14 07:08

Sample Name: OB19-DO (56')  
 Lab Code: R1402779-004

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042414\F7903.D\

Analysis Lot: 389662  
 Instrument Name: R-MS-10  
 Dilution Factor: 20

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	40	U	40	
79-34-5	1,1,2,2-Tetrachloroethane	40	U	40	
79-00-5	1,1,2-Trichloroethane	40	U	40	
75-34-3	1,1-Dichloroethane (1,1-DCA)	40	U	40	
75-35-4	1,1-Dichloroethene (1,1-DCE)	40	U	40	
107-06-2	1,2-Dichloroethane	40	U	40	
78-87-5	1,2-Dichloropropane	40	U	40	
67-64-1	Acetone	200	U	200	
75-27-4	Bromodichloromethane	40	U	40	
75-25-2	Bromoform	40	U	40	
74-83-9	Bromomethane	40	U	40	
56-23-5	Carbon Tetrachloride	40	U	40	
108-90-7	Chlorobenzene	40	U	40	
75-00-3	Chloroethane	40	U	40	
67-66-3	Chloroform	40	U	40	
74-87-3	Chloromethane	40	U	40	
124-48-1	Dibromochloromethane	40	U	40	
75-09-2	Methylene Chloride	40	U	40	
127-18-4	Tetrachloroethene (PCE)	410		40	
79-01-6	Trichloroethene (TCE)	2000		40	
75-69-4	Trichlorofluoromethane (CFC 11)	40	U	40	
75-01-4	Vinyl Chloride	61		40	
156-59-2	cis-1,2-Dichloroethene	830		40	
10061-01-5	cis-1,3-Dichloropropene	40	U	40	
156-60-5	trans-1,2-Dichloroethene	57		40	
10061-02-6	trans-1,3-Dichloropropene	40	U	40	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/25/14 07:08	
Dibromofluoromethane	100	70-130	4/25/14 07:08	
Toluene-d8	99	70-130	4/25/14 07:08	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: OB-25-BR (86')  
Lab Code: R1402779-005

Service Request: R1402779  
Date Collected: 4/16/14 1230  
Date Received: 4/18/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	114	mg/L	2.0	2	NA	4/22/14 13:22	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: OB-25-BR (86')  
 Lab Code: R1402779-005

Service Request: R1402779  
 Date Collected: 4/16/14 1230  
 Date Received: 4/18/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100 U	µg/L	100	1	4/21/14	4/22/14 14:08	
Manganese, Dissolved	6010C	6440	µg/L	10	1	4/21/14	4/22/14 14:08	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 1230  
 Date Received: 4/18/14  
 Date Analyzed: 4/25/14 07:38

Sample Name: OB-25-BR (86')  
 Lab Code: R1402779-005

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042414\F7904.D\

Analysis Lot: 389662  
 Instrument Name: R-MS-10  
 Dilution Factor: 25

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	50	U	50	
79-34-5	1,1,2,2-Tetrachloroethane	50	U	50	
79-00-5	1,1,2-Trichloroethane	50	U	50	
75-34-3	1,1-Dichloroethane (1,1-DCA)	50	U	50	
75-35-4	1,1-Dichloroethene (1,1-DCE)	64		50	
107-06-2	1,2-Dichloroethane	50	U	50	
78-87-5	1,2-Dichloropropane	50	U	50	
67-64-1	Acetone	250	U	250	
75-27-4	Bromodichloromethane	50	U	50	
75-25-2	Bromoform	50	U	50	
74-83-9	Bromomethane	50	U	50	
56-23-5	Carbon Tetrachloride	50	U	50	
108-90-7	Chlorobenzene	50	U	50	
75-00-3	Chloroethane	50	U	50	
67-66-3	Chloroform	50	U	50	
74-87-3	Chloromethane	50	U	50	
124-48-1	Dibromochloromethane	50	U	50	
75-09-2	Methylene Chloride	50	U	50	
127-18-4	Tetrachloroethene (PCE)	320		50	
79-01-6	Trichloroethene (TCE)	4500		50	
75-69-4	Trichlorofluoromethane (CFC 11)	50	U	50	
75-01-4	Vinyl Chloride	5700	E	50	
156-59-2	cis-1,2-Dichloroethene	24000	E	50	
10061-01-5	cis-1,3-Dichloropropene	50	U	50	
156-60-5	trans-1,2-Dichloroethene	56		50	
10061-02-6	trans-1,3-Dichloropropene	50	U	50	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	70-130	4/25/14 07:38	
Dibromofluoromethane	100	70-130	4/25/14 07:38	
Toluene-d8	100	70-130	4/25/14 07:38	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 1230  
 Date Received: 4/18/14  
 Date Analyzed: 4/25/14 23:36

Sample Name: OB-25-BR (86')  
 Lab Code: R1402779-005  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042514\F7934.D\

Analysis Lot: 389843  
 Instrument Name: R-MS-10  
 Dilution Factor: 250

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	500	U	500	
79-34-5	1,1,2,2-Tetrachloroethane	500	U	500	
79-00-5	1,1,2-Trichloroethane	500	U	500	
75-34-3	1,1-Dichloroethane (1,1-DCA)	500	U	500	
75-35-4	1,1-Dichloroethene (1,1-DCE)	500	U	500	
107-06-2	1,2-Dichloroethane	500	U	500	
78-87-5	1,2-Dichloropropane	500	U	500	
67-64-1	Acetone	2500	U	2500	
75-27-4	Bromodichloromethane	500	U	500	
75-25-2	Bromoform	500	U	500	
74-83-9	Bromomethane	500	U	500	
56-23-5	Carbon Tetrachloride	500	U	500	
108-90-7	Chlorobenzene	500	U	500	
75-00-3	Chloroethane	500	U	500	
67-66-3	Chloroform	500	U	500	
74-87-3	Chloromethane	500	U	500	
124-48-1	Dibromochloromethane	500	U	500	
75-09-2	Methylene Chloride	500	U	500	
127-18-4	Tetrachloroethene (PCE)	500	U	500	
79-01-6	Trichloroethene (TCE)	4300	D	500	
75-69-4	Trichlorofluoromethane (CFC 11)	500	U	500	
75-01-4	Vinyl Chloride	5600	D	500	
156-59-2	cis-1,2-Dichloroethene	25000	D	500	
10061-01-5	cis-1,3-Dichloropropene	500	U	500	
156-60-5	trans-1,2-Dichloroethene	500	U	500	
10061-02-6	trans-1,3-Dichloropropene	500	U	500	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	4/25/14 23:36	
Dibromofluoromethane	100	70-130	4/25/14 23:36	
Toluene-d8	99	70-130	4/25/14 23:36	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 1440  
 Date Received: 4/18/14  
 Date Analyzed: 4/25/14 08:09

Sample Name: OB26-DO (59')  
 Lab Code: R1402779-006

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042414\F7905.D\

Analysis Lot: 389662  
 Instrument Name: R-MS-10  
 Dilution Factor: 25

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	50	U	50	
79-34-5	1,1,2,2-Tetrachloroethane	50	U	50	
79-00-5	1,1,2-Trichloroethane	50	U	50	
75-34-3	1,1-Dichloroethane (1,1-DCA)	50	U	50	
75-35-4	1,1-Dichloroethene (1,1-DCE)	50	U	50	
107-06-2	1,2-Dichloroethane	50	U	50	
78-87-5	1,2-Dichloropropane	50	U	50	
67-64-1	Acetone	250	U	250	
75-27-4	Bromodichloromethane	50	U	50	
75-25-2	Bromoform	50	U	50	
74-83-9	Bromomethane	50	U	50	
56-23-5	Carbon Tetrachloride	50	U	50	
108-90-7	Chlorobenzene	50	U	50	
75-00-3	Chloroethane	50	U	50	
67-66-3	Chloroform	50	U	50	
74-87-3	Chloromethane	50	U	50	
124-48-1	Dibromochloromethane	50	U	50	
75-09-2	Methylene Chloride	50	U	50	
127-18-4	Tetrachloroethene (PCE)	1800		50	
79-01-6	Trichloroethene (TCE)	7400	E	50	
75-69-4	Trichlorofluoromethane (CFC 11)	50	U	50	
75-01-4	Vinyl Chloride	50	U	50	
156-59-2	cis-1,2-Dichloroethene	740		50	
10061-01-5	cis-1,3-Dichloropropene	50	U	50	
156-60-5	trans-1,2-Dichloroethene	50	U	50	
10061-02-6	trans-1,3-Dichloropropene	50	U	50	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	96	70-130	4/25/14 08:09	
Dibromofluoromethane	100	70-130	4/25/14 08:09	
Toluene-d8	99	70-130	4/25/14 08:09	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 1440  
 Date Received: 4/18/14  
 Date Analyzed: 4/26/14 00:06

Sample Name: OB26-DO (59')  
 Lab Code: R1402779-006  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa10\data\042514\F7935.D\

Analysis Lot: 389843  
 Instrument Name: R-MS-10  
 Dilution Factor: 100

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	200	U	200	
79-34-5	1,1,2,2-Tetrachloroethane	200	U	200	
79-00-5	1,1,2-Trichloroethane	200	U	200	
75-34-3	1,1-Dichloroethane (1,1-DCA)	200	U	200	
75-35-4	1,1-Dichloroethene (1,1-DCE)	200	U	200	
107-06-2	1,2-Dichloroethane	200	U	200	
78-87-5	1,2-Dichloropropane	200	U	200	
67-64-1	Acetone	1000	U	1000	
75-27-4	Bromodichloromethane	200	U	200	
75-25-2	Bromoform	200	U	200	
74-83-9	Bromomethane	200	U	200	
56-23-5	Carbon Tetrachloride	200	U	200	
108-90-7	Chlorobenzene	200	U	200	
75-00-3	Chloroethane	200	U	200	
67-66-3	Chloroform	200	U	200	
74-87-3	Chloromethane	200	U	200	
124-48-1	Dibromochloromethane	200	U	200	
75-09-2	Methylene Chloride	200	U	200	
127-18-4	Tetrachloroethene (PCE)	1600	D	200	
79-01-6	Trichloroethene (TCE)	6600	D	200	
75-69-4	Trichlorofluoromethane (CFC 11)	200	U	200	
75-01-4	Vinyl Chloride	200	U	200	
156-59-2	cis-1,2-Dichloroethene	680	D	200	
10061-01-5	cis-1,3-Dichloropropene	200	U	200	
156-60-5	trans-1,2-Dichloroethene	200	U	200	
10061-02-6	trans-1,3-Dichloropropene	200	U	200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	70-130	4/26/14 00:06	
Dibromofluoromethane	100	70-130	4/26/14 00:06	
Toluene-d8	100	70-130	4/26/14 00:06	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 1415  
 Date Received: 4/18/14  
 Date Analyzed: 4/25/14 08:39

Sample Name: OB26-BR (90')  
 Lab Code: R1402779-007

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042414\F7906.D\

Analysis Lot: 389662  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	7.7	2.0	
79-01-6	Trichloroethene (TCE)	260 E	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	6.8	2.0	
156-59-2	cis-1,2-Dichloroethene	130	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	70-130	4/25/14 08:39	
Dibromofluoromethane	96	70-130	4/25/14 08:39	
Toluene-d8	99	70-130	4/25/14 08:39	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 1415  
 Date Received: 4/18/14  
 Date Analyzed: 4/26/14 00:37

Sample Name: OB26-BR (90')  
 Lab Code: R1402779-007  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa10\data\042514\F7936.D\

Analysis Lot: 389843  
 Instrument Name: R-MS-10  
 Dilution Factor: 2.5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.0	U	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
67-64-1	Acetone	25	U	25	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-09-2	Methylene Chloride	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	7.3	D	5.0	
79-01-6	Trichloroethene (TCE)	240	D	5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	6.2	D	5.0	
156-59-2	cis-1,2-Dichloroethene	130	D	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0	U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	4/26/14 00:37	
Dibromofluoromethane	101	70-130	4/26/14 00:37	
Toluene-d8	99	70-130	4/26/14 00:37	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 1350  
 Date Received: 4/18/14  
 Date Analyzed: 4/25/14 09:26

Sample Name: OB28-BR (89')  
 Lab Code: R1402779-008

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042414\F7907.D\

Analysis Lot: 389662  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	4.2		2.0	
79-01-6	Trichloroethene (TCE)	1000	E	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	170		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.6		2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/25/14 09:26	
Dibromofluoromethane	99	70-130	4/25/14 09:26	
Toluene-d8	100	70-130	4/25/14 09:26	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: 4/16/14 1350  
 Date Received: 4/18/14  
 Date Analyzed: 4/26/14 01:07

Sample Name: OB28-BR (89')  
 Lab Code: R1402779-008  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042514\F7937.D\

Analysis Lot: 389843  
 Instrument Name: R-MS-10  
 Dilution Factor: 10

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	20	U	20	
79-34-5	1,1,2,2-Tetrachloroethane	20	U	20	
79-00-5	1,1,2-Trichloroethane	20	U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20	U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	20	U	20	
107-06-2	1,2-Dichloroethane	20	U	20	
78-87-5	1,2-Dichloropropane	20	U	20	
67-64-1	Acetone	100	U	100	
75-27-4	Bromodichloromethane	20	U	20	
75-25-2	Bromoform	20	U	20	
74-83-9	Bromomethane	20	U	20	
56-23-5	Carbon Tetrachloride	20	U	20	
108-90-7	Chlorobenzene	20	U	20	
75-00-3	Chloroethane	20	U	20	
67-66-3	Chloroform	20	U	20	
74-87-3	Chloromethane	20	U	20	
124-48-1	Dibromochloromethane	20	U	20	
75-09-2	Methylene Chloride	20	U	20	
127-18-4	Tetrachloroethene (PCE)	20	U	20	
79-01-6	Trichloroethene (TCE)	980	D	20	
75-69-4	Trichlorofluoromethane (CFC 11)	20	U	20	
75-01-4	Vinyl Chloride	20	U	20	
156-59-2	cis-1,2-Dichloroethene	160	D	20	
10061-01-5	cis-1,3-Dichloropropene	20	U	20	
156-60-5	trans-1,2-Dichloroethene	20	U	20	
10061-02-6	trans-1,3-Dichloropropene	20	U	20	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/26/14 01:07	
Dibromofluoromethane	97	70-130	4/26/14 01:07	
Toluene-d8	100	70-130	4/26/14 01:07	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: Method Blank  
Lab Code: R1402779-MB1

Service Request: R1402779  
Date Collected: NA  
Date Received: NA  
Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	1.0 U	mg/L	1.0	1	NA	4/22/14 13:02	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: Method Blank  
Lab Code: R1402779-MB2

Service Request: R1402779  
Date Collected: NA  
Date Received: NA  
Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	1.0 U	mg/L	1.0	1	NA	4/22/14 13:18	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: Method Blank  
Lab Code: R1402779-MB

Service Request: R1402779  
Date Collected: NA  
Date Received: NA

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100 U	µg/L	100	1	4/21/14	4/22/14 12:38	
Manganese, Dissolved	6010C	10 U	µg/L	10	1	4/21/14	4/22/14 12:38	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/25/14 00:32

Sample Name: Method Blank  
 Lab Code: RQ1404214-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042414\F7890.D\

Analysis Lot: 389662  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/25/14 00:32	
Dibromofluoromethane	98	70-130	4/25/14 00:32	
Toluene-d8	98	70-130	4/25/14 00:32	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/25/14 17:30

Sample Name: Method Blank  
 Lab Code: RQ1404233-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa10\data\042514\F7922.D\

Analysis Lot: 389843  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	4/25/14 17:30	
Dibromofluoromethane	99	70-130	4/25/14 17:30	
Toluene-d8	99	70-130	4/25/14 17:30	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water

Service Request: R1402779  
Date Analyzed: 4/22/14

Lab Control Sample Summary  
General Chemistry Parameters

Units: mg/L  
Basis: NA

Lab Control Sample  
R1402779-LCS1

Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Chloride	SM 4500-Cl-E-1997(20)	23.8	25.0	95	86 - 110

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water

Service Request: R1402779  
Date Analyzed: 4/22/14

Lab Control Sample Summary  
General Chemistry Parameters

Units: mg/L  
Basis: NA

Analyte Name	Method	Lab Control Sample R1402779-LCS2			% Rec Limits
		Result	Spike Amount	% Rec	
Chloride	SM 4500-Cl-E-1997(20)	23.9	25.0	96	86 - 110

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water

Service Request: R1402779  
Date Analyzed: 4/22/14

Lab Control Sample Summary  
Inorganic Parameters

Units: µg/L  
Basis: NA

Lab Control Sample  
R1402779-LCS

Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Iron, Dissolved	6010C	1010	1000	101	80 - 120
Manganese, Dissolved	6010C	485	500	97	80 - 120

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Analyzed: 4/24/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389662

Analyte Name	Lab Control Sample RQ1404214-02			Duplicate Lab Control Sample RQ1404214-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	18.5	20.0	93	21.7	20.0	109	70 - 130	16	20
1,1,2,2-Tetrachloroethane	17.4	20.0	87	21.1	20.0	105	70 - 130	19	20
1,1,2-Trichloroethane	20.6	20.0	103	22.9	20.0	114	70 - 130	10	20
1,1-Dichloroethane (1,1-DCA)	19.5	20.0	98	23.2	20.0	116	70 - 130	17	20
1,1-Dichloroethene (1,1-DCE)	21.0	20.0	105	27.3	20.0	137 *	70 - 130	26 *	20
1,2-Dichloroethane	17.6	20.0	88	20.4	20.0	102	70 - 130	15	20
1,2-Dichloropropane	20.7	20.0	104	24.1	20.0	121	70 - 130	15	20
Acetone	23.9	20.0	119	22.1	20.0	110	40 - 160	8	20
Bromodichloromethane	19.3	20.0	97	21.9	20.0	110	70 - 130	13	20
Bromoform	18.9	20.0	94	23.2	20.0	116	70 - 130	21 *	20
Bromomethane	24.7	20.0	124	26.6	20.0	133	40 - 160	7	20
Carbon Tetrachloride	18.4	20.0	92	21.8	20.0	109	70 - 130	17	20
Chlorobenzene	19.0	20.0	95	21.9	20.0	109	70 - 130	14	20
Chloroethane	18.5	20.0	92	21.2	20.0	106	70 - 130	14	20
Chloroform	18.7	20.0	94	21.9	20.0	110	70 - 130	16	20
Chloromethane	20.3	20.0	102	24.7	20.0	124	40 - 160	20	20
Dibromochloromethane	19.9	20.0	99	22.6	20.0	113	70 - 130	13	20
Methylene Chloride	19.9	20.0	99	23.3	20.0	116	70 - 130	16	20
Tetrachloroethene (PCE)	19.9	20.0	99	22.6	20.0	113	70 - 130	13	20
Trichloroethene (TCE)	21.2	20.0	106	24.7	20.0	123	70 - 130	15	20
Trichlorofluoromethane (CFC 11)	18.2	20.0	91	20.7	20.0	103	70 - 130	13	20
Vinyl Chloride	19.9	20.0	99	24.4	20.0	122	70 - 130	21 *	20
cis-1,2-Dichloroethene	19.3	20.0	97	22.3	20.0	112	70 - 130	14	20
cis-1,3-Dichloropropene	19.0	20.0	95	22.1	20.0	110	70 - 130	15	20
trans-1,2-Dichloroethene	19.8	20.0	99	23.6	20.0	118	70 - 130	18	20
trans-1,3-Dichloropropene	18.6	20.0	93	21.8	20.0	109	70 - 130	16	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402779  
 Date Analyzed: 4/25/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 389843

Analyte Name	Lab Control Sample RQ1404233-02			Duplicate Lab Control Sample RQ1404233-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	17.0	20.0	85	16.7	20.0	83	70 - 130	2	20
1,1,2,2-Tetrachloroethane	17.6	20.0	88	17.7	20.0	88	70 - 130	<1	20
1,1,2-Trichloroethane	19.5	20.0	97	19.0	20.0	95	70 - 130	3	20
1,1-Dichloroethane (1,1-DCA)	19.2	20.0	96	18.7	20.0	94	70 - 130	2	20
1,1-Dichloroethene (1,1-DCE)	20.0	20.0	100	20.4	20.0	102	70 - 130	2	20
1,2-Dichloroethane	17.1	20.0	86	17.4	20.0	87	70 - 130	2	20
1,2-Dichloropropane	20.5	20.0	102	19.6	20.0	98	70 - 130	4	20
Acetone	23.6	20.0	118	18.6	20.0	93	40 - 160	24 *	20
Bromodichloromethane	19.5	20.0	98	18.5	20.0	93	70 - 130	5	20
Bromoform	18.3	20.0	91	17.6	20.0	88	70 - 130	3	20
Bromomethane	25.9	20.0	130	23.6	20.0	118	40 - 160	9	20
Carbon Tetrachloride	16.9	20.0	85	16.9	20.0	84	70 - 130	<1	20
Chlorobenzene	18.3	20.0	92	17.7	20.0	88	70 - 130	3	20
Chloroethane	17.2	20.0	86	16.9	20.0	85	70 - 130	1	20
Chloroform	18.5	20.0	93	18.2	20.0	91	70 - 130	2	20
Chloromethane	19.4	20.0	97	19.5	20.0	98	40 - 160	<1	20
Dibromochloromethane	18.8	20.0	94	18.6	20.0	93	70 - 130	1	20
Methylene Chloride	20.2	20.0	101	19.6	20.0	98	70 - 130	3	20
Tetrachloroethene (PCE)	17.4	20.0	87	17.3	20.0	86	70 - 130	<1	20
Trichloroethene (TCE)	18.5	20.0	93	17.8	20.0	89	70 - 130	4	20
Trichlorofluoromethane (CFC 11)	16.4	20.0	82	16.3	20.0	82	70 - 130	<1	20
Vinyl Chloride	18.9	20.0	94	18.5	20.0	93	70 - 130	2	20
cis-1,2-Dichloroethene	18.8	20.0	94	18.6	20.0	93	70 - 130	<1	20
cis-1,3-Dichloropropene	19.2	20.0	96	18.8	20.0	94	70 - 130	3	20
trans-1,2-Dichloroethene	18.5	20.0	92	18.2	20.0	91	70 - 130	1	20
trans-1,3-Dichloropropene	18.5	20.0	92	18.7	20.0	93	70 - 130	1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

1 Mustard Street, Suite 250, Rochester, NY 14609 | 585.288.5380 | 800.695.7222 | 585.288.8475 (fax) PAGE 1 OF 1

Project Name Varian Beverly		Project Number 150148-05000000		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																																																								
Project Manager Raymond Cadorette		Report CC		PRESERVATIVE																																																								
Company/Address CB&I Environmental, Inc. 150 Royall Street Canton, MA 02021		<table style="width: 100%; text-align: center;"> <tr> <td rowspan="3" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">GC/MS VOA'S</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">GC/MS SVOA'S</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">GC VOA'S</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PESTICIDES</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PCBS</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">METALS, TOTAL</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">METALS, DISSOLVED</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">OTHER</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">OTHER</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">OTHER</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">OTHER</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">OTHER</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">OTHER</td> </tr> <tr> <td>☐ 8260</td> <td>☐ 824</td> <td>☐ CLP</td> <td>☐ 8270</td> <td>☐ 825</td> <td>☐ 601/602</td> <td>☐ 8081</td> <td>☐ 808</td> <td>☐ 8082</td> <td>☐ 608</td> <td colspan="3">[List in comments below]</td> <td colspan="3">[List in comments below]</td> </tr> <tr> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>20</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>												NUMBER OF CONTAINERS	GC/MS VOA'S	GC/MS SVOA'S	GC VOA'S	PESTICIDES	PCBS	METALS, TOTAL	METALS, DISSOLVED	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER	☐ 8260	☐ 824	☐ CLP	☐ 8270	☐ 825	☐ 601/602	☐ 8081	☐ 808	☐ 8082	☐ 608	[List in comments below]			[List in comments below]			1									20							
NUMBER OF CONTAINERS	GC/MS VOA'S														GC/MS SVOA'S	GC VOA'S	PESTICIDES	PCBS	METALS, TOTAL	METALS, DISSOLVED	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER																																		
	☐ 8260														☐ 824	☐ CLP	☐ 8270	☐ 825	☐ 601/602	☐ 8081	☐ 808	☐ 8082	☐ 608	[List in comments below]			[List in comments below]																																	
	1									20																																																		
Phone # 617-589-6102		E-mail Raymond.Cadorette@CBI.com		PRESERVATIVE																																																								
Sampler's Signature 		Sampler's Printed Name Dale Dailey		PRESERVATIVE																																																								
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME		MATRIX	ANALYSIS REQUESTED												REMARKS/ ALTERNATE DESCRIPTION																																											
AP26-00		4/16/14	930	GW	5	3																																																						
AP31-00			1030		5	3																																																						
AP32-00			1130		5	3																																																						
OB19-00			1315		5	3																																																						
OB25-BR			1250		5	3																																																						
OB26-00			1440		3	3																																																						
OB26-BR			1415		3	3																																																						
OB28-BR		✓	1350		3	3																																																						
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SPECIAL INSTRUCTIONS/COMMENTS	TURNAROUND REQUIREMENTS	REPORT REQUIREMENTS	INVOICE INFORMATION
Metals = Field Filtered Site specific VOC list. Massachusetts CAM analyses reporting & QC. Please email GISKey formatted EDD & PDF of report to: Catherine.Joe@CBI.com.	RUSH (SURCHARGES APPLY) ___ 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day <input checked="" type="checkbox"/> Standard	___ I. Results Only ___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required) ___ III. Results + QC and Calibration Summaries ___ IV. Data Validation Report with Raw Data	PO #: 873489 BILL TO: CB&I
See OAPP <input type="checkbox"/>	REQUESTED REPORT DATE _____	Edata <input checked="" type="checkbox"/> Yes ___ No	<b>R1402779     7 Y</b> CB&I Environmental & Infrastructure Varian Beverly

STATE WHERE SAMPLES WERE COLLECTED:					
RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Date/Time 4/17/14 13:30	Date/Time 4/17/14 13:30	Date/Time	Date/Time 4/18/14 0748	Date/Time	Date/Time

Distribution: White - Lab Copy; Yellow - Return To Originator



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

1 Mustard Street, Suite 250, Rochester, NY 14609 | 585.288.5380 | 800.695.7222 | 585.288.8475 (fax) PAGE 1 OF 1

Project Name Varian Beverly		Project Number 150148-05000000		ANALYSIS REQUESTED (Include Method Number and Container Preservative)												
Project Manager Raymond Cadorette		Report CC		PRESERVATIVE <u>1</u> <u>20</u>												
Company/Address CB&I Environmental, Inc. 150 Royal Street Canton, MA 02021				NUMBER OF CONTAINERS	GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> CLP GC/MS SVOA'S <input type="checkbox"/> 8270 <input type="checkbox"/> 625 GC VOA'S <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCB'S <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED Fe, Mn, Chloride Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____											
Phone # 617-589-6102		E-mail Raymond.Cadorette@CBI.com														
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name Raymond Cadorette														
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID														
AP20-00 (60')				9/12/11		930		GA		5		3				
AP21-00 (30')						1030				5		3				
AP22-00 (30')						1130				5		3				
CR14-DC (56')						1315				5		3				
AP25-BD (86')						1230				5		3				
DR34-DR (59')						1440				3		3				
AP26-BD (90')						1415				3		3				
DR34-BD (89')				✓		1350				3		3				

SPECIAL INSTRUCTIONS/COMMENTS Metals = Field Filtered Site specific VOC list. Massachusetts CAM analysis reporting & QC. Please email GISKey formatted EDD & PPF of report to: Catherine.Joe@CBI.com.			TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day 2 day 3 day 4 day 5 day <input checked="" type="checkbox"/> Standard			REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Edata <input checked="" type="checkbox"/> Yes			INVOICE INFORMATION PO #: 870489 BILL TO: CB&I		
See QAPP <input type="checkbox"/>			REQUESTED REPORT DATE			<b>R1402779</b> CB&I Environmental & Infrastructure Varian Beverly <span style="font-size: 2em; font-weight: bold;">7 Y</span>					
STATE WHERE SAMPLES WERE COLLECTED:											

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	Signature:	Signature:	Signature:	Signature:
Printed Name: <i>[Name]</i>	Printed Name:	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:	Firm:	Firm:
Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:



# Cooler Receipt and Preservation Check Form

Project/Client CB&I Folder Number R14-779

Cooler received on 4/18/14 by: SJS COURIER: ALS UPS ~~FEDEX~~ VELOCITY CLIENT

1. Were custody seals on outside of cooler?  YES NO
2. Were custody papers properly filled out (ink, signed, etc.)?  YES NO
3. Did all bottles arrive in good condition (unbroken)?  YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES  NO N/A
5. Were Ice or Ice packs present?  YES NO
6. Where did the bottles originate? ALS/ROE, CLIENT
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
8. Temperature of cooler(s) upon receipt: 2.8

Is the temperature within 0° - 6° C?:  Y N Y N Y N Y N Y N  
If No, Explain Below Date/Time Temperatures Taken: 4/18/14 0800

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location now by SJS on 4/18/14 at 0800  
5035 samples placed in storage location by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: JW 4/18/14

Cooler Breakdown: Date: 4/18/14 Time: 1732 by: oh

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)?  YES NO
2. Did all bottle labels and tags agree with custody papers?  YES NO
3. Were correct containers used for the tests indicated?  YES NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	YES NO		Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK
		YES	NO							
≥12	NaOH									No = Samples were preserved at lab as listed
≤2	HNO <sub>3</sub>	✓		Client label						
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						PM OK to Adjust:
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-							
	Zn Aceta	-	-							
	HCl	*	*	Client label						

\*Not to be tested before analysis - pH tested and recorded by VOAs or GenChem on a separate worksheet

Bottle lot numbers: Client label.

Other Comments:

PC Secondary Review: JW 4/28/14 significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150148.05  
**Prepared By:** Dale Dailey **Date :** 6/4/2013  
**Matrix:** Groundwater  
**Analyte Group :** Volatile Organics **Analytical Method :** SW-846 8260C  
Metals 6010 C  
Chloride SM 4500-CL-E  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1402843  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/21/14	SW-846 8260C	14 days	10 days	4/28-4/30/14
4/21/14	6010 C	180 Days	180 Days	4/26, 4/28/14
4/21/14	SM 4500-CL-E	28 Days	28 Days	4/30/2014

**Sample temperature within QC limits:** No, 9.0 C

### Surrogate Recovery

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

### MS/MSD

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

### Laboratory Control Samples

Are all laboratory control sample recoveries within the QC limits ? Yes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :** NA  
**Trip Blank ID :** NA

**Method Blank:** SW-846 8260C 4/28, 4/29, 4/30/14  
 6010 C 4/28/2014  
 SM 4500-CL-E 4/30/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

### Notes:

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. OB35 DO (47), OB37 DO (46), and BR-7 Zone 3 was re-analyzed at larger dilutions to bring the target analytes within the calibration range of the method. Both dilutions were reported with analytes over the range flagged with an "E" and the diluted analytes flagged with a "D"

The initial results and analysis did not coincide well for cis-1,2-Dichloroethene. The data and sample bottles were checked and verified. No extra sample remained to reanalyze. The second run was reported since it coincides with previous data and the first run had QC issues

All LCS and LCSD recoveries were within QC limits.

**Reviewed By:** Pernilla Haley 10/15/14





May 02, 2014

Service Request No: R1402843

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150148-05000000**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on April 22, 2014. For your reference, these analyses have been assigned our service request number **R1402843**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

Janice Jaeger  
Client Services Manager

Page 1 of 63

CC: Pernilla Haley

## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Water

**Service Request No.:** R1402843  
**Project Number:** 150148-05000000  
**Date Received:** 04/22/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Water samples were collected on 04/21/14 and received at ALS in good condition at a cooler temperature of 9.0 °C as noted on the cooler receipt and preservation check form. The client was notified of the out of temperature cooler and the samples were analyzed. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #.

### Volatile Organics

Twenty nine water samples were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples OB35 DO (47), OB37 DO (46) and BR-7 Zone 3 were re-analyzed at larger dilutions to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D". Please note: The initial result and reanalysis did not coincide well for cis-1,2-Dichloroethene. The data and sample bottles were checked and verified. No extra sample remained to reanalyze.

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Surrogate Standard recoveries were within QC limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCS/D) recoveries were within QC limits.

All samples were analyzed within the required holding time of 14 days.

### Inorganic Analyses

Three water samples were analyzed for Chloride by SM3400-CI-E and Soluble Iron and Manganese by method 6010C. Soluble Metals were filtered in the field.

The initial and continuing calibration criteria were met for all analytes.

All Blank Spike (LCS) recoveries were within QC limits.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150148

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1402843-001-029

 Matrices: Groundwater/Surface Water  Soil/Sediment  Drinking Water  Air  Other: 
**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <sup>1</sup>
----------	---	---	--

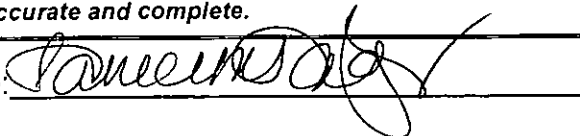
**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:



 Position: Client Services  
Manager

 Printed Name: Janice Jaeger

 Date: 05/02/14


## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402843

<u>Lab ID</u>	<u>Client ID</u>
R1402843-001	TB-6
R1402843-002	EB-5
R1402843-003	OB21-DO (78')
R1402843-004	OB21-BR (98')
R1402843-005	APBIO-01 (77')
R1402843-006	STRM-A-SCDS
R1402843-007	OB20-DO (74')
R1402843-008	OB20-BR (94')
R1402843-009	OB20-S (10')
R1402843-010	P-20R (10')
R1402843-011	P-19A (10')
R1402843-012	P-11R (9')
R1402843-013	OB19-S (32')
R1402843-014	OB32-DO (57')
R1402843-015	AP-14-S (29')
R1402843-016	EB-6
R1402843-017	OB35 DO (47)
R1402843-018	OB37 DO (46)
R1402843-019	OB36 DO (51)
R1402843-020	BR-1 ZONE 1
R1402843-021	BR-1 ZONE 2
R1402843-022	BR-1 ZONE 3
R1402843-023	BR-3 ZONE 1
R1402843-024	BR-3 ZONE 2
R1402843-025	BR-3 ZONE 3
R1402843-026	BR-7 ZONE 1
R1402843-027	BR-7 ZONE 2
R1402843-028	BR-7 ZONE 3
R1402843-029	OB 44S (17')



## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of:* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

*Oscar C. Pascual*

*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: **01 JUL 2013**

M-NY032      **ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY**

**NON POTABLE WATER (CHEMISTRY)**      Effective Date      **01 JUL 2013**      Expiration Date      **30 JUN 2014**

<u>Analytes</u>	<u>Methods</u>
ALUMINUM	EPA 200.7
ANTIMONY	EPA 200.7
ANTIMONY	EPA 200.8
ARSENIC	EPA 200.7
ARSENIC	EPA 200.8
BERYLLIUM	EPA 200.7
BERYLLIUM	EPA 200.8
CADMIUM	EPA 200.7
CADMIUM	EPA 200.8
CHROMIUM	EPA 200.7
CHROMIUM	EPA 200.8
COBALT	EPA 200.7
COBALT	EPA 200.8
COPPER	EPA 200.7
COPPER	EPA 200.8
IRON	EPA 200.7
LEAD	EPA 200.7
LEAD	EPA 200.8
MANGANESE	EPA 200.7
MANGANESE	EPA 200.8
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
MOLYBDENUM	EPA 200.8
NICKEL	EPA 200.7
NICKEL	EPA 200.8
SELENIUM	EPA 200.7
SELENIUM	EPA 200.8
SILVER	EPA 200.7
SILVER	EPA 200.8
THALLIUM	EPA 200.7
THALLIUM	EPA 200.8
VANADIUM	EPA 200.7
VANADIUM	EPA 200.8
ZINC	EPA 200.7
ZINC	EPA 200.8
SPECIFIC CONDUCTIVITY	EPA 120.1
TOTAL DISSOLVED SOLIDS	SM 2540C
HARDNESS (CaCO3), TOTAL	SM 2340C
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
ALKALINITY, TOTAL	SM 2320B

June 25, 2013

\*= Provisional Certification

Page 1 of 2

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COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032      ALS ENVIRONMENTAL ROCHESTER  
                  ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014

<u>Analytes</u>	<u>Methods</u>
CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 365.1
PHOSPHORUS, TOTAL	EPA 365.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 824
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608





# INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

## Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	3010A
200.8	ILM05.3
6010C	3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

## Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3010A
6010 SPLP (1312) extract	3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1100  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 12:56

Sample Name: TB-6  
 Lab Code: R1402843-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F7999.D\

Analysis Lot: 390021  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	87	70-130	4/28/14 12:56	
Dibromofluoromethane	99	70-130	4/28/14 12:56	
Toluene-d8	95	70-130	4/28/14 12:56	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 0730  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 13:27

Sample Name: EB-5  
 Lab Code: R1402843-002

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8000.D\

Analysis Lot: 390021  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	70-130	4/28/14 13:27	
Dibromofluoromethane	101	70-130	4/28/14 13:27	
Toluene-d8	98	70-130	4/28/14 13:27	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 0830  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 13:57

Sample Name: OB21-DO (78')  
 Lab Code: R1402843-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa10\data\042814\F8001.D\

Analysis Lot: 390021  
 Instrument Name: R-MS-10  
 Dilution Factor: 10

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	20 U	20	
79-34-5	1,1,2,2-Tetrachloroethane	20 U	20	
79-00-5	1,1,2-Trichloroethane	20 U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20 U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	20 U	20	
107-06-2	1,2-Dichloroethane	20 U	20	
78-87-5	1,2-Dichloropropane	20 U	20	
67-64-1	Acetone	100 U	100	
75-27-4	Bromodichloromethane	20 U	20	
75-25-2	Bromoform	20 U	20	
74-83-9	Bromomethane	20 U	20	
56-23-5	Carbon Tetrachloride	20 U	20	
108-90-7	Chlorobenzene	20 U	20	
75-00-3	Chloroethane	20 U	20	
67-66-3	Chloroform	20 U	20	
74-87-3	Chloromethane	20 U	20	
124-48-1	Dibromochloromethane	20 U	20	
75-09-2	Methylene Chloride	20 U	20	
127-18-4	Tetrachloroethene (PCE)	260	20	
79-01-6	Trichloroethene (TCE)	970	20	
75-69-4	Trichlorofluoromethane (CFC 11)	20 U	20	
75-01-4	Vinyl Chloride	20 U	20	
156-59-2	cis-1,2-Dichloroethene	320	20	
10061-01-5	cis-1,3-Dichloropropene	20 U	20	
156-60-5	trans-1,2-Dichloroethene	20 U	20	
10061-02-6	trans-1,3-Dichloropropene	20 U	20	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	89	70-130	4/28/14 13:57	
Dibromofluoromethane	99	70-130	4/28/14 13:57	
Toluene-d8	97	70-130	4/28/14 13:57	

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly/150148-05000000  
**Sample Matrix:** Water

**Service Request:** R1402843  
**Date Collected:** 4/21/14 0930  
**Date Received:** 4/22/14  
**Date Analyzed:** 4/28/14 14:28

**Sample Name:** OB21-BR (98')  
**Lab Code:** R1402843-004

**Units:** µg/L  
**Basis:** NA

**Volatile Organic Compounds by GC/MS**

**Analytical Method:** 8260C  
**Data File Name:** I:\ACQUDATA\msvoa10\data\042814\F8002.D\

**Analysis Lot:** 390021  
**Instrument Name:** R-MS-10  
**Dilution Factor:** 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10	U	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	50	U	50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	10	U	10	
79-01-6	Trichloroethene (TCE)	73		10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	27		10	
156-59-2	cis-1,2-Dichloroethene	860		10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	89	70-130	4/28/14 14:28	
Dibromofluoromethane	97	70-130	4/28/14 14:28	
Toluene-d8	96	70-130	4/28/14 14:28	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1015  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 17:37

Sample Name: APB10-01 (77)  
 Lab Code: R1402843-005

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa10\data\042914\F8051.D

Analysis Lot: 390267  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	15		10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	50	U	50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	10	U	10	
79-01-6	Trichloroethene (TCE)	140		10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	150		10	
156-59-2	cis-1,2-Dichloroethene	870		10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	70-130	4/29/14 17:37	
Dibromofluoromethane	97	70-130	4/29/14 17:37	
Toluene-d8	97	70-130	4/29/14 17:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1030  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 15:29

Sample Name: STRM-A-SCDS  
 Lab Code: R1402843-006

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8004.D\

Analysis Lot: 390021  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0		2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	3.8		2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	88	70-130	4/28/14 15:29	
Dibromofluoromethane	101	70-130	4/28/14 15:29	
Toluene-d8	94	70-130	4/28/14 15:29	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1100  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 15:59

Sample Name: OB20-DO (74')  
 Lab Code: R1402843-007

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8005.D\

Analysis Lot: 390021  
 Instrument Name: R-MS-10  
 Dilution Factor: 2

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	4.0	U	4.0	
79-34-5	1,1,2,2-Tetrachloroethane	4.0	U	4.0	
79-00-5	1,1,2-Trichloroethane	4.0	U	4.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4.0	U	4.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	4.0	U	4.0	
107-06-2	1,2-Dichloroethane	4.0	U	4.0	
78-87-5	1,2-Dichloropropane	4.0	U	4.0	
67-64-1	Acetone	20	U	20	
75-27-4	Bromodichloromethane	4.0	U	4.0	
75-25-2	Bromoform	4.0	U	4.0	
74-83-9	Bromomethane	4.0	U	4.0	
56-23-5	Carbon Tetrachloride	4.0	U	4.0	
108-90-7	Chlorobenzene	4.0	U	4.0	
75-00-3	Chloroethane	4.0	U	4.0	
67-66-3	Chloroform	4.0	U	4.0	
74-87-3	Chloromethane	4.0	U	4.0	
124-48-1	Dibromochloromethane	4.0	U	4.0	
75-09-2	Methylene Chloride	4.0	U	4.0	
127-18-4	Tetrachloroethene (PCE)	4.0	U	4.0	
79-01-6	Trichloroethene (TCE)	4.0	U	4.0	
75-69-4	Trichlorofluoromethane (CFC 11)	4.0	U	4.0	
75-01-4	Vinyl Chloride	22		4.0	
156-59-2	cis-1,2-Dichloroethene	190		4.0	
10061-01-5	cis-1,3-Dichloropropene	4.0	U	4.0	
156-60-5	trans-1,2-Dichloroethene	4.0	U	4.0	
10061-02-6	trans-1,3-Dichloropropene	4.0	U	4.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	88	70-130	4/28/14 15:59	
Dibromofluoromethane	100	70-130	4/28/14 15:59	
Toluene-d8	96	70-130	4/28/14 15:59	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1130  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 16:29

Sample Name: OB20-BR (94')  
 Lab Code: R1402843-008

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8006.D\

Analysis Lot: 390021  
 Instrument Name: R-MS-10  
 Dilution Factor: 10

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	20	U	20	
79-34-5	1,1,2,2-Tetrachloroethane	20	U	20	
79-00-5	1,1,2-Trichloroethane	20	U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20	U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	20	U	20	
107-06-2	1,2-Dichloroethane	20	U	20	
78-87-5	1,2-Dichloropropane	20	U	20	
67-64-1	Acetone	100	U	100	
75-27-4	Bromodichloromethane	20	U	20	
75-25-2	Bromoform	20	U	20	
74-83-9	Bromomethane	20	U	20	
56-23-5	Carbon Tetrachloride	20	U	20	
108-90-7	Chlorobenzene	20	U	20	
75-00-3	Chloroethane	20	U	20	
67-66-3	Chloroform	20	U	20	
74-87-3	Chloromethane	20	U	20	
124-48-1	Dibromochloromethane	20	U	20	
75-09-2	Methylene Chloride	20	U	20	
127-18-4	Tetrachloroethene (PCE)	20	U	20	
79-01-6	Trichloroethene (TCE)	100		20	
75-69-4	Trichlorofluoromethane (CFC 11)	20	U	20	
75-01-4	Vinyl Chloride	20	U	20	
156-59-2	cis-1,2-Dichloroethene	980		20	
10061-01-5	cis-1,3-Dichloropropene	20	U	20	
156-60-5	trans-1,2-Dichloroethene	20	U	20	
10061-02-6	trans-1,3-Dichloropropene	20	U	20	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	70-130	4/28/14 16:29	
Dibromofluoromethane	101	70-130	4/28/14 16:29	
Toluene-d8	98	70-130	4/28/14 16:29	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1145  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 17:00

Sample Name: OB20-S (10')  
 Lab Code: R1402843-009

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8007.D\

Analysis Lot: 390021  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	70-130	4/28/14 17:00	
Dibromofluoromethane	99	70-130	4/28/14 17:00	
Toluene-d8	98	70-130	4/28/14 17:00	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1200  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 17:30

Sample Name: P-20R (10')  
 Lab Code: R1402843-010

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8008.D\

Analysis Lot: 390021  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	3.8		2.0	
79-01-6	Trichloroethene (TCE)	9.0		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	89	70-130	4/28/14 17:30	
Dibromofluoromethane	100	70-130	4/28/14 17:30	
Toluene-d8	97	70-130	4/28/14 17:30	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1230  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 18:00

Sample Name: P-19A (10')  
 Lab Code: R1402843-011

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8009.D\

Analysis Lot: 390021  
 Instrument Name: R-MS-10  
 Dilution Factor: 2

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	4.0	U	4.0	
79-34-5	1,1,2,2-Tetrachloroethane	4.0	U	4.0	
79-00-5	1,1,2-Trichloroethane	4.0	U	4.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4.0	U	4.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	4.0	U	4.0	
107-06-2	1,2-Dichloroethane	4.0	U	4.0	
78-87-5	1,2-Dichloropropane	4.0	U	4.0	
67-64-1	Acetone	20	U	20	
75-27-4	Bromodichloromethane	4.0	U	4.0	
75-25-2	Bromoform	4.0	U	4.0	
74-83-9	Bromomethane	4.0	U	4.0	
56-23-5	Carbon Tetrachloride	4.0	U	4.0	
108-90-7	Chlorobenzene	4.0	U	4.0	
75-00-3	Chloroethane	4.0	U	4.0	
67-66-3	Chloroform	4.0	U	4.0	
74-87-3	Chloromethane	4.0	U	4.0	
124-48-1	Dibromochloromethane	4.0	U	4.0	
75-09-2	Methylene Chloride	4.0	U	4.0	
127-18-4	Tetrachloroethene (PCE)	4.8		4.0	
79-01-6	Trichloroethene (TCE)	27		4.0	
75-69-4	Trichlorofluoromethane (CFC 11)	4.0	U	4.0	
75-01-4	Vinyl Chloride	4.0	U	4.0	
156-59-2	cis-1,2-Dichloroethene	200		4.0	
10061-01-5	cis-1,3-Dichloropropene	4.0	U	4.0	
156-60-5	trans-1,2-Dichloroethene	4.0	U	4.0	
10061-02-6	trans-1,3-Dichloropropene	4.0	U	4.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	88	70-130	4/28/14 18:00	
Dibromofluoromethane	101	70-130	4/28/14 18:00	
Toluene-d8	97	70-130	4/28/14 18:00	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1300  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 18:31

Sample Name: P-11R (9')  
 Lab Code: R1402843-012

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8010.D\

Analysis Lot: 390021  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0 U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	89	70-130	4/28/14 18:31	
Dibromofluoromethane	100	70-130	4/28/14 18:31	
Toluene-d8	97	70-130	4/28/14 18:31	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1330  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 05:10

Sample Name: OB19-S (32')  
 Lab Code: R1402843-013

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8031.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	14		2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	70-130	4/29/14 05:10	
Dibromofluoromethane	101	70-130	4/29/14 05:10	
Toluene-d8	97	70-130	4/29/14 05:10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: OB32-DO (57')  
Lab Code: R1402843-014

Service Request: R1402843  
Date Collected: 4/21/14 1345  
Date Received: 4/22/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	107	mg/L	2.0	2	NA	4/30/14 16:51	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: OB32-DO (57')  
 Lab Code: R1402843-014

Service Request: R1402843  
 Date Collected: 4/21/14 1345  
 Date Received: 4/22/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100 U	µg/L	100	1	4/24/14	4/28/14 20:01	
Manganese, Dissolved	6010C	60000	µg/L	1000	100	4/24/14	4/26/14 00:58	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1345  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 05:41

Sample Name: OB32-DO (57')  
 Lab Code: R1402843-014

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8032.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	26		2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	37		2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	14		2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	63		2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	70-130	4/29/14 05:41	
Dibromofluoromethane	103	70-130	4/29/14 05:41	
Toluene-d8	98	70-130	4/29/14 05:41	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1400  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 06:11

Sample Name: AP-14-S (29')  
 Lab Code: R1402843-015

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa10\data\042814\F8033.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	140		2.0	
79-01-6	Trichloroethene (TCE)	28		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	70-130	4/29/14 06:11	
Dibromofluoromethane	101	70-130	4/29/14 06:11	
Toluene-d8	97	70-130	4/29/14 06:11	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1410  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 12:26

Sample Name: EB-6  
 Lab Code: R1402843-016

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa10\data\042814\F7998.D\

Analysis Lot: 390021  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	70-130	4/28/14 12:26	
Dibromofluoromethane	103	70-130	4/28/14 12:26	
Toluene-d8	100	70-130	4/28/14 12:26	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: OB35 DO (47)  
Lab Code: R1402843-017

Service Request: R1402843  
Date Collected: 4/21/14 1400  
Date Received: 4/22/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	96.1	mg/L	1.0	1	NA	4/30/14 16:46	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: OB35 DO (47)  
Lab Code: R1402843-017

Service Request: R1402843  
Date Collected: 4/21/14 1400  
Date Received: 4/22/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	4/24/14	4/28/14 20:07	
Manganese, Dissolved	6010C	6200		µg/L	1000	100	4/24/14	4/26/14 01:04	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1400  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 22:34

Sample Name: OB35 DO (47)  
 Lab Code: R1402843-017

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8018.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 100

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	200	U	200	
79-34-5	1,1,2,2-Tetrachloroethane	200	U	200	
79-00-5	1,1,2-Trichloroethane	200	U	200	
75-34-3	1,1-Dichloroethane (1,1-DCA)	200	U	200	
75-35-4	1,1-Dichloroethene (1,1-DCE)	200	U	200	
107-06-2	1,2-Dichloroethane	200	U	200	
78-87-5	1,2-Dichloropropane	200	U	200	
67-64-1	Acetone	1000	U	1000	
75-27-4	Bromodichloromethane	200	U	200	
75-25-2	Bromoform	200	U	200	
74-83-9	Bromomethane	200	U	200	
56-23-5	Carbon Tetrachloride	200	U	200	
108-90-7	Chlorobenzene	200	U	200	
75-00-3	Chloroethane	200	U	200	
67-66-3	Chloroform	200	U	200	
74-87-3	Chloromethane	200	U	200	
124-48-1	Dibromochloromethane	200	U	200	
75-09-2	Methylene Chloride	200	U	200	
127-18-4	Tetrachloroethene (PCE)	30000	E	200	
79-01-6	Trichloroethene (TCE)	5200		200	
75-69-4	Trichlorofluoromethane (CFC 11)	200	U	200	
75-01-4	Vinyl Chloride	200	U	200	
156-59-2	cis-1,2-Dichloroethene	940		200	
I0061-01-5	cis-1,3-Dichloropropene	200	U	200	
156-60-5	trans-1,2-Dichloroethene	200	U	200	
10061-02-6	trans-1,3-Dichloropropene	200	U	200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	88	70-130	4/28/14 22:34	
Dibromofluoromethane	99	70-130	4/28/14 22:34	
Toluene-d8	98	70-130	4/28/14 22:34	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1400  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 18:07

Sample Name: OB35 DO (47)  
 Lab Code: R1402843-017  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042914\F8052.D\

Analysis Lot: 390267  
 Instrument Name: R-MS-10  
 Dilution Factor: 250

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	500	U	500	
79-34-5	1,1,2,2-Tetrachloroethane	500	U	500	
79-00-5	1,1,2-Trichloroethane	500	U	500	
75-34-3	1,1-Dichloroethane (1,1-DCA)	500	U	500	
75-35-4	1,1-Dichloroethene (1,1-DCE)	500	U	500	
107-06-2	1,2-Dichloroethane	500	U	500	
78-87-5	1,2-Dichloropropane	500	U	500	
67-64-1	Acetone	2500	U	2500	
75-27-4	Bromodichloromethane	500	U	500	
75-25-2	Bromoform	500	U	500	
74-83-9	Bromomethane	500	U	500	
56-23-5	Carbon Tetrachloride	500	U	500	
108-90-7	Chlorobenzene	500	U	500	
75-00-3	Chloroethane	500	U	500	
67-66-3	Chloroform	500	U	500	
74-87-3	Chloromethane	500	U	500	
124-48-1	Dibromochloromethane	500	U	500	
75-09-2	Methylene Chloride	500	U	500	
127-18-4	Tetrachloroethene (PCE)	33000	D	500	
79-01-6	Trichloroethene (TCE)	5400	D	500	
75-69-4	Trichlorofluoromethane (CFC 11)	500	U	500	
75-01-4	Vinyl Chloride	500	U	500	
156-59-2	cis-1,2-Dichloroethene	950	D	500	
10061-01-5	cis-1,3-Dichloropropene	500	U	500	
156-60-5	trans-1,2-Dichloroethene	500	U	500	
10061-02-6	trans-1,3-Dichloropropene	500	U	500	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	70-130	4/29/14 18:07	
Dibromofluoromethane	94	70-130	4/29/14 18:07	
Toluene-d8	95	70-130	4/29/14 18:07	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1430  
 Date Received: 4/22/14  
 Date Analyzed: 4/28/14 23:05

Sample Name: OB37 DO (46)  
 Lab Code: R1402843-018

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8019.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	16	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	66	2.0	
79-01-6	Trichloroethene (TCE)	370 E	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0 U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	70-130	4/28/14 23:05	
Dibromofluoromethane	100	70-130	4/28/14 23:05	
Toluene-d8	97	70-130	4/28/14 23:05	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1430  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 18:38

Sample Name: OB37 DO (46)  
 Lab Code: R1402843-018  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042914\F8053.D\

Analysis Lot: 390267  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10 U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10 U	10	
79-00-5	1,1,2-Trichloroethane	10 U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10 U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10 U	10	
107-06-2	1,2-Dichloroethane	10 U	10	
78-87-5	1,2-Dichloropropane	10 U	10	
67-64-1	Acetone	50 U	50	
75-27-4	Bromodichloromethane	10 U	10	
75-25-2	Bromoform	10 U	10	
74-83-9	Bromomethane	10 U	10	
56-23-5	Carbon Tetrachloride	10 U	10	
108-90-7	Chlorobenzene	10 U	10	
75-00-3	Chloroethane	10 U	10	
67-66-3	Chloroform	10 U	10	
74-87-3	Chloromethane	10 U	10	
124-48-1	Dibromochloromethane	10 U	10	
75-09-2	Methylene Chloride	10 U	10	
127-18-4	Tetrachloroethene (PCE)	66 D	10	
79-01-6	Trichloroethene (TCE)	350 D	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10 U	10	
75-01-4	Vinyl Chloride	10 U	10	
156-59-2	cis-1,2-Dichloroethene	10 U	10	
10061-01-5	cis-1,3-Dichloropropene	10 U	10	
156-60-5	trans-1,2-Dichloroethene	10 U	10	
10061-02-6	trans-1,3-Dichloropropene	10 U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	70-130	4/29/14 18:38	
Dibromofluoromethane	96	70-130	4/29/14 18:38	
Toluene-d8	96	70-130	4/29/14 18:38	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water  
 Sample Name: OB36 DO (51)  
 Lab Code: R1402843-019

Service Request: R1402843  
 Date Collected: 4/21/14 1500  
 Date Received: 4/22/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	419	mg/L	5.0	5	NA	4/30/14 16:54	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: OB36 DO (51)  
Lab Code: R1402843-019

Service Request: R1402843  
Date Collected: 4/21/14 1500  
Date Received: 4/22/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	130	µg/L	100	1	4/24/14	4/28/14 20:14	
Manganese, Dissolved	6010C	2150000	µg/L	5000	500	4/24/14	4/28/14 16:45	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1500  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 19:08

Sample Name: OB36 DO (51)  
 Lab Code: R1402843-019

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa10\data\042914\F8054.D\

Analysis Lot: 390267  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	3.0		2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	24		10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.6		2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	70-130	4/29/14 19:08	
Dibromofluoromethane	96	70-130	4/29/14 19:08	
Toluene-d8	96	70-130	4/29/14 19:08	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly/150148-05000000  
**Sample Matrix:** Water

**Service Request:** R1402843  
**Date Collected:** 4/21/14 0800  
**Date Received:** 4/22/14  
**Date Analyzed:** 4/29/14 00:06

**Sample Name:** BR-1 ZONE 1  
**Lab Code:** R1402843-020

**Units:** µg/L  
**Basis:** NA

Volatile Organic Compounds by GC/MS

**Analytical Method:** 8260C  
**Data File Name:** I:\ACQUATA\msvoa10\data\042814\F8021.D\

**Analysis Lot:** 390026  
**Instrument Name:** R-MS-10  
**Dilution Factor:** 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	70-130	4/29/14 00:06	
Dibromofluoromethane	101	70-130	4/29/14 00:06	
Toluene-d8	97	70-130	4/29/14 00:06	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 0830  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 00:36

Sample Name: BR-1 ZONE 2  
 Lab Code: R1402843-021

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8022.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	89	70-130	4/29/14 00:36	
Dibromofluoromethane	100	70-130	4/29/14 00:36	
Toluene-d8	97	70-130	4/29/14 00:36	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 0900  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 01:06

Sample Name: BR-1 ZONE 3  
 Lab Code: R1402843-022

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8023.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	70-130	4/29/14 01:06	
Dibromofluoromethane	100	70-130	4/29/14 01:06	
Toluene-d8	95	70-130	4/29/14 01:06	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1015  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 01:37

Sample Name: BR-3 ZONE 1  
 Lab Code: R1402843-023

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8024.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	70-130	4/29/14 01:37	
Dibromofluoromethane	99	70-130	4/29/14 01:37	
Toluene-d8	97	70-130	4/29/14 01:37	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1045  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 02:07

Sample Name: BR-3 ZONE 2  
 Lab Code: R1402843-024

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8025.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	70-130	4/29/14 02:07	
Dibromofluoromethane	102	70-130	4/29/14 02:07	
Toluene-d8	97	70-130	4/29/14 02:07	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1115  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 02:38

Sample Name: BR-3 ZONE 3  
 Lab Code: R1402843-025

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8026.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0 U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	70-130	4/29/14 02:38	
Dibromofluoromethane	102	70-130	4/29/14 02:38	
Toluene-d8	98	70-130	4/29/14 02:38	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1200  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 03:08

Sample Name: BR-7 ZONE 1  
 Lab Code: R1402843-026

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8027.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0 U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed Q
4-Bromofluorobenzene	89	70-130	4/29/14 03:08
Dibromofluoromethane	101	70-130	4/29/14 03:08
Toluene-d8	98	70-130	4/29/14 03:08

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1230  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 03:39

Sample Name: BR-7 ZONE 2  
 Lab Code: R1402843-027

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8028.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	3.8	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	9.7	2.0	
156-59-2	cis-1,2-Dichloroethene	2.1	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed Q
4-Bromofluorobenzene	91	70-130	4/29/14 03:39
Dibromofluoromethane	101	70-130	4/29/14 03:39
Toluene-d8	98	70-130	4/29/14 03:39

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1300  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 19:39

Sample Name: BR-7 ZONE 3  
 Lab Code: R1402843-028

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042914\F8055.D\

Analysis Lot: 390267  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	6.5	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	3.7	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	20	2.0	
156-59-2	cis-1,2-Dichloroethene	310 E	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	3.8	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	70-130	4/29/14 19:39	
Dibromofluoromethane	99	70-130	4/29/14 19:39	
Toluene-d8	93	70-130	4/29/14 19:39	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1300  
 Date Received: 4/22/14  
 Date Analyzed: 4/30/14 15:16

Sample Name: BR-7 ZONE 3  
 Lab Code: R1402843-028  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\043014\F8093.D\

Analysis Lot: 390553  
 Instrument Name: R-MS-10  
 Dilution Factor: 2.5

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0 U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0 U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.1 D	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0 U	5.0	
107-06-2	1,2-Dichloroethane	5.0 U	5.0	
78-87-5	1,2-Dichloropropane	5.0 U	5.0	
67-64-1	Acetone	25 U	25	
75-27-4	Bromodichloromethane	5.0 U	5.0	
75-25-2	Bromoform	5.0 U	5.0	
74-83-9	Bromomethane	5.0 U	5.0	
56-23-5	Carbon Tetrachloride	5.0 U	5.0	
108-90-7	Chlorobenzene	5.0 U	5.0	
75-00-3	Chloroethane	5.0 U	5.0	
67-66-3	Chloroform	5.0 U	5.0	
74-87-3	Chloromethane	5.0 U	5.0	
124-48-1	Dibromochloromethane	5.0 U	5.0	
75-09-2	Methylene Chloride	5.0 U	5.0	
127-18-4	Tetrachloroethene (PCE)	5.0 U	5.0	
79-01-6	Trichloroethene (TCE)	5.0 U	5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0 U	5.0	
75-01-4	Vinyl Chloride	18 D	5.0	
156-59-2	cis-1,2-Dichloroethene	15 D	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0 U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0 U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0 U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	70-130	4/30/14 15:16	
Dibromofluoromethane	99	70-130	4/30/14 15:16	
Toluene-d8	95	70-130	4/30/14 15:16	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: 4/21/14 1330  
 Date Received: 4/22/14  
 Date Analyzed: 4/29/14 04:40

Sample Name: OB 44S (17')  
 Lab Code: R1402843-029

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8030.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 500

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1000	U	1000	
79-34-5	1,1,2,2-Tetrachloroethane	1000	U	1000	
79-00-5	1,1,2-Trichloroethane	1000	U	1000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1000	U	1000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1000	U	1000	
107-06-2	1,2-Dichloroethane	1000	U	1000	
78-87-5	1,2-Dichloropropane	1000	U	1000	
67-64-1	Acetone	5000	U	5000	
75-27-4	Bromodichloromethane	1000	U	1000	
75-25-2	Bromoform	1000	U	1000	
74-83-9	Bromomethane	1000	U	1000	
56-23-5	Carbon Tetrachloride	1000	U	1000	
108-90-7	Chlorobenzene	1000	U	1000	
75-00-3	Chloroethane	1000	U	1000	
67-66-3	Chloroform	1000	U	1000	
74-87-3	Chloromethane	1000	U	1000	
124-48-1	Dibromochloromethane	1000	U	1000	
75-09-2	Methylene Chloride	1000	U	1000	
127-18-4	Tetrachloroethene (PCE)	7200		1000	
79-01-6	Trichloroethene (TCE)	1500		1000	
75-69-4	Trichlorofluoromethane (CFC 11)	1000	U	1000	
75-01-4	Vinyl Chloride	1000	U	1000	
156-59-2	cis-1,2-Dichloroethene	59000		1000	
10061-01-5	cis-1,3-Dichloropropene	1000	U	1000	
156-60-5	trans-1,2-Dichloroethene	1000	U	1000	
10061-02-6	trans-1,3-Dichloropropene	1000	U	1000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	89	70-130	4/29/14 04:40	
Dibromofluoromethane	100	70-130	4/29/14 04:40	
Toluene-d8	96	70-130	4/29/14 04:40	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: Method Blank  
Lab Code: R1402843-MB

Service Request: R1402843  
Date Collected: NA  
Date Received: NA

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Chloride	SM 4500-Cl-E-1997(20)	1.0 U	mg/L	1.0	1	NA	4/30/14 16:38	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water  
Sample Name: Method Blank  
Lab Code: R1402843-MB

Service Request: R1402843  
Date Collected: NA  
Date Received: NA

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100 U	µg/L	100	1	4/24/14	4/28/14 17:43	
Manganese, Dissolved	6010C	10 U	µg/L	10	1	4/24/14	4/25/14 23:39	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/28/14 11:25

Sample Name: Method Blank  
 Lab Code: RQ1404369-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F7996.D\

Analysis Lot: 390021  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	70-130	4/28/14 11:25	
Dibromofluoromethane	100	70-130	4/28/14 11:25	
Toluene-d8	98	70-130	4/28/14 11:25	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/28/14 22:04

Sample Name: Method Blank  
 Lab Code: RQ1404383-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042814\F8017.D\

Analysis Lot: 390026  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	70-130	4/28/14 22:04	
Dibromofluoromethane	101	70-130	4/28/14 22:04	
Toluene-d8	96	70-130	4/28/14 22:04	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/29/14 12:32

Sample Name: Method Blank  
 Lab Code: RQ1404338-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\042914\F8041.D\

Analysis Lot: 390267  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	70-130	4/29/14 12:32	
Dibromofluoromethane	98	70-130	4/29/14 12:32	
Toluene-d8	96	70-130	4/29/14 12:32	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 4/30/14 14:15

Sample Name: Method Blank  
 Lab Code: RQ1404481-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\043014\F8091.D\

Analysis Lot: 390553  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	92	70-130	4/30/14 14:15	
Dibromofluoromethane	99	70-130	4/30/14 14:15	
Toluene-d8	97	70-130	4/30/14 14:15	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly/150148-05000000  
Sample Matrix: Water

Service Request: R1402843  
Date Analyzed: 4/30/14

Lab Control Sample Summary  
General Chemistry Parameters

Units: mg/L  
Basis: NA

Analyte Name	Method	Lab Control Sample R1402843-LCS			% Rec Limits
		Result	Spike Amount	% Rec	
Chloride	SM 4500-Cl-E-1997(20)	23.8	25.0	95	86 - 110

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Analyzed: 4/25/14 -  
 4/28/14

Lab Control Sample Summary  
 Inorganic Parameters

Units: µg/L  
 Basis: NA

Lab Control Sample  
 R1402843-LCS

Analyte Name	Method	Result	Spike		% Rec Limits
			Amount	% Rec	
Iron, Dissolved	6010C	1010	1000	101	80 - 120
Manganese, Dissolved	6010C	484	500	97	80 - 120

Results flagged with an asterisk (\*) indicate values outside control criteria.

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Analyzed: 4/28/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 390021

Analyte Name	Lab Control Sample RQ1404369-02			Duplicate Lab Control Sample RQ1404369-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	17.9	20.0	89	18.8	20.0	94	70 - 130	5	20
1,1,2,2-Tetrachloroethane	19.9	20.0	99	21.5	20.0	108	70 - 130	8	20
1,1,2-Trichloroethane	19.4	20.0	97	21.2	20.0	106	70 - 130	9	20
1,1-Dichloroethane (1,1-DCA)	19.2	20.0	96	20.2	20.0	101	70 - 130	5	20
1,1-Dichloroethene (1,1-DCE)	20.2	20.0	101	22.8	20.0	114	70 - 130	12	20
1,2-Dichloroethane	17.5	20.0	87	18.9	20.0	95	70 - 130	8	20
1,2-Dichloropropane	20.2	20.0	101	22.0	20.0	110	70 - 130	8	20
Acetone	23.5	20.0	118	20.7	20.0	104	40 - 160	13	20
Bromodichloromethane	19.2	20.0	96	20.3	20.0	101	70 - 130	5	20
Bromoform	19.6	20.0	98	21.6	20.0	108	70 - 130	10	20
Bromomethane	23.9	20.0	119	25.3	20.0	126	40 - 160	6	20
Carbon Tetrachloride	17.0	20.0	85	19.5	20.0	98	70 - 130	14	20
Chlorobenzene	19.1	20.0	95	20.7	20.0	104	70 - 130	8	20
Chloroethane	17.5	20.0	87	18.7	20.0	94	70 - 130	7	20
Chloroform	18.3	20.0	92	19.4	20.0	97	70 - 130	6	20
Chloromethane	20.0	20.0	100	21.4	20.0	107	40 - 160	7	20
Dibromochloromethane	20.0	20.0	100	21.8	20.0	109	70 - 130	9	20
Methylene Chloride	19.5	20.0	97	21.4	20.0	107	70 - 130	9	20
Tetrachloroethene (PCE)	19.3	20.0	96	21.2	20.0	106	70 - 130	9	20
Trichloroethene (TCE)	19.1	20.0	96	19.6	20.0	98	70 - 130	3	20
Trichlorofluoromethane (CFC 11)	17.3	20.0	87	18.6	20.0	93	70 - 130	7	20
Vinyl Chloride	19.7	20.0	99	20.3	20.0	101	70 - 130	3	20
cis-1,2-Dichloroethene	18.5	20.0	93	19.7	20.0	99	70 - 130	6	20
cis-1,3-Dichloropropene	19.0	20.0	95	20.7	20.0	103	70 - 130	8	20
trans-1,2-Dichloroethene	19.1	20.0	96	19.8	20.0	99	70 - 130	3	20
trans-1,3-Dichloropropene	19.0	20.0	95	20.6	20.0	103	70 - 130	8	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Analyzed: 4/28/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 390026

Analyte Name	Lab Control Sample RQ1404383-02			Duplicate Lab Control Sample RQ1404383-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	17.6	20.0	88	15.7	20.0	78	70 - 130	12	20
1,1,2,2-Tetrachloroethane	19.1	20.0	96	16.2	20.0	81	70 - 130	17	20
1,1,2-Trichloroethane	20.4	20.0	102	18.7	20.0	94	70 - 130	8	20
1,1-Dichloroethane (1,1-DCA)	19.4	20.0	97	17.7	20.0	89	70 - 130	9	20
1,1-Dichloroethene (1,1-DCE)	20.4	20.0	102	19.1	20.0	95	70 - 130	7	20
1,2-Dichloroethane	18.4	20.0	92	16.8	20.0	84	70 - 130	10	20
1,2-Dichloropropane	21.7	20.0	108	18.9	20.0	94	70 - 130	14	20
Acetone	26.1	20.0	130	22.2	20.0	111	40 - 160	16	20
Bromodichloromethane	19.7	20.0	99	18.0	20.0	90	70 - 130	9	20
Bromoform	21.0	20.0	105	18.3	20.0	91	70 - 130	14	20
Bromomethane	25.8	20.0	129	24.6	20.0	123	40 - 160	5	20
Carbon Tetrachloride	17.9	20.0	89	15.5	20.0	78	70 - 130	14	20
Chlorobenzene	19.8	20.0	99	17.8	20.0	89	70 - 130	11	20
Chloroethane	18.0	20.0	90	16.4	20.0	82	70 - 130	10	20
Chloroform	18.7	20.0	94	17.2	20.0	86	70 - 130	9	20
Chloromethane	20.6	20.0	103	18.9	20.0	94	40 - 160	9	20
Dibromochloromethane	21.4	20.0	107	19.1	20.0	95	70 - 130	11	20
Methylene Chloride	20.2	20.0	101	18.8	20.0	94	70 - 130	7	20
Tetrachloroethene (PCE)	18.7	20.0	94	16.6	20.0	83	70 - 130	12	20
Trichloroethene (TCE)	20.6	20.0	103	18.3	20.0	92	70 - 130	12	20
Trichlorofluoromethane (CFC 11)	16.5	20.0	82	14.8	20.0	74	70 - 130	11	20
Vinyl Chloride	19.6	20.0	98	17.5	20.0	87	70 - 130	12	20
cis-1,2-Dichloroethene	18.9	20.0	95	17.4	20.0	87	70 - 130	8	20
cis-1,3-Dichloropropene	19.5	20.0	98	17.9	20.0	89	70 - 130	9	20
trans-1,2-Dichloroethene	18.7	20.0	94	17.2	20.0	86	70 - 130	9	20
trans-1,3-Dichloropropene	19.2	20.0	96	17.7	20.0	88	70 - 130	8	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Analyzed: 4/29/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 390267

Analyte Name	Lab Control Sample RQ1404338-02			Duplicate Lab Control Sample RQ1404338-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	18.8	20.0	94	18.1	20.0	91	70 - 130	4	20
1,1,2,2-Tetrachloroethane	18.7	20.0	94	20.5	20.0	103	70 - 130	9	20
1,1,2-Trichloroethane	19.4	20.0	97	20.1	20.0	100	70 - 130	3	20
1,1-Dichloroethane (1,1-DCA)	19.5	20.0	97	20.6	20.0	103	70 - 130	6	20
1,1-Dichloroethene (1,1-DCE)	23.3	20.0	116	21.4	20.0	107	70 - 130	8	20
1,2-Dichloroethane	17.6	20.0	88	18.6	20.0	93	70 - 130	6	20
1,2-Dichloropropane	20.7	20.0	104	21.5	20.0	107	70 - 130	4	20
Acetone	19.5	20.0	97	20.4	20.0	102	40 - 160	5	20
Bromodichloromethane	19.4	20.0	97	20.0	20.0	100	70 - 130	3	20
Bromoform	19.0	20.0	95	20.8	20.0	104	70 - 130	9	20
Bromomethane	19.6	20.0	98	21.5	20.0	107	40 - 160	9	20
Carbon Tetrachloride	18.8	20.0	94	19.6	20.0	98	70 - 130	4	20
Chlorobenzene	19.9	20.0	100	20.4	20.0	102	70 - 130	3	20
Chloroethane	19.2	20.0	96	18.7	20.0	94	70 - 130	3	20
Chloroform	19.3	20.0	96	19.3	20.0	97	70 - 130	<1	20
Chloromethane	21.2	20.0	106	21.3	20.0	106	40 - 160	<1	20
Dibromochloromethane	20.8	20.0	104	21.7	20.0	109	70 - 130	4	20
Methylene Chloride	19.7	20.0	99	20.7	20.0	104	70 - 130	5	20
Tetrachloroethene (PCE)	20.2	20.0	101	20.6	20.0	103	70 - 130	2	20
Trichloroethene (TCE)	19.5	20.0	97	19.9	20.0	99	70 - 130	2	20
Trichlorofluoromethane (CFC 11)	18.2	20.0	91	17.9	20.0	90	70 - 130	1	20
Vinyl Chloride	19.8	20.0	99	19.8	20.0	99	70 - 130	<1	20
cis-1,2-Dichloroethene	18.8	20.0	94	19.7	20.0	98	70 - 130	4	20
cis-1,3-Dichloropropene	19.3	20.0	96	19.8	20.0	99	70 - 130	3	20
trans-1,2-Dichloroethene	19.9	20.0	100	19.8	20.0	99	70 - 130	<1	20
trans-1,3-Dichloropropene	18.4	20.0	92	19.4	20.0	97	70 - 130	5	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1402843  
 Date Analyzed: 4/30/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C


Units: µg/L  
 Basis: NA


Analysis Lot: 390553

Analyte Name	Lab Control Sample RQ1404481-02			Duplicate Lab Control Sample RQ1404481-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	19.1	20.0	96	20.2	20.0	101	70 - 130	5	20
1,1,2,2-Tetrachloroethane	19.8	20.0	99	21.0	20.0	105	70 - 130	6	20
1,1,2-Trichloroethane	19.8	20.0	99	20.7	20.0	103	70 - 130	5	20
1,1-Dichloroethane (1,1-DCA)	20.7	20.0	103	21.3	20.0	106	70 - 130	3	20
1,1-Dichloroethene (1,1-DCE)	23.6	20.0	118	23.5	20.0	118	70 - 130	<1	20
1,2-Dichloroethane	17.6	20.0	88	18.8	20.0	94	70 - 130	6	20
1,2-Dichloropropane	21.6	20.0	108	22.6	20.0	113	70 - 130	4	20
Acetone	18.6	20.0	93	21.3	20.0	107	40 - 160	14	20
Bromodichloromethane	20.3	20.0	101	21.1	20.0	105	70 - 130	4	20
Bromoform	19.9	20.0	99	20.9	20.0	105	70 - 130	5	20
Bromomethane	24.5	20.0	123	25.4	20.0	127	40 - 160	3	20
Carbon Tetrachloride	20.3	20.0	101	21.2	20.0	106	70 - 130	5	20
Chlorobenzene	20.6	20.0	103	21.8	20.0	109	70 - 130	6	20
Chloroethane	19.3	20.0	96	19.6	20.0	98	70 - 130	2	20
Chloroform	19.8	20.0	99	20.2	20.0	101	70 - 130	2	20
Chloromethane	21.4	20.0	107	22.3	20.0	111	40 - 160	4	20
Dibromochloromethane	20.2	20.0	101	21.7	20.0	108	70 - 130	7	20
Methylene Chloride	21.1	20.0	106	21.3	20.0	106	70 - 130	<1	20
Tetrachloroethene (PCE)	21.1	20.0	105	22.2	20.0	111	70 - 130	5	20
Trichloroethene (TCE)	20.7	20.0	103	21.7	20.0	108	70 - 130	5	20
Trichlorofluoromethane (CFC 11)	18.5	20.0	92	19.4	20.0	97	70 - 130	5	20
Vinyl Chloride	20.7	20.0	103	21.2	20.0	106	70 - 130	3	20
cis-1,2-Dichloroethene	20.2	20.0	101	20.3	20.0	101	70 - 130	<1	20
cis-1,3-Dichloropropene	20.0	20.0	100	21.0	20.0	105	70 - 130	5	20
trans-1,2-Dichloroethene	20.4	20.0	102	20.9	20.0	105	70 - 130	3	20
trans-1,3-Dichloropropene	19.1	20.0	96	20.5	20.0	102	70 - 130	7	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)														
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE														
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> 8270 <input type="checkbox"/> 625 GC/MS SVOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCBs <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) Chloride 20												Preservative Key	
150 Royall Street																	0. NONE	
Canton, MA 02021																	1. HCL	
Phone # 617-589-6102																	2. HNO <sub>3</sub>	
E-mail Raymond.Cadorette@CBI.com				3. H <sub>2</sub> SO <sub>4</sub>														
Sampler's Signature <i>Daniel C. Leahy</i>				4. NaOH														
Sampler's Printed Name <b>DANIEL C. LEAHY</b>				5. Zn. Acetate														
				6. MeOH														
				7. NaHSO <sub>4</sub>														
				8. Other _____														
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID		SAMPLING DATE TIME MATRIX								REMARKS/ ALTERNATE DESCRIPTION						
TB-6				4/21/14 1100 GW								CBY LAB						
RB-5				4/21/14 0730 GW														
OB21-DD (78')				4/21/14 0830														
OB21-BR (98')				4/21/14 0930														
APB10-01 (77')				4/21/14 1015														
STRM-A-SCDS				4/21/14 1030														
OB20-DD (74')				4/21/14 1100														
OB20-BR (94')				4/21/14 1130														
OB20-S (10')				4/21/14 1145														
P-20R (10')				4/21/14 1200														
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field Filtered Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD & PDF of report to: Catherine.Joe@CBI.com.				TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) ___ 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day <input checked="" type="checkbox"/> Standard				REPORT REQUIREMENTS ___ I. Results Only ___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required) ___ III. Results + QC and Calibration Summaries ___ IV. Data Validation Report with Re				INVOICE INFORMATION PO #: 873489 BILL TO: CB&I						
See QAPP <input type="checkbox"/>				REQUESTED REPORT DATE				Edate <input checked="" type="checkbox"/> Yes ___ No				R1402843 7 Y CB&I Environmental & Infrastructure Varian Beverly 						
STATE WHERE SAMPLES WERE COLLECTED:																		
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY				
<i>Daniel C. Leahy</i>		<i>Gregory J. ...</i>																
Printed Name <b>DAN LEAHY</b>		Printed Name <b>Gregory J. ...</b>																
Firm <b>CB&amp;I</b>		Firm <b>CB&amp;I</b>																
Date/Time 4/21/14 1430		Date/Time 4/22/14 0840																

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)													
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE													
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">                 GC/MS VOA's  <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP                  GC/MS SVOA's  <input type="checkbox"/> 8270 <input type="checkbox"/> 625                  GC VOA's  <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602                  PESTICIDES  <input type="checkbox"/> 8081 <input type="checkbox"/> 608                  PCB's  <input type="checkbox"/> 8082 <input type="checkbox"/> 608                  METALS TOTAL                  (List in comments below)                  METALS DISSOLVED                  (List in comments below)             </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">                 Chloride             </div> </div>												
150 Royall Street																	
Canton, MA 02021																	
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@CBI.com</b>		Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____													
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <b>DANIEL C. LEAHY</b>															
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID	SAMPLING DATE      TIME		MATRIX	REMARKS/ ALTERNATE DESCRIPTION											
P-19A (10')			4/21/14 1230		GW												
P-11R (9')			4/21/14 1300														
OB19-5 (32')			4/21/14 1330														
OB32-DO (57')			4/21/14 1345														
AP-4-5 (29')			4/21/14 1400														
EB-6			4/21/14 1410														
OB 35 DO (47)			4/21/14 1400														
OB 37 DO (46)			4/21/14 1430														
OB 36 DO (51)			4/21/14 1500														
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field filtered Site specific VOC list. Massachusetts CAM analyses reporting & QC. Please email GISKey formatted EDD & PDF of report to: Catherine.Joe @cbi.com.					TURNAROUND REQUIREMENTS				REPORT REQUIREMENTS				INVOICE INFORMATION				
					<input type="checkbox"/> RUSH (SURCHARGES APPLY) <input type="checkbox"/> 1 day <input type="checkbox"/> 2 day <input type="checkbox"/> 3 day <input type="checkbox"/> 4 day <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard				<input type="checkbox"/> I. Results Only <input type="checkbox"/> II. Results + QC Summaries (LCS, DUP, MSMSD as required) <input type="checkbox"/> III. Results + QC and Calibration Summaries <input type="checkbox"/> IV. Data Validation Report with				PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>				
See OAPP <input type="checkbox"/>					REQUESTED REPORT DATE				Edata <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				<b>R1402843</b> <b>7 Y</b> CB&I Environmental & Infrastructure Varian Beverly 				
STATE WHERE SAMPLES WERE COLLECTED:					RELINQUISHED BY				RECEIVED BY								
RELINQUISHED BY <i>[Signature]</i>		RECEIVED BY <i>[Signature]</i>		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY			
Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature		Signature		Signature		Signature		Signature		Signature			
Printed Name <b>DANIEL C. LEAHY</b>		Printed Name <b>Gregory [Name]</b>		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name			
Firm <b>CB&amp;I</b>		Firm <b>CB&amp;I</b>		Firm		Firm		Firm		Firm		Firm		Firm			
Date/Time 4/21/14 1430		Date/Time 4/22/14 0840		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time			

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)															
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE															
Company/Address <b>CB&amp;I Environmental, Inc.</b>		NUMBER OF CONTAINERS	GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLP GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 825 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCBs <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) <i>Chloride</i>	PRESERVATIVE															
150 Royall Street				PRESERVATIVE															
Canton, MA 02021				PRESERVATIVE															
Phone # 617-589-6102				E-mail Raymond.Cadorette@CBI.com		PRESERVATIVE													
Sampler's Signature		Sampler's Printed Name		PRESERVATIVE															
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME		MATRIX															
BR-1 Zone 1		4-21-14	0800	GW	3	3													
BR-1 Zone 2			0830		3	3													
BR-1 Zone 3			0900		3	3													
BR-3 Zone 1			1015		3	3													
BR-3 Zone 2			1045		3	3													
BR-3 Zone 3			1115		3	3													
BR-7 Zone 1			1200		3	3													
BR-7 Zone 2			1230		3	3													
BR-7 Zone 3			1300		3	3													
BR 445 (17)			1330		3	3													
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field filtered Site specific VOC list. Massachusetts CAM analyses reporting & QC. Please email GISKey formatted EDD & PDF of report to: Catherine.Joe@CBI.com.					TURNAROUND REQUIREMENTS ___ RUSH (SURCHARGES APPLY) ___ 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day <input checked="" type="checkbox"/> Standard					REPORT REQUIREMENTS ___ I. Results Only ___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required) ___ III. Results + QC and Calibration Summaries ___ IV. Data Validation Report with Raw Data					INVOICE INFORMATION PO #: 873489 BILL TO: CB&I				
See QAPP <input type="checkbox"/>					REQUESTED REPORT DATE					Edata <input checked="" type="checkbox"/> Yes ___ No					R1402843				
STATE WHERE SAMPLES WERE COLLECTED:																			
RELINQUISHED BY			RECEIVED BY			RELINQUISHED BY			RECEIVED BY			RELINQUISHED BY			RECEIVED BY				
<i>[Signature]</i>			<i>[Signature]</i>			<i>[Signature]</i>			<i>[Signature]</i>			<i>[Signature]</i>			<i>[Signature]</i>				
Printed Name Paul Kiedea			Printed Name [Signature]			Printed Name			Printed Name			Printed Name			Printed Name				
Firm 4-21-14 11:00			Firm 4/22/14 0840			Firm			Firm			Firm			Firm				
Date/Time			Date/Time			Date/Time			Date/Time			Date/Time			Date/Time				



# Cooler Receipt and Preservation Check Form

Project/Client CBT Folder Number R14-2843

Cooler received on 4/22/14 by: AD COURIER: ALS UPS FEDEX VELOCITY CLIENT

- Were custody seals on outside of cooler? YES NO
- Were custody papers properly filled out (ink, signed, etc.)? YES NO
- Did all bottles arrive in good condition (unbroken)? YES NO
- Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES NO N/A
- Were Ice or Ice packs present? YES NO
- Where did the bottles originate? ALS/ROC CLIENT
- Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
- Temperature of cooler(s) upon receipt: 9.0°

Is the temperature within 0° - 6° C?: Y N Y N Y N Y N Y N

If No, Explain Below Date/Time Temperatures Taken: 4/22/14 0851

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location R-002 by AD on 4/22/14 at 0852  
5035 samples placed in storage location \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: JMS 4/22/14

Cooler Breakdown: Date: 4/22/14 Time: 1412 by: AD

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were correct containers used for the tests indicated? YES NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent			Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK No = Samples were preserved at lab as listed PM OK to Adjust:
		YES	NO							
≥12	NaOH									Yes = All samples OK No = Samples were preserved at lab as listed PM OK to Adjust:
≤2	HNO <sub>3</sub>	<input checked="" type="checkbox"/>		<u>Client covered</u>						
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-							
	Zn Aceta	-	-							
	HCl	*	*	<u>4/12/20</u>	<u>3/15</u>					

Bottle lot numbers: 4-002-003, 112612-2V, Client covered

Other Comments: OB20-8 # bottles says (11), COC says (10)

PC Secondary Review: JMS 5/1/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 146898.11  
**Prepared By:** Dale Dailey **Date :** 6/2/2014  
**Matrix:** Air  
**Analyte Group :** Volatile Organics **Analytical Method :** EPA Method TO-15  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1402846  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/17/14	VOC TO-15		30 Days	4/24/14

**Sample temperature within QC limits:** NA - Air

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? Yes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :** NA

**Trip Blank ID :** NA

**Method Blank:** EPA TO-15 4/24/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

(1) All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method. All initial and continuing calibrations were compliant.

(2) various compounds for 32 TOZER-SV4 have been flagged with an "E" as being outside the calibration range of the instrument. The sample was repeated at dilutions and both sets of data have been reported out.

**Reviewed By:** Pernilla Haley 6/9/14





April 30, 2014

Service Request No: R1402846

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly Air Samples/146898**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on April 22, 2014. For your reference, these analyses have been assigned our service request number **R1402846**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba/ALS Environmental**

Janice Jaeger  
Client Services Manager

Page 1 of 19

CC: Pernilla Haley

## ALS Environmental

**Client:** CB&I.  
**Project:** Varian Beverly  
**Sample Matrix:** Air

**Service Request No.:** R1402846  
**Project No.:** 146898  
**Date Received:** 04/22/14

### CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS environmental. This report contains analytical results for samples designated for Tier II, MASS. CAM deliverables. When appropriate to the method, blank and LCS results have been reported with each analytical test.

#### Sample Receipt

CB&I air samples were collected on 04/17/14 and received at ALS in good condition as noted on the receipt and preservation check form. The samples were stored in the laboratory at room temperature prior to analysis. See the ALS case narrative for a cross-reference between Client ID and ALS Job #.

#### TO - 15 Air Analysis

Six air samples were analyzed for a site list of Volatile Organics by EPA method TO-15.

All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method.

Various compounds for 32 TOZER-SV4 have been flagged with an "E" as being outside the calibration range of the instrument. The sample was repeated at a dilution and both sets of data have been reported out.

All initial and continuing calibrations were compliant.

All surrogate standard recoveries were within QC limits.

The Method blanks were free of contamination.

The LCS recoveries were all within QC limits of 70 – 130 %.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 146898

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
 R1402846-001-006

 Matrices: Groundwater/Surface Water    Soil/Sediment    Drinking Water    Air  Other:

**CAM Protocol (check all that apply below):**

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B <input checked="" type="checkbox"/>
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X	Yes	No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X	Yes	No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X	Yes	No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X	Yes	No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes	No	Yes <input checked="" type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X	Yes	No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X	Yes	No <sup>1</sup>
----------	---	---	-----	-----------------

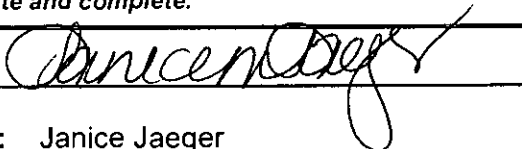
**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X	Yes	No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes	X	No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:



 Position: Client Services  
 Manager

 Printed Name: Janice Jaeger

 Date: 05/02/14
**00003**

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1402846

<u>Lab ID</u>	<u>Client ID</u>
R1402846-001	32 TOZER-SV3
R1402846-002	32 TOZER-SV5
R1402846-003	32 TOZER-SV4
R1402846-004	32 TOZER-1
R1402846-005	32 TOZER-2
R1402846-006	32 TOZER-3

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of:* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

A handwritten signature in cursive script, reading "Oscar P. Jacobo".

*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CaCO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014

<u>Analytes</u>	<u>Methods</u>
CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 365.1
PHOSPHORUS, TOTAL	EPA 365.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/146898  
 Sample Matrix: Air  
 Sample Name: 32 TOZER-SV3  
 Lab Code: R1402846-001

Service Request: R1402846  
 Date Collected: 4/17/14 1402  
 Date Received: 4/22/14

Analytical Method: TO-15

Date Analyzed: 4/24/14 1548  
 Canister Dilution Factor: 1.47

Initial Pressure (psig): -2.31      Final Pressure (psig): 3.51

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	2.4	37	37	14	14	U
156-60-5	trans-1,2-Dichloroethene	2.4	270	270	68	68	U
71-55-6	1,1,1-Trichloroethane (TCA)	2.4	370	370	67	67	U
156-59-2	cis-1,2-Dichloroethene	2.4	17000	270	4200	68	
79-01-6	Trichloroethene (TCE)	2.4	4500	37	840	6.8	
127-18-4	Tetrachloroethene (PCE)	2.4	14000	49	2000	7.2	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.4	280	280	68	68	U
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.4	270	270	68	68	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	92	70-130	4/24/14 1548	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/146898  
 Sample Matrix: Air  
 Sample Name: 32 TOZER-SV5  
 Lab Code: R1402846-002

Service Request: R1402846  
 Date Collected: 4/17/14 1413  
 Date Received: 4/22/14

Analytical Method: TO-15

Date Analyzed: 4/24/14 1640  
 Canister Dilution Factor: 1.52

Initial Pressure (psig): -2.70      Final Pressure (psig): 3.54

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.091	0.091	0.036	0.036	U
156-60-5	trans-1,2-Dichloroethene	1000	0.67	0.67	0.17	0.17	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.91	0.91	0.17	0.17	U
156-59-2	cis-1,2-Dichloroethene	1000	0.67	0.67	0.17	0.17	U
79-01-6	Trichloroethene (TCE)	1000	0.41	0.091	0.076	0.017	
127-18-4	Tetrachloroethene (PCE)	1000	1.4	0.12	0.21	0.018	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1000	0.68	0.68	0.17	0.17	U
75-35-4	1,1-Dichloroethene (1,1-DCE)	1000	0.67	0.67	0.17	0.17	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	96	70-130	4/24/14 1640	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/146898  
 Sample Matrix: Air  
 Sample Name: 32 TOZER-SV4  
 Lab Code: R1402846-003

Service Request: R1402846  
 Date Collected: 4/17/14 1503  
 Date Received: 4/22/14

Analytical Method: TO-15

Date Analyzed: 4/24/14 1731  
 Canister Dilution Factor: 1.39

Initial Pressure (psig): -1.52 Final Pressure (psig): 3.58

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	1.2	0.083	0.45	0.033	
156-60-5	trans-1,2-Dichloroethene	1000	0.61	0.61	0.15	0.15	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.83	0.83	0.15	0.15	U
156-59-2	cis-1,2-Dichloroethene	1000	45	0.61	11	0.15	
79-01-6	Trichloroethene (TCE)	1000	37	0.083	6.9	0.016	
127-18-4	Tetrachloroethene (PCE)	1000	150	0.11	23	0.016	E
75-34-3	1,1-Dichloroethane (1,1-DCA)	1000	0.80	0.63	0.20	0.15	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1000	0.61	0.61	0.15	0.15	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	101	70-130	4/24/14 1731	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/146898  
 Sample Matrix: Air  
 Sample Name: 32 TOZER-SV4  
 Lab Code: R1402846-003  
 Run Type: Dilution

Service Request: R1402846  
 Date Collected: 4/17/14 1503  
 Date Received: 4/22/14

Analytical Method: TO-15

Date Analyzed: 4/24/14 2316  
 Canister Dilution Factor: 1.39

Initial Pressure (psig): -1.52      Final Pressure (psig): 3.58

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	400	1.1	0.21	0.43	0.082	D
156-60-5	trans-1,2-Dichloroethene	400	1.5	1.5	0.39	0.39	U
71-55-6	1,1,1-Trichloroethane (TCA)	400	2.1	2.1	0.38	0.38	U
156-59-2	cis-1,2-Dichloroethene	400	45	1.5	11	0.39	D
79-01-6	Trichloroethene (TCE)	400	37	0.21	6.8	0.039	D
127-18-4	Tetrachloroethene (PCE)	400	160	0.28	23	0.041	D
75-34-3	1,1-Dichloroethane (1,1-DCA)	400	1.6	1.6	0.39	0.39	U
75-35-4	1,1-Dichloroethene (1,1-DCE)	400	1.5	1.5	0.39	0.39	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	100	70-130	4/24/14 2316	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/146898  
 Sample Matrix: Air  
 Sample Name: 32 TOZER-1  
 Lab Code: R1402846-004

Service Request: R1402846  
 Date Collected: 4/17/14 1610  
 Date Received: 4/22/14

Analytical Method: TO-15

Date Analyzed: 4/24/14 1909  
 Canister Dilution Factor: 1.55

Initial Pressure (psig): -2.80      Final Pressure (psig): 3.70

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.093	0.093	0.036	0.036	U
156-60-5	trans-1,2-Dichloroethene	1000	0.68	0.68	0.17	0.17	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.93	0.93	0.17	0.17	U
156-59-2	cis-1,2-Dichloroethene	1000	3.9	0.68	1.0	0.17	
79-01-6	Trichloroethene (TCE)	1000	1.9	0.093	0.36	0.017	
127-18-4	Tetrachloroethene (PCE)	1000	18	0.12	2.7	0.018	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1000	0.70	0.70	0.17	0.17	U
75-35-4	1,1-Dichloroethene (1,1-DCE)	1000	0.68	0.68	0.17	0.17	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	102	70-130	4/24/14 1909	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/146898  
 Sample Matrix: Air  
 Sample Name: 32 TOZER-2  
 Lab Code: R1402846-005

Service Request: R1402846  
 Date Collected: 4/17/14 1605  
 Date Received: 4/22/14

Analytical Method: TO-15

Date Analyzed: 4/24/14 2001  
 Canister Dilution Factor: 1.56

Initial Pressure (psig): -2.95      Final Pressure (psig): 3.58

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.094	0.094	0.037	0.037	U
156-60-5	trans-1,2-Dichloroethene	1000	0.69	0.69	0.17	0.17	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.94	0.94	0.17	0.17	U
156-59-2	cis-1,2-Dichloroethene	1000	1.7	0.69	0.43	0.17	
79-01-6	Trichloroethene (TCE)	1000	0.55	0.094	0.10	0.017	
127-18-4	Tetrachloroethene (PCE)	1000	3.8	0.12	0.56	0.018	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1000	0.70	0.70	0.17	0.17	U
75-35-4	1,1-Dichloroethene (1,1-DCE)	1000	0.69	0.69	0.17	0.17	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	98	70-130	4/24/14 2001	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/146898  
 Sample Matrix: Air  
 Sample Name: 32 TOZER-3  
 Lab Code: R1402846-006

Service Request: R1402846  
 Date Collected: 4/17/14 1600  
 Date Received: 4/22/14

Analytical Method: TO-15

Date Analyzed: 4/24/14 2052  
 Canister Dilution Factor: 1.44

Initial Pressure (psig): -2.06      Final Pressure (psig): 3.53

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.086	0.086	0.034	0.034	U
156-60-5	trans-1,2-Dichloroethene	1000	0.63	0.63	0.16	0.16	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.86	0.86	0.16	0.16	U
156-59-2	cis-1,2-Dichloroethene	1000	0.63	0.63	0.16	0.16	U
79-01-6	Trichloroethene (TCE)	1000	0.086	0.086	0.016	0.016	U
127-18-4	Tetrachloroethene (PCE)	1000	0.26	0.12	0.039	0.017	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1000	0.65	0.65	0.16	0.16	U
75-35-4	1,1-Dichloroethene (1,1-DCE)	1000	0.63	0.63	0.16	0.16	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	96	70-130	4/24/14 2052	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/146898  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1404185-01

Service Request: R1402846  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 4/24/14 1023

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.060	0.060	0.023	0.023	U
156-60-5	trans-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
156-59-2	cis-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.60	0.60	0.11	0.11	U
79-01-6	Trichloroethene (TCE)	1000	0.060	0.060	0.011	0.011	U
127-18-4	Tetrachloroethene (PCE)	1000	0.080	0.080	0.012	0.012	U
75-34-3	1,1-Dichloroethane (1,1-DCA)	1000	0.45	0.45	0.11	0.11	U
75-35-4	1,1-Dichloroethene (1,1-DCE)	1000	0.44	0.44	0.11	0.11	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	94	70-130	4/24/14 1023	



ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly Air Samples/146898  
 Sample Matrix: Air

Service Request: R1402846  
 Date Analyzed: 4/24/14

Lab Control Sample Summary  
 Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$   
 Basis: NA

Analysis Lot: 389799

Lab Control Sample  
 RQ1404185-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Vinyl Chloride	5.84	6.58	89	70 - 130
trans-1,2-Dichloroethene	9.77	10.4	94	70 - 130
1,1,1-Trichloroethane (TCA)	11.6	14.3	81	70 - 130
cis-1,2-Dichloroethene	9.88	10.4	95	70 - 130
Trichloroethene (TCE)	12.5	14.0	90	70 - 130
Tetrachloroethene (PCE)	16.1	18.0	90	70 - 130
1,1-Dichloroethane (1,1-DCA)	10.0	10.4	96	70 - 130
1,1-Dichloroethene (1,1-DCE)	9.03	10.3	88	70 - 130

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 | 585.288.5380 | 585.288.8475 (fax) | www.caslab.com

Requested Turnaround Time in Business Days from Receipt, please circle: 1 Day   2 Day   3 Day   4 Day <u>5 Day</u> <del>10 Day Standard</del> <u>60</u>		CAS Project #:			
Company Name: <u>CB&amp;I</u>		Project Name: <u>Varian</u>			
Address: <u>150 Royall Dr.</u>		CAS Contact:			
City, State, Zip: <u>Canton, MA 02021</u>		Project Number: <u>146898</u>			
Project Manager: <u>R. Cadorette</u>		P.O. #/Billing Information: <u>853583</u>			
Phone: <u>617-589-6102</u>	Fax:	Analysis Method and/or Analytes  10-15 Specific List (See Notes)			
Email (for result reporting): <u>raymond.cadorette@cbi.com</u>				Comments Specific Instructions	
Sampler (Print & Sign): <u>Date Daily</u> <i>[Signature]</i>					
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID	Flow Controller ID
<u>32 Tozer-SV3</u>		<u>4/17/14</u>	<u>14:02</u>	<u>SLL00178</u>	<u>FL00845</u>
<u>32 Tozer-SV5</u>		↓	<u>14:13</u>	<u>SLL00032</u>	<u>FL-861</u>
<u>32 Tozer-SV4</u>			<u>15:03</u>	<u>SLL0265</u>	<u>FL00862</u>
<u>32 Tozer-1</u>			<u>16:10</u>	<u>SLL0271</u>	<u>FL00848</u>
<u>32 Tozer-2</u>			<u>16:05</u>	<u>SLL00214</u>	<u>FL00857</u>
<u>32 Tozer-3</u>			<u>16:00</u>	<u>SLL00192</u>	<u>FL00852</u>
<b>R1402846</b> <b>7 Y</b> CB&I Environmental & Infrastructure Varian Beverly Air Samples					
What State were samples collected in: <u>MA</u>					
Report Tier Levels - please select: Tier I (Results/Default, if not specified) ___ Tier II (Results + QC) <u>X</u> Tier III (CLP Forms Only) ___ Tier IV (Data Validation) ___			EDD required: YES / NO Type: _____ EDD Units: _____		
Relinquished by: (Signature) <i>[Signature]</i>	Date: <u>4/17/14</u>	Time: <u>18:00</u>	Received by: (Signature) <i>[Signature]</i>	Date: <u>4/22/14</u>	Time: <u>0840</u>
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Project Requirements (MRLs, QAPP, etc.)  
QA/QC MADEPLAN  
2nd RUN.  
10-15 Specific List  
1,1,1-TCA, 1,1,1-DCA, 1,1-DCE, PCE,  
TCE, vinyl chloride, cis-1,2-DCE,  
and trans-1,2-DCE



# Cooler Receipt and Preservation Check Form

Project/Client CR I Folder Number R14-2846

Cooler received on 4/22/14 by: AP COURIER: ALS UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler? YES NO
2. Were custody papers properly filled out (ink, signed, etc.)? YES NO
3. Did all bottles arrive in good condition (unbroken)? YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES NO N/A
5. Were **Ice** or **Ice packs** present? YES NO
6. Where did the bottles originate? ALS/ROC CLIENT
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
8. Temperature of cooler(s) upon receipt: AIR \_\_\_\_\_

Is the temperature within 0° - 6° C?: Y N Y N Y N Y N Y N

If No, Explain Below Date/Time Temperatures Taken: AIR

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location SMA by AP on 4/22/14 at 0845  
5035 samples placed in storage location \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: JMU 4/22/14

Cooler Breakdown: Date: 4/27/14 Time: 1241 by: dm

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent			Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK No = Samples were preserved at lab as listed PM OK to Adjust:
		YES	NO							
≥12	NaOH									
≤2	HNO <sub>3</sub>									
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-							
	Zn Aceta	-	-							
	HCl	*	*							

Bottle lot numbers: \_\_\_\_\_

Other Comments: \_\_\_\_\_

PC Secondary Review: JMU 4/29/14

\*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150148.01  
**Prepared By:** Dale Dailey **Date :** 6/2/2014  
**Matrix:** Air  
**Analyte Group :** Volatile Organics **Analytical Method :** EPA Method TO-15  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1403115  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/29/14	VOC TO-15		30 Days	5/1, 5/2, 5/3/14

**Sample temperature within QC limits:** NA - Air

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? Yes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :** NA

**Trip Blank ID :** NA

**Method Blank:** EPA TO-15 5/1/2014

EPA TO-15 5/2/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

(1) All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method. All initial and continuing calibrations were compliant.

(2) Various compounds for BLDG 3-2, BLDG 2-6, BLDG 3-4, and BLDG 3-3 have been flagged with an "E" as being outside the calibration range of the instrument. The samples were repeated at dilutions and both sets of data have been reported out.

(3) No method blank was analyzed on 5/3/14.

**Reviewed By:** Pernilla Haley, 6/9/14



May 08, 2014

Service Request No: R1403115

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly Air Samples/150148-01000000**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on April 30, 2014. For your reference, these analyses have been assigned our service request number **R1403115**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

Janice Jaeger  
Client Services Manager

Page 1 of 40

CC: Pernilla Haley

## ALS Environmental

**Client:** CB&I.  
**Project:** Varian Beverly  
**Sample Matrix:** Air

**Service Request No.:** R1403115  
**Project No.:** 150148  
**Date Received:** 04/30/14

### CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS environmental. This report contains analytical results for samples designated for Tier II, MASS. CAM deliverables. When appropriate to the method, blank and LCS results have been reported with each analytical test.

#### Sample Receipt

CB&I air samples were collected on 04/29/14 and received at ALS in good condition as noted on the receipt and preservation check form. The samples were stored in the laboratory at room temperature prior to analysis. See the ALS case narrative for a cross-reference between Client ID and ALS Job #.

#### TO - 15 Air Analysis

Seven air samples were analyzed for a site list of Volatile Organics by EPA method TO-15.

All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method.

Various compounds for BLDG 3-2, BLDG 2-6, BLDG 3-4 and BLDG 3-3 have been flagged with an "E" as being outside the calibration range of the instrument. The sample was repeated at a dilution and both sets of data have been reported out.

All initial and continuing calibrations were compliant.

All surrogate standard recoveries were within QC limits.

The Method blanks were free of contamination.

The LCS recoveries were all within QC limits of 70 – 130 %.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150148

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1403115-001-007

Matrices: Groundwater/Surface Water    Soil/Sediment    Drinking Water    Air  Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B <input checked="" type="checkbox"/>
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X Yes    No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X Yes    No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X Yes    No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X Yes    No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes    No Yes <input checked="" type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X Yes    No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

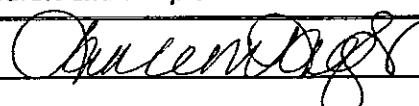
<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X Yes    No <sup>1</sup>
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**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X Yes    No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes    X No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature: 

Position: Client Services  
Manager

Printed Name: Janice Jaeger

Date: 05/12/14      **00003**

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1403115

<u>Lab ID</u>	<u>Client ID</u>
R1403115-001	BLDG3-VP-1
R1403115-002	BLDG3-VP-2
R1403115-003	BLDG3-VP-3
R1403115-004	BLDG 3-2
R1403115-005	BLDG 2-6
R1403115-006	BLDG 3-4
R1403115-007	BLDG 3-3

00004



## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of:* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

A handwritten signature in cursive script, appearing to read "Oscar P. Giacalone".

*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032      ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CaCO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	

June 25, 2013

\* = Provisional Certification

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COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014

<u>Analytes</u>	<u>Methods</u>
CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 365.1
PHOSPHORUS, TOTAL	EPA 365.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG3-VP-1  
 Lab Code: R1403115-001

Service Request: R1403115  
 Date Collected: 4/29/14 1123  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/2/14 1143  
 Canister Dilution Factor: 1.40

Initial Pressure (psig): -1.62      Final Pressure (psig): 3.55

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	3.2	26	26	10	10	U
74-83-9	Bromomethane	3.2	190	190	48	48	U
67-64-1	Acetone	3.2	2200	2200	920	920	U
75-35-4	1,1-Dichloroethene	3.2	190	190	49	49	U
75-09-2	Methylene Chloride	3.2	170	170	48	48	U
156-60-5	trans-1,2-Dichloroethene	3.2	190	190	49	49	U
75-34-3	1,1-Dichloroethane	3.2	200	200	49	49	U
1634-04-4	Methyl tert-Butyl Ether	3.2	350	350	96	96	U
78-93-3	2-Butanone (MEK)	3.2	280	280	96	96	U
156-59-2	cis-1,2-Dichloroethene	3.2	190	190	49	49	U
67-66-3	Chloroform	3.2	240	240	48	48	U
107-06-2	1,2-Dichloroethane	3.2	200	200	49	49	U
71-55-6	1,1,1-Trichloroethane (TCA)	3.2	260	260	48	48	U
71-43-2	Benzene	3.2	150	150	48	48	U
56-23-5	Carbon Tetrachloride	3.2	31	31	4.9	4.9	U
78-87-5	1,2-Dichloropropane	3.2	220	220	48	48	U
75-27-4	Bromodichloromethane	3.2	66	66	9.8	9.8	U
79-01-6	Trichloroethene (TCE)	3.2	960	26	180	4.9	U
123-91-1	1,4-Dioxane	3.2	2200	2200	610	610	U
10061-01-5	cis-1,3-Dichloropropene	3.2	440	440	96	96	U
108-10-1	4-Methyl-2-pentanone (MIBK)	3.2	390	390	96	96	U
10061-02-6	trans-1,3-Dichloropropene	3.2	220	220	48	48	U
79-00-5	1,1,2-Trichloroethane	3.2	260	260	48	48	U
108-88-3	Toluene	3.2	180	180	48	48	U
591-78-6	2-Hexanone	3.2	200	200	48	48	U
124-48-1	Dibromochloromethane	3.2	83	83	9.8	9.8	U
106-93-4	1,2-Dibromoethane (EDB)	3.2	74	74	9.7	9.7	U
127-18-4	Tetrachloroethene (PCE)	3.2	19000	35	2700	5.2	U
108-90-7	Chlorobenzene	3.2	220	220	48	48	U
100-41-4	Ethylbenzene	3.2	420	420	96	96	U
179601-23-1	m,p-Xylenes	3.2	840	840	190	190	U
75-25-2	Bromoform	3.2	500	500	48	48	U
100-42-5	Styrene	3.2	410	410	97	97	U
95-47-6	o-Xylene	3.2	420	420	96	96	U
79-34-5	1,1,2,2-Tetrachloroethane	3.2	66	66	9.6	9.6	U
541-73-1	1,3-Dichlorobenzene	3.2	580	580	96	96	U
106-46-7	1,4-Dichlorobenzene	3.2	580	580	96	96	U



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG3-VP-1  
 Lab Code: R1403115-001

Service Request: R1403115  
 Date Collected: 4/29/14 1123  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/2/14 1143  
 Canister Dilution Factor: 1.40

Initial Pressure (psig): -1.62      Final Pressure (psig): 3.55

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	3.2	580	580	96	96	U
91-20-3	Naphthalene	3.2	880	880	170	170	U
87-68-3	Hexachlorobutadiene	3.2	1300	1300	120	120	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	95	70-130	5/2/14 1143	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG3-VP-2  
 Lab Code: R1403115-002

Service Request: R1403115  
 Date Collected: 4/29/14 1124  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/2/14 1230  
 Canister Dilution Factor: 1.40

Initial Pressure (psig): -1.67 Final Pressure (psig): 3.53

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	6.6	13	13	5.0	5.0	U
74-83-9	Bromomethane	6.6	91	91	23	23	U
67-64-1	Acetone	6.6	1100	1100	450	450	U
75-35-4	1,1-Dichloroethene	6.6	93	93	24	24	U
75-09-2	Methylene Chloride	6.6	81	81	23	23	U
156-60-5	trans-1,2-Dichloroethene	6.6	93	93	24	24	U
75-34-3	1,1-Dichloroethane	6.6	95	95	24	24	U
1634-04-4	Methyl tert-Butyl Ether	6.6	170	170	46	46	U
78-93-3	2-Butanone (MEK)	6.6	140	140	47	47	U
156-59-2	cis-1,2-Dichloroethene	6.6	93	93	24	24	U
67-66-3	Chloroform	6.6	110	110	23	23	U
107-06-2	1,2-Dichloroethane	6.6	95	95	24	24	U
71-55-6	1,1,1-Trichloroethane (TCA)	6.6	130	130	23	23	U
71-43-2	Benzene	6.6	74	74	23	23	U
56-23-5	Carbon Tetrachloride	6.6	15	15	2.4	2.4	U
78-87-5	1,2-Dichloropropane	6.6	110	110	23	23	U
75-27-4	Bromodichloromethane	6.6	32	32	4.8	4.8	U
79-01-6	Trichloroethene (TCE)	6.6	820	13	150	2.4	U
123-91-1	1,4-Dioxane	6.6	1100	1100	290	290	U
10061-01-5	cis-1,3-Dichloropropene	6.6	210	210	47	47	U
108-10-1	4-Methyl-2-pentanone (MIBK)	6.6	190	190	47	47	U
10061-02-6	trans-1,3-Dichloropropene	6.6	110	110	23	23	U
79-00-5	1,1,2-Trichloroethane	6.6	130	130	23	23	U
108-88-3	Toluene	6.6	87	87	23	23	U
591-78-6	2-Hexanone	6.6	95	95	23	23	U
124-48-1	Dibromochloromethane	6.6	40	40	4.7	4.7	U
106-93-4	1,2-Dibromoethane (EDB)	6.6	36	36	4.7	4.7	U
127-18-4	Tetrachloroethene (PCE)	6.6	9600	17	1400	2.5	U
108-90-7	Chlorobenzene	6.6	110	110	24	24	U
100-41-4	Ethylbenzene	6.6	200	200	46	46	U
179601-23-1	m,p-Xylenes	6.6	410	410	93	93	U
75-25-2	Bromoform	6.6	240	240	23	23	U
100-42-5	Styrene	6.6	200	200	47	47	U
95-47-6	o-Xylene	6.6	200	200	46	46	U
79-34-5	1,1,2,2-Tetrachloroethane	6.6	32	32	4.6	4.6	U
541-73-1	1,3-Dichlorobenzene	6.6	280	280	47	47	U
106-46-7	1,4-Dichlorobenzene	6.6	280	280	47	47	U

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly Air Samples/150148-01000000  
**Sample Matrix:** Air  
**Sample Name:** BLDG3-VP-2  
**Lab Code:** R1403115-002

**Service Request:** R1403115  
**Date Collected:** 4/29/14 1124  
**Date Received:** 4/30/14

**Analytical Method:** TO-15

**Date Analyzed:** 5/2/14 1230  
**Canister Dilution Factor:** 1.40

Initial Pressure (psig): -1.67      Final Pressure (psig): 3.53

CAS #	Analyte Name	Sample Amount mL	Result µg/m <sup>3</sup>	MRL µg/m <sup>3</sup>	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	6.6	280	280	47	47	U
91-20-3	Naphthalene	6.6	420	420	81	81	U
87-68-3	Hexachlorobutadiene	6.6	640	640	60	60	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	95	70-130	5/2/14 1230	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG3-VP-3  
 Lab Code: R1403115-003

Service Request: R1403115  
 Date Collected: 4/29/14 1125  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/2/14 1316  
 Canister Dilution Factor: 1.42

Initial Pressure (psig): -1.87      Final Pressure (psig): 3.56

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	33	2.6	2.6	1.0	1.0	U
74-83-9	Bromomethane	33	19	19	4.8	4.8	U
67-64-1	Acetone	33	220	220	91	91	U
75-35-4	1,1-Dichloroethene	33	19	19	4.8	4.8	U
75-09-2	Methylene Chloride	33	16	16	4.7	4.7	U
156-60-5	trans-1,2-Dichloroethene	33	19	19	4.8	4.8	U
75-34-3	1,1-Dichloroethane	33	19	19	4.8	4.8	U
1634-04-4	Methyl tert-Butyl Ether	33	34	34	9.4	9.4	U
78-93-3	2-Butanone (MEK)	33	28	28	9.5	9.5	U
156-59-2	cis-1,2-Dichloroethene	33	20	19	5.0	4.8	U
67-66-3	Chloroform	33	24	23	5.0	4.8	U
107-06-2	1,2-Dichloroethane	33	19	19	4.8	4.8	U
71-55-6	1,1,1-Trichloroethane (TCA)	33	26	26	4.7	4.7	U
71-43-2	Benzene	33	15	15	4.7	4.7	U
56-23-5	Carbon Tetrachloride	33	3.0	3.0	0.48	0.48	U
78-87-5	1,2-Dichloropropane	33	22	22	4.8	4.8	U
75-27-4	Bromodichloromethane	33	6.5	6.5	0.96	0.96	U
79-01-6	Trichloroethene (TCE)	33	460	2.6	86	0.48	U
123-91-1	1,4-Dioxane	33	220	220	60	60	U
10061-01-5	cis-1,3-Dichloropropene	33	43	43	9.5	9.5	U
108-10-1	4-Methyl-2-pentanone (MIBK)	33	39	39	9.5	9.5	U
10061-02-6	trans-1,3-Dichloropropene	33	22	22	4.7	4.7	U
79-00-5	1,1,2-Trichloroethane	33	26	26	4.7	4.7	U
108-88-3	Toluene	33	18	18	4.7	4.7	U
591-78-6	2-Hexanone	33	19	19	4.7	4.7	U
124-48-1	Dibromochloromethane	33	8.2	8.2	0.96	0.96	U
106-93-4	1,2-Dibromoethane (EDB)	33	7.3	7.3	0.95	0.95	U
127-18-4	Tetrachloroethene (PCE)	33	2000	3.4	290	0.51	U
108-90-7	Chlorobenzene	33	22	22	4.8	4.8	U
100-41-4	Ethylbenzene	33	41	41	9.4	9.4	U
179601-23-1	m,p-Xylenes	33	82	82	19	19	U
75-25-2	Bromoform	33	49	49	4.7	4.7	U
100-42-5	Styrene	33	40	40	9.5	9.5	U
95-47-6	o-Xylene	33	41	41	9.4	9.4	U
79-34-5	1,1,2,2-Tetrachloroethane	33	6.5	6.5	0.94	0.94	U
541-73-1	1,3-Dichlorobenzene	33	57	57	9.5	9.5	U
106-46-7	1,4-Dichlorobenzene	33	57	57	9.5	9.5	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG3-VP-3  
 Lab Code: R1403115-003

Service Request: R1403115  
 Date Collected: 4/29/14 1125  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/2/14 1316  
 Canister Dilution Factor: 1.42

Initial Pressure (psig): -1.87      Final Pressure (psig): 3.56

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	33	57	57	9.5	9.5	U
91-20-3	Naphthalene	33	86	86	16	16	U
87-68-3	Hexachlorobutadiene	33	130	130	12	12	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	93	70-130	5/2/14 1316	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 3-2  
 Lab Code: R1403115-004

Service Request: R1403115  
 Date Collected: 4/29/14 1315  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/2/14 1402  
 Canister Dilution Factor: 1.34

Initial Pressure (psig): -1.03      Final Pressure (psig): 3.56

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	10	8.0	8.0	3.1	3.1	U
74-83-9	Bromomethane	10	58	58	15	15	U
67-64-1	Acetone	10	2000	670	850	280	D
75-35-4	1,1-Dichloroethene	10	59	59	15	15	U
75-09-2	Methylene Chloride	10	51	51	15	15	U
156-60-5	trans-1,2-Dichloroethene	10	59	59	15	15	U
75-34-3	1,1-Dichloroethane	10	60	60	15	15	U
1634-04-4	Methyl tert-Butyl Ether	10	110	110	29	29	U
78-93-3	2-Butanone (MEK)	10	87	87	30	30	U
156-59-2	cis-1,2-Dichloroethene	10	59	59	15	15	U
67-66-3	Chloroform	10	72	72	15	15	U
107-06-2	1,2-Dichloroethane	10	60	60	15	15	U
71-55-6	1,1,1-Trichloroethane (TCA)	10	80	80	15	15	U
71-43-2	Benzene	10	47	47	15	15	U
56-23-5	Carbon Tetrachloride	10	9.4	9.4	1.5	1.5	U
78-87-5	1,2-Dichloropropane	10	68	68	15	15	U
75-27-4	Bromodichloromethane	10	20	20	3.0	3.0	U
79-01-6	Trichloroethene (TCE)	10	8.0	8.0	1.5	1.5	U
123-91-1	1,4-Dioxane	10	670	670	190	190	U
10061-01-5	cis-1,3-Dichloropropene	10	130	130	30	30	U
108-10-1	4-Methyl-2-pentanone (MIBK)	10	120	120	29	29	U
10061-02-6	trans-1,3-Dichloropropene	10	67	67	15	15	U
79-00-5	1,1,2-Trichloroethane	10	80	80	15	15	U
108-88-3	Toluene	10	55	55	15	15	U
591-78-6	2-Hexanone	10	60	60	15	15	U
124-48-1	Dibromochloromethane	10	25	25	3.0	3.0	U
106-93-4	1,2-Dibromoethane (EDB)	10	23	23	3.0	3.0	U
127-18-4	Tetrachloroethene (PCE)	10	11	11	1.6	1.6	U
108-90-7	Chlorobenzene	10	68	68	15	15	U
100-41-4	Ethylbenzene	10	130	130	29	29	U
179601-23-1	m,p-Xylenes	10	260	260	59	59	U
75-25-2	Bromoform	10	150	150	15	15	U
100-42-5	Styrene	10	130	130	30	30	U
95-47-6	o-Xylene	10	130	130	29	29	U
79-34-5	1,1,2,2-Tetrachloroethane	10	20	20	2.9	2.9	U
541-73-1	1,3-Dichlorobenzene	10	180	180	29	29	U
106-46-7	1,4-Dichlorobenzene	10	180	180	29	29	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 3-2  
 Lab Code: R1403115-004

Service Request: R1403115  
 Date Collected: 4/29/14 1315  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/2/14 1402  
 Canister Dilution Factor: 1.34

Initial Pressure (psig): -1.03      Final Pressure (psig): 3.56

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	10	180	180	29	29	U
91-20-3	Naphthalene	10	270	270	51	51	U
87-68-3	Hexachlorobutadiene	10	400	400	38	38	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	93	70-130	5/2/14 1402	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 3-2  
 Lab Code: R1403115-004  
 Run Type: Dilution

Service Request: R1403115  
 Date Collected: 4/29/14 1315  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/3/14 0321  
 Canister Dilution Factor: 1.34

Initial Pressure (psig): -1.03      Final Pressure (psig): 3.56

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	350	0.23	0.23	0.090	0.090	U
74-83-9	Bromomethane	350	1.6	1.6	0.42	0.42	U
67-64-1	Acetone	350	1900	19	790	8.1	E
75-35-4	1,1-Dichloroethene	350	1.7	1.7	0.43	0.43	U
75-09-2	Methylene Chloride	350	1.5	1.5	0.42	0.42	U
156-60-5	trans-1,2-Dichloroethene	350	1.7	1.7	0.43	0.43	U
75-34-3	1,1-Dichloroethane	350	1.7	1.7	0.43	0.43	U
1634-04-4	Methyl tert-Butyl Ether	350	3.0	3.0	0.84	0.84	U
78-93-3	2-Butanone (MEK)	350	19	2.5	6.3	0.84	U
156-59-2	cis-1,2-Dichloroethene	350	1.7	1.7	0.43	0.43	U
67-66-3	Chloroform	350	2.1	2.1	0.42	0.42	U
107-06-2	1,2-Dichloroethane	350	1.7	1.7	0.43	0.43	U
71-55-6	1,1,1-Trichloroethane (TCA)	350	2.3	2.3	0.42	0.42	U
71-43-2	Benzene	350	1.3	1.3	0.42	0.42	U
56-23-5	Carbon Tetrachloride	350	0.46	0.27	0.073	0.043	U
78-87-5	1,2-Dichloropropane	350	2.0	2.0	0.42	0.42	U
75-27-4	Bromodichloromethane	350	0.57	0.57	0.086	0.086	U
79-01-6	Trichloroethene (TCE)	350	0.37	0.23	0.069	0.043	U
123-91-1	1,4-Dioxane	350	19	19	5.3	5.3	U
I0061-01-5	cis-1,3-Dichloropropene	350	3.8	3.8	0.84	0.84	U
108-10-1	4-Methyl-2-pentanone (MIBK)	350	3.4	3.4	0.84	0.84	U
10061-02-6	trans-1,3-Dichloropropene	350	1.9	1.9	0.42	0.42	U
79-00-5	1,1,2-Trichloroethane	350	2.3	2.3	0.42	0.42	U
108-88-3	Toluene	350	13	1.6	3.5	0.42	U
591-78-6	2-Hexanone	350	1.7	1.7	0.42	0.42	U
124-48-1	Dibromochloromethane	350	0.73	0.73	0.085	0.085	U
106-93-4	1,2-Dibromoethane (EDB)	350	0.65	0.65	0.085	0.085	U
127-18-4	Tetrachloroethene (PCE)	350	1.9	0.31	0.29	0.045	U
108-90-7	Chlorobenzene	350	2.0	2.0	0.42	0.42	U
100-41-4	Ethylbenzene	350	3.6	3.6	0.84	0.84	U
179601-23-1	m,p-Xylenes	350	7.3	7.3	1.7	1.7	U
75-25-2	Bromoform	350	4.4	4.4	0.42	0.42	U
100-42-5	Styrene	350	3.6	3.6	0.85	0.85	U
95-47-6	o-Xylene	350	3.6	3.6	0.84	0.84	U
79-34-5	1,1,2,2-Tetrachloroethane	350	0.57	0.57	0.084	0.084	U
541-73-1	1,3-Dichlorobenzene	350	5.1	5.1	0.84	0.84	U
106-46-7	1,4-Dichlorobenzene	350	5.1	5.1	0.84	0.84	U

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly Air Samples/150148-01000000  
**Sample Matrix:** Air

**Service Request:** R1403115  
**Date Collected:** 4/29/14 1315  
**Date Received:** 4/30/14

**Sample Name:** BLDG 3-2  
**Lab Code:** R1403115-004  
**Run Type:** Dilution

**Analytical Method:** TO-15

**Date Analyzed:** 5/3/14 0321  
**Canister Dilution Factor:** 1.34

Initial Pressure (psig): -1.03                      Final Pressure (psig): 3.56

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	350	5.1	5.1	0.84	0.84	U
91-20-3	Naphthalene	350	7.7	7.7	1.5	1.5	U
87-68-3	Hexachlorobutadiene	350	11	11	1.1	1.1	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	97	70-130	5/3/14 0321	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 2-6  
 Lab Code: R1403115-005

Service Request: R1403115  
 Date Collected: 4/29/14 1317  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/1/14 1701  
 Canister Dilution Factor: 1.38

Initial Pressure (psig): -1.42      Final Pressure (psig): 3.64

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	800	0.10	0.10	0.041	0.041	U
74-83-9	Bromomethane	800	0.74	0.74	0.19	0.19	U
67-64-1	Acetone	800	82	8.6	34	3.6	E
75-35-4	1,1-Dichloroethene	800	0.76	0.76	0.19	0.19	U
75-09-2	Methylene Chloride	800	0.66	0.66	0.19	0.19	U
156-60-5	trans-1,2-Dichloroethene	800	0.76	0.76	0.19	0.19	U
75-34-3	1,1-Dichloroethane	800	0.78	0.78	0.19	0.19	U
1634-04-4	Methyl tert-Butyl Ether	800	1.4	1.4	0.38	0.38	U
78-93-3	2-Butanone (MEK)	800	14	1.1	4.8	0.38	
156-59-2	cis-1,2-Dichloroethene	800	0.76	0.76	0.19	0.19	U
67-66-3	Chloroform	800	0.93	0.93	0.19	0.19	U
107-06-2	1,2-Dichloroethane	800	0.78	0.78	0.19	0.19	U
71-55-6	1,1,1-Trichloroethane (TCA)	800	1.0	1.0	0.19	0.19	U
71-43-2	Benzene	800	0.60	0.60	0.19	0.19	U
56-23-5	Carbon Tetrachloride	800	0.49	0.12	0.077	0.019	
78-87-5	1,2-Dichloropropane	800	0.88	0.88	0.19	0.19	U
75-27-4	Bromodichloromethane	800	0.26	0.26	0.039	0.039	U
79-01-6	Trichloroethene (TCE)	800	0.55	0.10	0.10	0.019	
123-91-1	1,4-Dioxane	800	8.6	8.6	2.4	2.4	U
10061-01-5	cis-1,3-Dichloropropene	800	1.7	1.7	0.38	0.38	U
108-10-1	4-Methyl-2-pentanone (MIBK)	800	4.1	1.6	1.0	0.38	
10061-02-6	trans-1,3-Dichloropropene	800	0.86	0.86	0.19	0.19	U
79-00-5	1,1,2-Trichloroethane	800	1.0	1.0	0.19	0.19	U
108-88-3	Toluene	800	1.3	0.71	0.34	0.19	
591-78-6	2-Hexanone	800	0.78	0.78	0.19	0.19	U
124-48-1	Dibromochloromethane	800	0.33	0.33	0.038	0.038	U
106-93-4	1,2-Dibromoethane (EDB)	800	0.29	0.29	0.038	0.038	U
127-18-4	Tetrachloroethene (PCE)	800	3.2	0.14	0.47	0.020	
108-90-7	Chlorobenzene	800	0.88	0.88	0.19	0.19	U
100-41-4	Ethylbenzene	800	1.6	1.6	0.38	0.38	U
179601-23-1	m,p-Xylenes	800	3.3	3.3	0.76	0.76	U
75-25-2	Bromoform	800	2.0	2.0	0.19	0.19	U
100-42-5	Styrene	800	1.6	1.6	0.38	0.38	U
95-47-6	o-Xylene	800	1.6	1.6	0.38	0.38	U
79-34-5	1,1,2,2-Tetrachloroethane	800	0.26	0.26	0.038	0.038	U
541-73-1	1,3-Dichlorobenzene	800	2.3	2.3	0.38	0.38	U
106-46-7	1,4-Dichlorobenzene	800	2.3	2.3	0.38	0.38	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 2-6  
 Lab Code: R1403115-005

Service Request: R1403115  
 Date Collected: 4/29/14 1317  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/1/14 1701  
 Canister Dilution Factor: 1.38

Initial Pressure (psig): -1.42      Final Pressure (psig): 3.64

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	800	2.3	2.3	0.38	0.38	U
91-20-3	Naphthalene	800	3.5	3.5	0.66	0.66	U
87-68-3	Hexachlorobutadiene	800	5.2	5.2	0.49	0.49	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	96	70-130	5/1/14 1701	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 2-6  
 Lab Code: R1403115-005  
 Run Type: Dilution

Service Request: R1403115  
 Date Collected: 4/29/14 1317  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/1/14 1746  
 Canister Dilution Factor: 1.38

Initial Pressure (psig): -1.42      Final Pressure (psig): 3.64

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	275	0.30	0.30	0.12	0.12	U
74-83-9	Bromomethane	275	2.2	2.2	0.56	0.56	U
67-64-1	Acetone	275	75	25	32	11	D
75-35-4	1,1-Dichloroethene	275	2.2	2.2	0.56	0.56	U
75-09-2	Methylene Chloride	275	1.9	1.9	0.55	0.55	U
156-60-5	trans-1,2-Dichloroethene	275	2.2	2.2	0.56	0.56	U
75-34-3	1,1-Dichloroethane	275	2.3	2.3	0.56	0.56	U
1634-04-4	Methyl tert-Butyl Ether	275	4.0	4.0	1.1	1.1	U
78-93-3	2-Butanone (MEK)	275	13	3.3	4.4	1.1	D
156-59-2	cis-1,2-Dichloroethene	275	2.2	2.2	0.56	0.56	U
67-66-3	Chloroform	275	2.7	2.7	0.56	0.56	U
107-06-2	1,2-Dichloroethane	275	2.3	2.3	0.56	0.56	U
71-55-6	1,1,1-Trichloroethane (TCA)	275	3.0	3.0	0.55	0.55	U
71-43-2	Benzene	275	1.8	1.8	0.55	0.55	U
56-23-5	Carbon Tetrachloride	275	0.45	0.35	0.072	0.056	D
78-87-5	1,2-Dichloropropane	275	2.6	2.6	0.55	0.55	U
75-27-4	Bromodichloromethane	275	0.75	0.75	0.11	0.11	U
79-01-6	Trichloroethene (TCE)	275	0.52	0.30	0.096	0.056	D
123-91-1	1,4-Dioxane	275	25	25	7.0	7.0	U
10061-01-5	cis-1,3-Dichloropropene	275	5.0	5.0	1.1	1.1	U
108-10-1	4-Methyl-2-pentanone (MIBK)	275	4.5	4.5	1.1	1.1	U
10061-02-6	trans-1,3-Dichloropropene	275	2.5	2.5	0.55	0.55	U
79-00-5	1,1,2-Trichloroethane	275	3.0	3.0	0.55	0.55	U
108-88-3	Toluene	275	2.1	2.1	0.55	0.55	U
591-78-6	2-Hexanone	275	2.3	2.3	0.55	0.55	U
124-48-1	Dibromochloromethane	275	0.95	0.95	0.11	0.11	U
106-93-4	1,2-Dibromoethane (EDB)	275	0.85	0.85	0.11	0.11	U
127-18-4	Tetrachloroethene (PCE)	275	3.1	0.40	0.45	0.059	D
108-90-7	Chlorobenzene	275	2.6	2.6	0.56	0.56	U
100-41-4	Ethylbenzene	275	4.8	4.8	1.1	1.1	U
179601-23-1	m,p-Xylenes	275	9.6	9.6	2.2	2.2	U
75-25-2	Bromoform	275	5.7	5.7	0.55	0.55	U
100-42-5	Styrene	275	4.7	4.7	1.1	1.1	U
95-47-6	o-Xylene	275	4.8	4.8	1.1	1.1	U
79-34-5	1,1,2,2-Tetrachloroethane	275	0.75	0.75	0.11	0.11	U
541-73-1	1,3-Dichlorobenzene	275	6.6	6.6	1.1	1.1	U
106-46-7	1,4-Dichlorobenzene	275	6.6	6.6	1.1	1.1	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 2-6  
 Lab Code: R1403115-005  
 Run Type: Dilution

Service Request: R1403115  
 Date Collected: 4/29/14 1317  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/1/14 1746  
 Canister Dilution Factor: 1.38

Initial Pressure (psig): -1.42      Final Pressure (psig): 3.64

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	275	6.6	6.6	1.1	1.1	U
91-20-3	Naphthalene	275	10	10	1.9	1.9	U
87-68-3	Hexachlorobutadiene	275	15	15	1.4	1.4	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	97	70-130	5/1/14 1746	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 3-4  
 Lab Code: R1403115-006

Service Request: R1403115  
 Date Collected: 4/29/14 1320  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/2/14 1449  
 Canister Dilution Factor: 1.41

Initial Pressure (psig): -1.77 Final Pressure (psig): 3.52

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	7.7	11	11	4.3	4.3	U
74-83-9	Bromomethane	7.7	79	79	20	20	U
67-64-1	Acetone	7.7	2300	920	950	390	D
75-35-4	1,1-Dichloroethene	7.7	81	81	20	20	U
75-09-2	Methylene Chloride	7.7	70	70	20	20	U
156-60-5	trans-1,2-Dichloroethene	7.7	81	81	20	20	U
75-34-3	1,1-Dichloroethane	7.7	82	82	20	20	U
1634-04-4	Methyl tert-Butyl Ether	7.7	140	140	40	40	U
78-93-3	2-Butanone (MEK)	7.7	120	120	40	40	U
156-59-2	cis-1,2-Dichloroethene	7.7	81	81	20	20	U
67-66-3	Chloroform	7.7	99	99	20	20	U
107-06-2	1,2-Dichloroethane	7.7	82	82	20	20	U
71-55-6	1,1,1-Trichloroethane (TCA)	7.7	110	110	20	20	U
71-43-2	Benzene	7.7	64	64	20	20	U
56-23-5	Carbon Tetrachloride	7.7	13	13	2.0	2.0	U
78-87-5	1,2-Dichloropropane	7.7	93	93	20	20	U
75-27-4	Bromodichloromethane	7.7	27	27	4.1	4.1	U
79-01-6	Trichloroethene (TCE)	7.7	11	11	2.0	2.0	U
123-91-1	1,4-Dioxane	7.7	920	920	250	250	U
10061-01-5	cis-1,3-Dichloropropene	7.7	180	180	40	40	U
108-10-1	4-Methyl-2-pentanone (MIBK)	7.7	160	160	40	40	U
10061-02-6	trans-1,3-Dichloropropene	7.7	92	92	20	20	U
79-00-5	1,1,2-Trichloroethane	7.7	110	110	20	20	U
108-88-3	Toluene	7.7	75	75	20	20	U
591-78-6	2-Hexanone	7.7	82	82	20	20	U
124-48-1	Dibromochloromethane	7.7	35	35	4.1	4.1	U
106-93-4	1,2-Dibromoethane (EDB)	7.7	31	31	4.1	4.1	U
127-18-4	Tetrachloroethene (PCE)	7.7	15	15	2.2	2.2	U
108-90-7	Chlorobenzene	7.7	93	93	20	20	U
100-41-4	Ethylbenzene	7.7	170	170	40	40	U
179601-23-1	m,p-Xylenes	7.7	350	350	81	81	U
75-25-2	Bromoform	7.7	210	210	20	20	U
100-42-5	Styrene	7.7	170	170	40	40	U
95-47-6	o-Xylene	7.7	170	170	40	40	U
79-34-5	1,1,2,2-Tetrachloroethane	7.7	27	27	4.0	4.0	U
541-73-1	1,3-Dichlorobenzene	7.7	240	240	40	40	U
106-46-7	1,4-Dichlorobenzene	7.7	240	240	40	40	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 3-4  
 Lab Code: R1403115-006

Service Request: R1403115  
 Date Collected: 4/29/14 1320  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/2/14 1449  
 Canister Dilution Factor: 1.41

Initial Pressure (psig): -1.77      Final Pressure (psig): 3.52

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	7.7	240	240	40	40	U
91-20-3	Naphthalene	7.7	370	370	70	70	U
87-68-3	Hexachlorobutadiene	7.7	550	550	52	52	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	94	70-130	5/2/14 1449	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 3-4  
 Lab Code: R1403115-006  
 Run Type: Dilution

Service Request: R1403115  
 Date Collected: 4/29/14 1320  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/3/14 0405  
 Canister Dilution Factor: 1.41

Initial Pressure (psig): -1.77 Final Pressure (psig): 3.52

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	275	0.31	0.31	0.12	0.12	U
74-83-9	Bromomethane	275	2.2	2.2	0.57	0.57	U
67-64-1	Acetone	275	2000	26	850	11	E
75-35-4	1,1-Dichloroethene	275	2.3	2.3	0.57	0.57	U
75-09-2	Methylene Chloride	275	1.9	1.9	0.56	0.56	U
156-60-5	trans-1,2-Dichloroethene	275	2.3	2.3	0.57	0.57	U
75-34-3	1,1-Dichloroethane	275	2.3	2.3	0.57	0.57	U
1634-04-4	Methyl tert-Butyl Ether	275	4.1	4.1	1.1	1.1	U
78-93-3	2-Butanone (MEK)	275	11	3.3	3.7	1.1	U
156-59-2	cis-1,2-Dichloroethene	275	2.3	2.3	0.57	0.57	U
67-66-3	Chloroform	275	2.8	2.8	0.57	0.57	U
107-06-2	1,2-Dichloroethane	275	2.3	2.3	0.57	0.57	U
71-55-6	1,1,1-Trichloroethane (TCA)	275	3.1	3.1	0.56	0.56	U
71-43-2	Benzene	275	1.8	1.8	0.56	0.56	U
56-23-5	Carbon Tetrachloride	275	0.43	0.36	0.068	0.057	U
78-87-5	1,2-Dichloropropane	275	2.6	2.6	0.57	0.57	U
75-27-4	Bromodichloromethane	275	0.77	0.77	0.11	0.11	U
79-01-6	Trichloroethene (TCE)	275	0.31	0.31	0.057	0.057	U
123-91-1	1,4-Dioxane	275	26	26	7.1	7.1	U
10061-01-5	cis-1,3-Dichloropropene	275	5.1	5.1	1.1	1.1	U
108-10-1	4-Methyl-2-pentanone (MIBK)	275	4.6	4.6	1.1	1.1	U
10061-02-6	trans-1,3-Dichloropropene	275	2.6	2.6	0.56	0.56	U
79-00-5	1,1,2-Trichloroethane	275	3.1	3.1	0.56	0.56	U
108-88-3	Toluene	275	14	2.1	3.7	0.56	U
591-78-6	2-Hexanone	275	2.3	2.3	0.56	0.56	U
124-48-1	Dibromochloromethane	275	0.97	0.97	0.11	0.11	U
106-93-4	1,2-Dibromoethane (EDB)	275	0.87	0.87	0.11	0.11	U
127-18-4	Tetrachloroethene (PCE)	275	5.7	0.41	0.84	0.061	U
108-90-7	Chlorobenzene	275	2.6	2.6	0.57	0.57	U
100-41-4	Ethylbenzene	275	4.9	4.9	1.1	1.1	U
179601-23-1	m,p-Xylenes	275	9.8	9.8	2.3	2.3	U
75-25-2	Bromoform	275	5.8	5.8	0.57	0.57	U
100-42-5	Styrene	275	4.8	4.8	1.1	1.1	U
95-47-6	o-Xylene	275	4.9	4.9	1.1	1.1	U
79-34-5	1,1,2,2-Tetrachloroethane	275	0.77	0.77	0.11	0.11	U
541-73-1	1,3-Dichlorobenzene	275	6.8	6.8	1.1	1.1	U
106-46-7	1,4-Dichlorobenzene	275	6.8	6.8	1.1	1.1	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 3-4  
 Lab Code: R1403115-006  
 Run Type: Dilution

Service Request: R1403115  
 Date Collected: 4/29/14 1320  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/3/14 0405  
 Canister Dilution Factor: 1.41

Initial Pressure (psig): -1.77 Final Pressure (psig): 3.52

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	275	6.8	6.8	1.1	1.1	U
91-20-3	Naphthalene	275	10	10	2.0	2.0	U
87-68-3	Hexachlorobutadiene	275	15	15	1.4	1.4	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	98	70-130	5/3/14 0405	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 3-3  
 Lab Code: R1403115-007

Service Request: R1403115  
 Date Collected: 4/29/14 1316  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/2/14 1535  
 Canister Dilution Factor: 1.42

Initial Pressure (psig): -1.82      Final Pressure (psig): 3.53

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	16	5.3	5.3	2.1	2.1	U
74-83-9	Bromomethane	16	38	38	9.8	9.8	U
67-64-1	Acetone	16	880	440	370	190	D
75-35-4	1,1-Dichloroethene	16	39	39	9.9	9.9	U
75-09-2	Methylene Chloride	16	34	34	9.7	9.7	U
156-60-5	trans-1,2-Dichloroethene	16	39	39	9.9	9.9	U
75-34-3	1,1-Dichloroethane	16	40	40	9.9	9.9	U
1634-04-4	Methyl tert-Butyl Ether	16	70	70	19	19	U
78-93-3	2-Butanone (MEK)	16	58	58	20	20	U
156-59-2	cis-1,2-Dichloroethene	16	39	39	9.9	9.9	U
67-66-3	Chloroform	16	48	48	9.8	9.8	U
107-06-2	1,2-Dichloroethane	16	40	40	9.9	9.9	U
71-55-6	1,1,1-Trichloroethane (TCA)	16	53	53	9.8	9.8	U
71-43-2	Benzene	16	31	31	9.7	9.7	U
56-23-5	Carbon Tetrachloride	16	6.2	6.2	0.99	0.99	U
78-87-5	1,2-Dichloropropane	16	45	45	9.8	9.8	U
75-27-4	Bromodichloromethane	16	13	13	2.0	2.0	U
79-01-6	Trichloroethene (TCE)	16	5.3	5.3	0.99	0.99	U
123-91-1	1,4-Dioxane	16	440	440	120	120	U
10061-01-5	cis-1,3-Dichloropropene	16	89	89	20	20	U
108-10-1	4-Methyl-2-pentanone (MIBK)	16	80	80	19	19	U
10061-02-6	trans-1,3-Dichloropropene	16	44	44	9.8	9.8	U
79-00-5	1,1,2-Trichloroethane	16	53	53	9.8	9.8	U
108-88-3	Toluene	16	36	36	9.7	9.7	U
591-78-6	2-Hexanone	16	40	40	9.8	9.8	U
124-48-1	Dibromochloromethane	16	17	17	2.0	2.0	U
106-93-4	1,2-Dibromoethane (EDB)	16	15	15	2.0	2.0	U
127-18-4	Tetrachloroethene (PCE)	16	96	7.1	14	1.0	D
108-90-7	Chlorobenzene	16	45	45	9.8	9.8	U
100-41-4	Ethylbenzene	16	84	84	19	19	U
179601-23-1	m,p-Xylenes	16	170	170	39	39	U
75-25-2	Bromoform	16	100	100	9.8	9.8	U
100-42-5	Styrene	16	83	83	20	20	U
95-47-6	o-Xylene	16	84	84	19	19	U
79-34-5	1,1,2,2-Tetrachloroethane	16	13	13	1.9	1.9	U
541-73-1	1,3-Dichlorobenzene	16	120	120	19	19	U
106-46-7	1,4-Dichlorobenzene	16	120	120	19	19	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 3-3  
 Lab Code: R1403115-007

Service Request: R1403115  
 Date Collected: 4/29/14 1316  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/2/14 1535  
 Canister Dilution Factor: 1.42

Initial Pressure (psig): -1.82      Final Pressure (psig): 3.53

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	16	120	120	19	19	U
91-20-3	Naphthalene	16	180	180	34	34	U
87-68-3	Hexachlorobutadiene	16	270	270	25	25	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	92	70-130	5/2/14 1535	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: BLDG 3-3  
 Lab Code: R1403115-007  
 Run Type: Dilution

Service Request: R1403115  
 Date Collected: 4/29/14 1316  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/3/14 0450  
 Canister Dilution Factor: 1.42

Initial Pressure (psig): -1.82      Final Pressure (psig): 3.53

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	325	0.26	0.26	0.10	0.10	U
74-83-9	Bromomethane	325	1.9	1.9	0.48	0.48	U
67-64-1	Acetone	325	790	22	330	9.2	E
75-35-4	1,1-Dichloroethene	325	1.9	1.9	0.49	0.49	U
75-09-2	Methylene Chloride	325	1.7	1.7	0.48	0.48	U
156-60-5	trans-1,2-Dichloroethene	325	1.9	1.9	0.49	0.49	U
75-34-3	1,1-Dichloroethane	325	2.0	2.0	0.49	0.49	U
1634-04-4	Methyl tert-Butyl Ether	325	3.5	3.5	0.96	0.96	U
78-93-3	2-Butanone (MEK)	325	5.1	2.8	1.7	0.96	
156-59-2	cis-1,2-Dichloroethene	325	1.9	1.9	0.49	0.49	U
67-66-3	Chloroform	325	2.4	2.4	0.48	0.48	U
107-06-2	1,2-Dichloroethane	325	2.0	2.0	0.49	0.49	U
71-55-6	1,1,1-Trichloroethane (TCA)	325	2.6	2.6	0.48	0.48	U
71-43-2	Benzene	325	1.5	1.5	0.48	0.48	U
56-23-5	Carbon Tetrachloride	325	0.45	0.31	0.071	0.049	
78-87-5	1,2-Dichloropropane	325	2.2	2.2	0.48	0.48	U
75-27-4	Bromodichloromethane	325	0.66	0.66	0.098	0.098	U
79-01-6	Trichloroethene (TCE)	325	1.7	0.26	0.32	0.049	
123-91-1	1,4-Dioxane	325	22	22	6.1	6.1	U
10061-01-5	cis-1,3-Dichloropropene	325	4.4	4.4	0.96	0.96	U
108-10-1	4-Methyl-2-pentanone (MIBK)	325	3.9	3.9	0.96	0.96	U
10061-02-6	trans-1,3-Dichloropropene	325	2.2	2.2	0.48	0.48	U
79-00-5	1,1,2-Trichloroethane	325	2.6	2.6	0.48	0.48	U
108-88-3	Toluene	325	5.4	1.8	1.4	0.48	
591-78-6	2-Hexanone	325	2.0	2.0	0.48	0.48	U
124-48-1	Dibromochloromethane	325	0.83	0.83	0.097	0.097	U
106-93-4	1,2-Dibromoethane (EDB)	325	0.74	0.74	0.097	0.097	U
127-18-4	Tetrachloroethene (PCE)	325	99	0.35	15	0.052	
108-90-7	Chlorobenzene	325	2.2	2.2	0.48	0.48	U
100-41-4	Ethylbenzene	325	4.2	4.2	0.96	0.96	U
179601-23-1	m,p-Xylenes	325	8.3	8.3	1.9	1.9	U
75-25-2	Bromoform	325	5.0	5.0	0.48	0.48	U
100-42-5	Styrene	325	4.1	4.1	0.97	0.97	U
95-47-6	o-Xylene	325	4.2	4.2	0.96	0.96	U
79-34-5	1,1,2,2-Tetrachloroethane	325	0.66	0.66	0.095	0.095	U
541-73-1	1,3-Dichlorobenzene	325	5.8	5.8	0.96	0.96	U
106-46-7	1,4-Dichlorobenzene	325	5.8	5.8	0.96	0.96	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-0100000  
 Sample Matrix: Air  
 Sample Name: BLDG 3-3  
 Lab Code: R1403115-007  
 Run Type: Dilution

Service Request: R1403115  
 Date Collected: 4/29/14 1316  
 Date Received: 4/30/14

Analytical Method: TO-15

Date Analyzed: 5/3/14 0450  
 Canister Dilution Factor: 1.42

Initial Pressure (psig): -1.82      Final Pressure (psig): 3.53

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	325	5.8	5.8	0.96	0.96	U
91-20-3	Naphthalene	325	8.7	8.7	1.7	1.7	U
87-68-3	Hexachlorobutadiene	325	13	13	1.2	1.2	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	97	70-130	5/3/14 0450	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1404525-01

Service Request: R1403115  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 5/1/14 1025

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.060	0.060	0.023	0.023	U
74-83-9	Bromomethane	1000	0.43	0.43	0.11	0.11	U
67-64-1	Acetone	1000	5.0	5.0	2.1	2.1	U
75-35-4	1,1-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-09-2	Methylene Chloride	1000	0.38	0.38	0.11	0.11	U
156-60-5	trans-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-34-3	1,1-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
1634-04-4	Methyl tert-Butyl Ether	1000	0.79	0.79	0.22	0.22	U
78-93-3	2-Butanone (MEK)	1000	0.65	0.65	0.22	0.22	U
156-59-2	cis-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
67-66-3	Chloroform	1000	0.54	0.54	0.11	0.11	U
107-06-2	1,2-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.60	0.60	0.11	0.11	U
71-43-2	Benzene	1000	0.35	0.35	0.11	0.11	U
56-23-5	Carbon Tetrachloride	1000	0.070	0.070	0.011	0.011	U
78-87-5	1,2-Dichloropropane	1000	0.51	0.51	0.11	0.11	U
75-27-4	Bromodichloromethane	1000	0.15	0.15	0.022	0.022	U
79-01-6	Trichloroethene (TCE)	1000	0.060	0.060	0.011	0.011	U
123-91-1	1,4-Dioxane	1000	5.0	5.0	1.4	1.4	U
10061-01-5	cis-1,3-Dichloropropene	1000	1.0	1.0	0.22	0.22	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1000	0.90	0.90	0.22	0.22	U
10061-02-6	trans-1,3-Dichloropropene	1000	0.50	0.50	0.11	0.11	U
79-00-5	1,1,2-Trichloroethane	1000	0.60	0.60	0.11	0.11	U
108-88-3	Toluene	1000	0.41	0.41	0.11	0.11	U
591-78-6	2-Hexanone	1000	0.45	0.45	0.11	0.11	U
124-48-1	Dibromochloromethane	1000	0.19	0.19	0.022	0.022	U
106-93-4	1,2-Dibromoethane (EDB)	1000	0.17	0.17	0.022	0.022	U
127-18-4	Tetrachloroethene (PCE)	1000	0.080	0.080	0.012	0.012	U
108-90-7	Chlorobenzene	1000	0.51	0.51	0.11	0.11	U
100-41-4	Ethylbenzene	1000	0.95	0.95	0.22	0.22	U
179601-23-1	m,p-Xylenes	1000	1.9	1.9	0.44	0.44	U
75-25-2	Bromoform	1000	1.1	1.1	0.11	0.11	U
100-42-5	Styrene	1000	0.94	0.94	0.22	0.22	U
95-47-6	o-Xylene	1000	0.95	0.95	0.22	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.15	0.15	0.022	0.022	U
541-73-1	1,3-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
106-46-7	1,4-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly Air Samples/150148-01000000  
**Sample Matrix:** Air  
**Sample Name:** Method Blank  
**Lab Code:** RQ1404525-01

**Service Request:** R1403115  
**Date Collected:** NA  
**Date Received:** NA

**Analytical Method:** TO-15

**Date Analyzed:** 5/1/14 1025

CAS #	Analyte Name	Sample Amount mL	Result µg/m <sup>3</sup>	MRL µg/m <sup>3</sup>	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
91-20-3	Naphthalene	1000	2.0	2.0	0.38	0.38	U
87-68-3	Hexachlorobutadiene	1000	3.0	3.0	0.28	0.28	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	95	70-130	5/1/14 1025	

## ALS Group USA, Corp. dba ALS Environmental

## Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1404596-01

Service Request: R1403115  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 5/2/14 1057

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.060	0.060	0.023	0.023	U
74-83-9	Bromomethane	1000	0.43	0.43	0.11	0.11	U
67-64-1	Acetone	1000	5.0	5.0	2.1	2.1	U
75-35-4	1,1-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-09-2	Methylene Chloride	1000	0.38	0.38	0.11	0.11	U
156-60-5	trans-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-34-3	1,1-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
1634-04-4	Methyl tert-Butyl Ether	1000	0.79	0.79	0.22	0.22	U
78-93-3	2-Butanone (MEK)	1000	0.65	0.65	0.22	0.22	U
156-59-2	cis-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
67-66-3	Chloroform	1000	0.54	0.54	0.11	0.11	U
107-06-2	1,2-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.60	0.60	0.11	0.11	U
71-43-2	Benzene	1000	0.35	0.35	0.11	0.11	U
56-23-5	Carbon Tetrachloride	1000	0.070	0.070	0.011	0.011	U
78-87-5	1,2-Dichloropropane	1000	0.51	0.51	0.11	0.11	U
75-27-4	Bromodichloromethane	1000	0.15	0.15	0.022	0.022	U
79-01-6	Trichloroethene (TCE)	1000	0.060	0.060	0.011	0.011	U
123-91-1	1,4-Dioxane	1000	5.0	5.0	1.4	1.4	U
10061-01-5	cis-1,3-Dichloropropene	1000	1.0	1.0	0.22	0.22	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1000	0.90	0.90	0.22	0.22	U
10061-02-6	trans-1,3-Dichloropropene	1000	0.50	0.50	0.11	0.11	U
79-00-5	1,1,2-Trichloroethane	1000	0.60	0.60	0.11	0.11	U
108-88-3	Toluene	1000	0.41	0.41	0.11	0.11	U
591-78-6	2-Hexanone	1000	0.45	0.45	0.11	0.11	U
124-48-1	Dibromochloromethane	1000	0.19	0.19	0.022	0.022	U
106-93-4	1,2-Dibromoethane (EDB)	1000	0.17	0.17	0.022	0.022	U
127-18-4	Tetrachloroethene (PCE)	1000	0.080	0.080	0.012	0.012	U
108-90-7	Chlorobenzene	1000	0.51	0.51	0.11	0.11	U
100-41-4	Ethylbenzene	1000	0.95	0.95	0.22	0.22	U
179601-23-1	m,p-Xylenes	1000	1.9	1.9	0.44	0.44	U
75-25-2	Bromoform	1000	1.1	1.1	0.11	0.11	U
100-42-5	Styrene	1000	0.94	0.94	0.22	0.22	U
95-47-6	o-Xylene	1000	0.95	0.95	0.22	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.15	0.15	0.022	0.022	U
541-73-1	1,3-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
106-46-7	1,4-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly Air Samples/150148-01000000  
**Sample Matrix:** Air  
**Sample Name:** Method Blank  
**Lab Code:** RQ1404596-01

**Service Request:** R1403115  
**Date Collected:** NA  
**Date Received:** NA

**Analytical Method:** TO-15

**Date Analyzed:** 5/2/14 1057

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
91-20-3	Naphthalene	1000	2.0	2.0	0.38	0.38	U
87-68-3	Hexachlorobutadiene	1000	3.0	3.0	0.28	0.28	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	94	70-130	5/2/14 1057	

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air

Service Request: R1403115

Date Analyzed: 5/1/14

**Lab Control Sample Summary**  
**Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS**

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$ 

Basis: NA

Analysis Lot: 390832

**Lab Control Sample**  
 RQ1404525-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Vinyl Chloride	5.76	6.58	88	70 - 130
Bromomethane	8.47	9.80	86	70 - 130
Acetone	5.91	6.47	91	50 - 150
1,1-Dichloroethene	9.65	10.3	94	70 - 130
Methylene Chloride	9.59	8.94	107	70 - 130
trans-1,2-Dichloroethene	10.4	10.4	100	70 - 130
1,1-Dichloroethane	10.7	10.4	103	70 - 130
Methyl tert-Butyl Ether	9.27	9.55	97	70 - 130
2-Butanone (MEK)	8.08	7.81	103	70 - 130
cis-1,2-Dichloroethene	10.6	10.4	102	70 - 130
Chloroform	12.7	13.2	96	70 - 130
1,2-Dichloroethane	9.93	10.6	94	70 - 130
1,1,1-Trichloroethane (TCA)	13.2	14.3	92	70 - 130
Benzene	8.68	8.38	104	70 - 130
Carbon Tetrachloride	15.1	16.0	94	70 - 130
1,2-Dichloropropane	12.3	12.1	101	70 - 130
Bromodichloromethane	17.5	17.4	101	70 - 130
Trichloroethene (TCE)	13.8	14.0	99	70 - 130
1,4-Dioxane	11.2	9.37	120	50 - 150
cis-1,3-Dichloropropene	12.5	12.5	100	70 - 130
4-Methyl-2-pentanone (MIBK)	9.45	10.5	90	70 - 130
trans-1,3-Dichloropropene	10.7	10.9	99	70 - 130
1,1,2-Trichloroethane	14.4	14.5	99	70 - 130
Toluene	10.1	9.98	101	70 - 130
2-Hexanone	10.0	11.1	91	70 - 130
Dibromochloromethane	22.3	23.4	95	70 - 130
1,2-Dibromoethane (EDB)	19.2	20.0	96	70 - 130
Tetrachloroethene (PCE)	17.7	18.0	98	70 - 130
Chlorobenzene	12.7	12.3	103	70 - 130
Ethylbenzene	11.8	11.5	102	70 - 130
m,p-Xylenes	22.1	22.4	99	70 - 130
Bromoform	26.8	26.6	101	70 - 130
Styrene	10.8	11.1	97	70 - 130
o-Xylene	11.2	11.7	96	70 - 130
1,1,2,2-Tetrachloroethane	17.5	18.5	95	70 - 130
1,3-Dichlorobenzene	14.0	14.7	95	70 - 130
1,4-Dichlorobenzene	13.7	14.9	92	70 - 130
1,2-Dichlorobenzene	13.6	14.6	93	70 - 130

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly Air Samples/150148-01000000  
Sample Matrix: Air

Service Request: R1403115

Date Analyzed: 5/ 1/14

Lab Control Sample Summary  
Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$

Basis: NA

Analysis Lot: 390832

Lab Control Sample

RQ1404525-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Naphthalene	10.2	11.0	92	50 - 150
Hexachlorobutadiene	27.8	23.5	119	50 - 150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air

Service Request: R1403115

Date Analyzed: 5/2/14

**Lab Control Sample Summary**  
**Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS**

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$ 

Basis: NA

Analysis Lot: 391042

**Lab Control Sample**  
 RQ1404596-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Vinyl Chloride	5.98	6.58	91	70 - 130
Bromomethane	8.64	9.80	88	70 - 130
Acetone	5.82	6.47	90	50 - 150
1,1-Dichloroethene	9.55	10.3	93	70 - 130
Methylene Chloride	9.30	8.94	104	70 - 130
trans-1,2-Dichloroethene	10.3	10.4	99	70 - 130
1,1-Dichloroethane	10.6	10.4	102	70 - 130
Methyl tert-Butyl Ether	9.12	9.55	96	70 - 130
2-Butanone (MEK)	8.23	7.81	105	70 - 130
cis-1,2-Dichloroethene	10.6	10.4	102	70 - 130
Chloroform	12.5	13.2	95	70 - 130
1,2-Dichloroethane	9.78	10.6	92	70 - 130
1,1,1-Trichloroethane (TCA)	12.8	14.3	89	70 - 130
Benzene	8.48	8.38	101	70 - 130
Carbon Tetrachloride	14.7	16.0	92	70 - 130
1,2-Dichloropropane	11.8	12.1	97	70 - 130
Bromodichloromethane	17.0	17.4	97	70 - 130
Trichloroethene (TCE)	13.6	14.0	97	70 - 130
1,4-Dioxane	11.5	9.37	122	50 - 150
cis-1,3-Dichloropropene	12.2	12.5	98	70 - 130
4-Methyl-2-pentanone (MIBK)	9.23	10.5	88	70 - 130
trans-1,3-Dichloropropene	10.3	10.9	95	70 - 130
1,1,2-Trichloroethane	13.7	14.5	95	70 - 130
Toluene	9.65	9.98	97	70 - 130
2-Hexanone	9.87	11.1	89	70 - 130
Dibromochloromethane	21.9	23.4	94	70 - 130
1,2-Dibromoethane (EDB)	18.6	20.0	93	70 - 130
Tetrachloroethene (PCE)	17.2	18.0	96	70 - 130
Chlorobenzene	12.5	12.3	102	70 - 130
Ethylbenzene	11.4	11.5	100	70 - 130
m,p-Xylenes	21.4	22.4	96	70 - 130
Bromoform	26.5	26.6	100	70 - 130
Styrene	10.4	11.1	94	70 - 130
o-Xylene	10.9	11.7	93	70 - 130
1,1,2,2-Tetrachloroethane	17.0	18.5	92	70 - 130
1,3-Dichlorobenzene	13.8	14.7	94	70 - 130
1,4-Dichlorobenzene	13.5	14.9	91	70 - 130
1,2-Dichlorobenzene	13.4	14.6	92	70 - 130

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148-01000000  
 Sample Matrix: Air

Service Request: R1403115  
 Date Analyzed: 5/2/14

Lab Control Sample Summary  
 Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$   
 Basis: NA

Analysis Lot: 391042


Lab Control Sample  
 RQ1404596-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Naphthalene	13.2	11.0	120	50 - 150
Hexachlorobutadiene	32.9	23.5	140	50 - 150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 | 585.288.5380 | 585.288.8475 (fax) | www.caslab.com

Requested Turnaround Time in Business Days from Receipt, please circle: 1 Day   2 Day   3 Day   4 Day   5 Day   10 Day-Standard		CAS Project #:							
Company Name: CB&I Environmental, Inc.		Project Name: Varian Beverly							
Address: 150 Royall Street		CAS Contact:							
City, State, Zip: Canton, MA 02021		Project Number: 150148-01000000							
Project Manager: Raymond Cadorette		P.O. #/Billing Information: 876613							
Phone: 617-589-6102		Fax:							
Email (for result reporting): Raymond.Cadorette@CBI.com		Sampler (Print & Sign): Paul LeDoux							
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID	Flow Controller ID	TO-15 Site specific VOC List	Comments Specific Instructions		
Bldg 3-VP-1		4.29.14	1123	SLC00222	FC00852			1	
Bldg 3-VP-2			1124	SLC00221	FC00864			1	
Bldg 3-VP-3			1125	SLC00226	FC00863			1	
Bldg 3-2			1315	SLC00224	FC00855			1	
Bldg 2-6			1317	SLC00201	FC00845			1	
Bldg 3-4			1320	SLC00205	FC00860			1	
Bldg 3-3		✓	1320	SLC00204	FC00853			1	
			1316						
What State were samples collected in: MA						Project Requirements (MRLs, QAPP, etc.) QA/QC: MADEP CAM Complete 2nd run.			
Report Tier Levels - please select: Tier I (Results/Default, if not specified) ___ Tier II (Results + QC) ___ Tier III (CLP Forms Only) ___ Tier IV (Data Validation) ___			EDD required: YES / NO Type: GISKey ___ EDD Units: ug/m3 & ppmv			<b>R1403115</b> <b>7 Y</b> <small>CB&amp;I Environmental &amp; Infrastructure Varian Beverly Air Samples</small> 			
Relinquished by: (Signature) <i>[Signature]</i>		Date: 4.29.14	Time: 1600	Received by: (Signature) <i>[Signature]</i> ALS				Date: 4/30/14	Time: 0850
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)				Date:	Time:
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Date:	Time:		



# Cooler Receipt and Preservation Check Form

Project/Client CB&I Folder Number R74-3115

Cooler received on 4/30/14 by: JPS COURIER: ALS UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler? YES  NO
2. Were custody papers properly filled out (ink, signed, etc.)?  YES  NO
3. Did all bottles arrive in good condition (unbroken)?  YES  NO
4. Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES  NO  N/A
5. Were **Ice** or **Ice packs** present? YES  NO
6. Where did the bottles originate? ALS/ROC, CLIENT
7. Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
8. Temperature of cooler(s) upon receipt: \_\_\_\_\_

Is the temperature within 0° - 6° C?: Y N Y N Y N Y N Y N  
If No, Explain Below Date/Time Temperatures Taken: 4/30/14 Air canisters

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location 5ms by JPS on 4/30 at 1000  
5035 samples placed in storage location \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: JMS 4/30/14

Cooler Breakdown: Date: 4/30/14 Time: 1940 by: shw

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)?  YES  NO
2. Did all bottle labels and tags agree with custody papers?  YES  NO
3. Were correct containers used for the tests indicated?  YES  NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	YES NO		Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK No = Samples were preserved at lab as listed PM OK to Adjust: _____
		YES	NO							
≥12	NaOH									
≤2	HNO <sub>3</sub>									
≤2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)						
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-			*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet				
	Zn Aceta	-	-							
	HCl	*	*							

Bottle lot numbers: \_\_\_\_\_

Other Comments: \_\_\_\_\_

PC Secondary Review: JMS 5/1/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150148.05  
**Prepared By:** Dale Dailey **Date :** 6/2/2014  
**Matrix:** Groundwater  
**Analyte Group :** Volatile Organics **Analytical Method :** SW-846 8260C  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1403116  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
4/2, 4/29/14	SW-846 8260C	14 days	10 days	5/7/2014

**Sample temperature within QC limits:** Yes, 2.8 C

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? No

If no, list sample ID where range was exceeded: See Notes

**Equipment Field Blank ID :** NA  
**Trip Blank ID :** TB-1

**Method Blank:** SW-846 8260C 5/7/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

Sample TB-1 has a collection date of 4/2/14 according to the COC, but is listed as 4/29/14 in the report.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Sample CL2-BR (80) was re-analyzed at larger dilutions to bring the target analytes within the calibration range of the method. Both dilutions were reported with analytes over the range flagged with an "E" and the diluted analytes flagged with a "D".

All LCS and LCSD recoveries were within QC limits. All RPD's were acceptable except various RPD's were outside limits in batch 391269. All outlying QC has been flagged with an "\*\*". The data was impacted for analyte Vinyl Chloride which was given a J qualifier in CL2-BR (80). No other data was impacted since the analytical results were non-detect for these analytes in these batches.

**Reviewed By:** Pernilla Haley, 6/5/14



May 09, 2014

Service Request No: R1403116

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150148-05000000**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on April 30, 2014. For your reference, these analyses have been assigned our service request number **R1403116**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

Janice Jaeger  
Client Services Manager

CC: Pemilla Haley

Page 1 of 17

## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Water

**Service Request No.:** R1403116  
**Project Number:** 150148-05000000  
**Date Received:** 04/30/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Water samples were collected on 04/29/14 and received at ALS in good condition at a cooler temperature of 2.8 °C as noted on the cooler receipt and preservation check form. The client was notified of the out of temperature cooler and the samples were analyzed. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #.

### Volatile Organics

Four water samples were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Sample CL2-BR (80) was re-analyzed at larger dilutions to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D".

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Surrogate Standard recoveries were within QC limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. Various RPD's were outside limits and have been flagged with an "\*\*". No data was affected.

All samples were analyzed within the required holding time of 14 days.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150148

Project Location: Varian Beverly

RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):  
R1403116-001-004

Matrices: Groundwater/Surface Water  Soil/Sediment  Drinking Water  Air  Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X Yes No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X Yes No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X Yes No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X Yes No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes No Yes No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X Yes No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

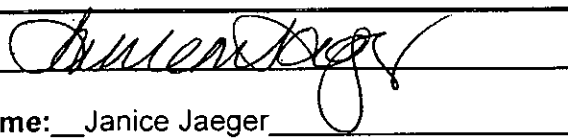
<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X Yes No <sup>1</sup>
----------	---	-----------------------

**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X Yes No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes X No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature: 

Printed Name: Janice Jaeger

Position: Client Services  
Manager

Date: 05/12/14 **00003**



## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1403116

<u>Lab ID</u>	<u>Client ID</u>
R1403116-001	CL2-BR (80)
R1403116-002	MW-2R (9)
R1403116-003	P-9R (4)
R1403116-004	TB-1

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of:* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

A handwritten signature in cursive script, reading "Oscar C. Parcarolo".

*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032      ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CACO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	

June 25, 2013

\*= Provisional Certification

Page 1 of 2

00007

**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: **01 JUL 2013**

**M-NY032      ALS ENVIRONMENTAL ROCHESTER  
                 ROCHESTER NY**

**NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014**

<u>Analytes</u>	<u>Methods</u>
CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 365.1
PHOSPHORUS, TOTAL	EPA 365.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1403116  
 Date Collected: 4/29/14 1000  
 Date Received: 4/30/14  
 Date Analyzed: 5/7/14 02:53

Sample Name: CL2-BR (80)  
 Lab Code: R1403116-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\050614\F8332.D\

Analysis Lot: 391269  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	69		10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	15		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	4.4		2.0	
156-59-2	cis-1,2-Dichloroethene	440	E	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	3.4		2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	5/7/14 02:53	
Dibromofluoromethane	109	70-130	5/7/14 02:53	
Toluene-d8	98	70-130	5/7/14 02:53	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1403116  
 Date Collected: 4/29/14 1000  
 Date Received: 4/30/14  
 Date Analyzed: 5/7/14 09:58

Sample Name: CL2-BR (80)  
 Lab Code: R1403116-001  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\050614\F8346.D\

Analysis Lot: 391269  
 Instrument Name: R-MS-10  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10	U	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	63	D	50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	10	U	10	
79-01-6	Trichloroethene (TCE)	13	D	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	10	U	10	
156-59-2	cis-1,2-Dichloroethene	360	D	10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	87	70-130	5/7/14 09:58	
Dibromofluoromethane	100	70-130	5/7/14 09:58	
Toluene-d8	87	70-130	5/7/14 09:58	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1403116  
 Date Collected: 4/29/14 1030  
 Date Received: 4/30/14  
 Date Analyzed: 5/7/14 03:24

Sample Name: MW-2R (9)  
 Lab Code: R1403116-002

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\050614\F8333.D\

Analysis Lot: 391269  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	67		10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	70-130	5/7/14 03:24	
Dibromofluoromethane	102	70-130	5/7/14 03:24	
Toluene-d8	99	70-130	5/7/14 03:24	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1403116  
 Date Collected: 4/29/14 1415  
 Date Received: 4/30/14  
 Date Analyzed: 5/7/14 03:54

Sample Name: P-9R (4)  
 Lab Code: R1403116-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\050614\F8334.D\

Analysis Lot: 391269  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	74		10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	70-130	5/7/14 03:54	
Dibromofluoromethane	107	70-130	5/7/14 03:54	
Toluene-d8	104	70-130	5/7/14 03:54	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1403116  
 Date Collected: 4/29/14 1100  
 Date Received: 4/30/14  
 Date Analyzed: 5/7/14 04:24

Sample Name: TB-1  
 Lab Code: R1403116-004

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\050614\F8335.D\

Analysis Lot: 391269  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	5/7/14 04:24	
Dibromofluoromethane	90	70-130	5/7/14 04:24	
Toluene-d8	100	70-130	5/7/14 04:24	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1403116  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 5/7/14 00:51

Sample Name: Method Blank  
 Lab Code: RQ1404808-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa10\data\050614\F8328.D\

Analysis Lot: 391269  
 Instrument Name: R-MS-10  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	70-130	5/7/14 00:51	
Dibromofluoromethane	100	70-130	5/7/14 00:51	
Toluene-d8	100	70-130	5/7/14 00:51	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150148-05000000  
 Sample Matrix: Water

Service Request: R1403116

Date Analyzed: 5/6/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L

Basis: NA

Analysis Lot: 391269

Analyte Name	Lab Control Sample RQ1404808-02			Duplicate Lab Control Sample RQ1404808-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	17.2	20.0	86	21.4	20.0	107	70 - 130	22 *	20
1,1,2,2-Tetrachloroethane	17.6	20.0	88	19.3	20.0	96	70 - 130	9	20
1,1,2-Trichloroethane	20.3	20.0	101	23.6	20.0	118	70 - 130	15	20
1,1-Dichloroethane (1,1-DCA)	19.5	20.0	97	24.0	20.0	120	70 - 130	21 *	20
1,1-Dichloroethene (1,1-DCE)	18.7	20.0	94	21.4	20.0	107	70 - 130	13	20
1,2-Dichloroethane	19.4	20.0	97	22.3	20.0	112	70 - 130	14	20
1,2-Dichloropropane	21.6	20.0	108	23.4	20.0	117	70 - 130	8	20
Acetone	20.6	20.0	103	23.0	20.0	115	40 - 160	11	20
Bromodichloromethane	20.1	20.0	100	22.9	20.0	115	70 - 130	13	20
Bromoform	19.3	20.0	96	20.9	20.0	104	70 - 130	8	20
Bromomethane	22.8	20.0	114	23.7	20.0	119	40 - 160	4	20
Carbon Tetrachloride	17.4	20.0	87	20.3	20.0	102	70 - 130	16	20
Chlorobenzene	17.9	20.0	90	20.2	20.0	101	70 - 130	12	20
Chloroethane	15.1	20.0	76	18.8	20.0	94	70 - 130	22 *	20
Chloroform	18.9	20.0	94	23.0	20.0	115	70 - 130	20	20
Chloromethane	16.6	20.0	83	20.0	20.0	100	40 - 160	18	20
Dibromochloromethane	20.8	20.0	104	21.5	20.0	108	70 - 130	3	20
Methylene Chloride	20.0	20.0	100	21.0	20.0	105	70 - 130	5	20
Tetrachloroethene (PCE)	17.2	20.0	86	19.1	20.0	96	70 - 130	10	20
Trichloroethene (TCE)	18.3	20.0	91	22.3	20.0	112	70 - 130	20	20
Trichlorofluoromethane (CFC 11)	15.0	20.0	75	18.8	20.0	94	70 - 130	22 *	20
Vinyl Chloride	15.5	20.0	77	19.3	20.0	97	70 - 130	22 *	20
cis-1,2-Dichloroethene	19.0	20.0	95	22.8	20.0	114	70 - 130	18	20
cis-1,3-Dichloropropene	18.8	20.0	94	21.4	20.0	107	70 - 130	13	20
trans-1,2-Dichloroethene	18.2	20.0	91	21.5	20.0	107	70 - 130	17	20
trans-1,3-Dichloropropene	19.2	20.0	96	21.6	20.0	108	70 - 130	11	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Project Name <b>Varian Beverly</b>		Project Number <b>150148-05000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)														
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE <b>1</b>														
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOAs's <input type="checkbox"/> 8260 <input type="checkbox"/> 8270 <input type="checkbox"/> 8271 GC/MS SVVOAs's <input type="checkbox"/> 8270 <input type="checkbox"/> 8271 GC VOAs's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 808 PCBs <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below)												Preservative Key	
150 Royall Street																	0. NONE	
Canton, MA 02021																	1. HCL	
Phone # <b>617-589-6102</b> E-mail <b>Raymond.Cadorette@CBI.com</b>																	2. HNO <sub>3</sub>	
Sampler's Signature <b>RXXY</b>		Sampler's Printed Name <b>Paul LeDoux</b>				3. H <sub>2</sub> SO <sub>4</sub>												
						4. NaOH												
						5. Zn. Acetate												
						6. MeOH												
						7. NaHSO <sub>4</sub>												
						8. Other _____												
						REMARKS/ ALTERNATE DESCRIPTION												
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME		MATRIX														
<b>CL2-BR (80)</b>		<b>4-29-14</b>	<b>1000</b>	<b>GW</b>	<b>3</b>	<b>3</b>												
<b>MW 2R (9)</b>		<b>↓</b>	<b>1030</b>		<b>3</b>	<b>3</b>												
<b>P-9R (4)</b>		<b>↓</b>	<b>1415</b>		<b>3</b>	<b>3</b>												
<b>TR-1</b>		<b>4-2-14</b>	<b>1100</b>		<b>3</b>	<b>3</b>												

SPECIAL INSTRUCTIONS/COMMENTS <b>Metals</b>  Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD & PDF of report to: <b>Catherine.Joe@CBI.Com.</b>	TURNAROUND REQUIREMENTS ___ RUSH (SURCHARGES APPLY) ___ 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day <input checked="" type="checkbox"/> Standard	REPORT REQUIREMENTS ___ I. Results Only ___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required) ___ III. Results + QC and Calibration Summaries ___ IV. Data Validation Report with Raw Data	INVOICE INFORMATION PO #: <b>873800</b> BILL TO: <b>CB&amp;I</b>
	REQUESTED REPORT DATE	Edata <input checked="" type="checkbox"/> Yes ___ No	<b>R1403116 7 Y</b> CB&I Environmental & Infrastructure Varian Beverly

STATE WHERE SAMPLES WERE COLLECTED:

RELINQUISHED BY <i>[Signature]</i>	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature <b>Paul LeDoux</b>	Signature <i>[Signature]</i>	Signature	Signature	Signature	Signature
Printed Name <b>CBI</b>	Printed Name <b>Angela Esmerian</b>	Printed Name	Printed Name	Printed Name	Printed Name
Firm <b>4-29-14 1600</b>	Firm <b>AL3</b>	Firm	Firm	Firm	Firm
Date/Time	Date/Time <b>4-30-14 8:50</b>	Date/Time	Date/Time	Date/Time	Date/Time



# Cooler Receipt and Preservation Check Form

Project/Client CBTI Folder Number R14-3116

Cooler received on 4-30-14 by: HE COURIER: ALS UPS FEDEX VELOCITY CLIENT

- Were custody seals on outside of cooler? YES  NO
- Were custody papers properly filled out (ink, signed, etc.)? YES  NO
- Did all bottles arrive in good condition (unbroken)? YES  NO
- Did VOA vials, Alkalinity, or Sulfide have significant\* air bubbles? YES  NO  N/A
- Were Ice or Ice packs present? YES  NO
- Where did the bottles originate? ALS/ROC, CLIENT
- Soil VOA samples received as: Bulk Jar Encore TerraCore Lab5035set N/A
- Temperature of cooler(s) upon receipt: 2.8

Is the temperature within 0° - 6° C?: Y N Y N Y N Y N Y N  
If No, Explain Below Date/Time Temperatures Taken: 4-30-14 @ 09:12

Thermometer ID: IR GUN#3 IR GUN#4 Reading From: Temp Blank Sample Bottle

### If out of Temperature, note packing/ice condition & Client Approval to Run Samples:

All Samples held in storage location R-002 by HE on 4-30-14 at 09:15  
5035 samples placed in storage location \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: MMW 4/30/14

Cooler Breakdown: Date: 5/1/14 Time: 1100 by: AD

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES  NO
- Did all bottle labels and tags agree with custody papers? YES  NO
- Were correct containers used for the tests indicated? YES  NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies: \_\_\_\_\_

pH	Reagent	YES		NO		Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes = All samples OK  No = Samples were preserved at lab as listed  PM OK to Adjust: _____
≥12	NaOH											
≤2	HNO <sub>3</sub>											
≤2	H <sub>2</sub> SO <sub>4</sub>											
<4	NaHSO <sub>4</sub>											
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)								
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-									*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet
	Zn Aceta	-	-									
	HCl	*	*	<u>4/12/20</u>	<u>3/15</u>							

Bottle lot numbers: Client covered  
Other Comments: \_\_\_\_\_

PC Secondary Review: MMW 5/5/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter  
G:\SMODOCS\Cooler Receipt 6.doc 11/6/12

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150148.02  
**Prepared By:** Dale Dailey **Date :** 6/5/2014  
**Matrix:** Air  
**Analyte Group :** Volatile Organics **Analytical Method :** EPA Method TO-15  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1403682  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
5/13/14	VOC TO-15		30 Days	5/21/14

**Sample temperature within QC limits:** NA - Air

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? Yes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :** NA

**Trip Blank ID :** NA

**Method Blank:** EPA TO-15 5/21/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method.

Various compounds for BLDG 5 SVE Influent and BLDG 5 SVE 1 have been flagged with an "E" as being outside the calibration range of the instrument. The samples were repeated at a dilution and both sets of data have been reported out.

All initial and continuing calibrations were compliant.

**Reviewed By:** Pernilla Haley 6/9/14



May 28, 2014

Service Request No: R1403682

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly Air Samples/150148**

Dear Mr. Cadorette:

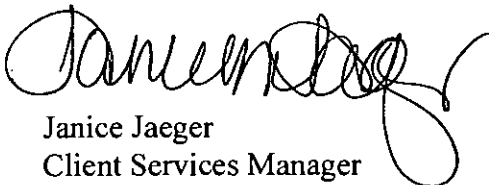
Enclosed are the results of the sample(s) submitted to our laboratory on May 20, 2014. For your reference, these analyses have been assigned our service request number **R1403682**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**



Janice Jaeger  
Client Services Manager

Page 1 of 24

CC: Pemilla Haley



## ALS Environmental

**Client:** CB&I.  
**Project:** Varian Beverly  
**Sample Matrix:** Air

**Service Request No.:** R1403682  
**Project No.:**  
**Date Received:** 05/20/14

### CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS environmental. This report contains analytical results for samples designated for Tier II, MASS. CAM deliverables. When appropriate to the method, blank and LCS results have been reported with each analytical test.

#### Sample Receipt

CB&I air samples were collected on 05/15/14 and received at ALS in good condition as noted on the receipt and preservation check form. The samples were stored in the laboratory at room temperature prior to analysis. See the ALS case narrative for a cross-reference between Client ID and ALS Job #.

#### TO - 15 Air Analysis

Seven air samples were analyzed for a site list of Volatile Organics by EPA method TO-15.

All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method.

Various compounds for BLDG 5 SVE Influent and BLDG 5 SVE 1 have been flagged with an "E" as being outside the calibration range of the instrument. The sample was repeated at a dilution and both sets of data have been reported out.

All initial and continuing calibrations were compliant.

All surrogate standard recoveries were within QC limits.

The Method blanks were free of contamination.

The LCS recoveries were all within QC limits of 70 – 130 %.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #:

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1403682-001-003

Matrices: Groundwater/Surface Water    Soil/Sediment    Drinking Water    Air  Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B <input checked="" type="checkbox"/>
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X Yes    No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X Yes    No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X Yes    No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X Yes    No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes    No Yes <input checked="" type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X Yes    No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X Yes    No <sup>1</sup>
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**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X Yes    No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes    X No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:

Position: Client Services  
Manager

Printed Name: Janice Jaeger

Date: 05/28/14

**00003**

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1403682

<u>Lab ID</u>	<u>Client ID</u>
R1403682-001	Bldg 5 SVE influent
R1403682-002	Bldg 5 SVE 1
R1403682-003	Bldg 5 SVE 2

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*



*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CACO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	

June 25, 2013

\* = Provisional Certification

Page 1 of 2

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COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014

<u>Analytes</u>	<u>Methods</u>
CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 385.1
PHOSPHORUS, TOTAL	EPA 385.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Bldg 5 SVE influent  
 Lab Code: R1403682-001

Service Request: R1403682  
 Date Collected: 5/15/14 1035  
 Date Received: 5/20/14

Analytical Method: TO-15

Date Analyzed: 5/21/14 1235  
 Canister Dilution Factor: 1.38

Initial Pressure (psig): -1.42 Final Pressure (psig): 3.59

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	91	0.91	0.91	0.36	0.36	U
74-83-9	Bromomethane	91	6.5	6.5	1.7	1.7	U
67-64-1	Acetone	91	130	76	56	32	
75-35-4	1,1-Dichloroethene	91	6.7	6.7	1.7	1.7	U
75-09-2	Methylene Chloride	91	5.8	5.8	1.7	1.7	U
156-60-5	trans-1,2-Dichloroethene	91	6.7	6.7	1.7	1.7	U
75-34-3	1,1-Dichloroethane	91	6.8	6.8	1.7	1.7	U
1634-04-4	Methyl tert-Butyl Ether	91	12	12	3.3	3.3	U
78-93-3	2-Butanone (MEK)	91	50	9.9	17	3.3	
156-59-2	cis-1,2-Dichloroethene	91	73	6.7	18	1.7	
67-66-3	Chloroform	91	8.2	8.2	1.7	1.7	U
107-06-2	1,2-Dichloroethane	91	6.8	6.8	1.7	1.7	U
71-55-6	1,1,1-Trichloroethane (TCA)	91	9.1	9.1	1.7	1.7	U
71-43-2	Benzene	91	5.3	5.3	1.7	1.7	U
56-23-5	Carbon Tetrachloride	91	1.1	1.1	0.17	0.17	U
78-87-5	1,2-Dichloropropane	91	7.7	7.7	1.7	1.7	U
75-27-4	Bromodichloromethane	91	2.3	2.3	0.34	0.34	U
79-01-6	Trichloroethene (TCE)	91	1000	0.91	190	0.17	E
123-91-1	1,4-Dioxane	91	76	76	21	21	U
10061-01-5	cis-1,3-Dichloropropene	91	15	15	3.3	3.3	U
108-10-1	4-Methyl-2-pentanone (MIBK)	91	14	14	3.3	3.3	U
10061-02-6	trans-1,3-Dichloropropene	91	7.6	7.6	1.7	1.7	U
79-00-5	1,1,2-Trichloroethane	91	9.1	9.1	1.7	1.7	U
108-88-3	Toluene	91	6.2	6.2	1.7	1.7	U
591-78-6	2-Hexanone	91	6.8	6.8	1.7	1.7	U
124-48-1	Dibromochloromethane	91	2.9	2.9	0.34	0.34	U
106-93-4	1,2-Dibromoethane (EDB)	91	2.6	2.6	0.34	0.34	U
127-18-4	Tetrachloroethene (PCE)	91	280	1.2	41	0.18	
108-90-7	Chlorobenzene	91	7.7	7.7	1.7	1.7	U
100-41-4	Ethylbenzene	91	14	14	3.3	3.3	U
179601-23-1	m,p-Xylenes	91	29	29	6.7	6.7	U
75-25-2	Bromoform	91	17	17	1.7	1.7	U
100-42-5	Styrene	91	14	14	3.3	3.3	U
95-47-6	o-Xylene	91	14	14	3.3	3.3	U
79-34-5	1,1,2,2-Tetrachloroethane	91	2.3	2.3	0.33	0.33	U
541-73-1	1,3-Dichlorobenzene	91	20	20	3.3	3.3	U
106-46-7	1,4-Dichlorobenzene	91	20	20	3.3	3.3	U





ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Bldg 5 SVE influent  
 Lab Code: R1403682-001

Service Request: R1403682  
 Date Collected: 5/15/14 1035  
 Date Received: 5/20/14

Analytical Method: TO-15

Date Analyzed: 5/21/14 1235  
 Canister Dilution Factor: 1.38

Initial Pressure (psig): -1.42      Final Pressure (psig): 3.59

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	91	20	20	3.3	3.3	U
91-20-3	Naphthalene	91	30	30	5.8	5.8	U
87-68-3	Hexachlorobutadiene	91	45	45	4.3	4.3	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	93	70-130	5/21/14 1235	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Bldg 5 SVE influent  
 Lab Code: R1403682-001  
 Run Type: Dilution

Service Request: R1403682  
 Date Collected: 5/15/14 1035  
 Date Received: 5/20/14

Analytical Method: TO-15

Date Analyzed: 5/21/14 1317  
 Canister Dilution Factor: 1.38

Initial Pressure (psig): -1.42      Final Pressure (psig): 3.59

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	50	1.7	1.7	0.65	0.65	U
74-83-9	Bromomethane	50	12	12	3.1	3.1	U
67-64-1	Acetone	50	140	140	58	58	U
75-35-4	1,1-Dichloroethene	50	12	12	3.1	3.1	U
75-09-2	Methylene Chloride	50	10	10	3.0	3.0	U
156-60-5	trans-1,2-Dichloroethene	50	12	12	3.1	3.1	U
75-34-3	1,1-Dichloroethane	50	12	12	3.1	3.1	U
1634-04-4	Methyl tert-Butyl Ether	50	22	22	6.1	6.1	U
78-93-3	2-Butanone (MEK)	50	48	18	16	6.1	D
156-59-2	cis-1,2-Dichloroethene	50	70	12	18	3.1	D
67-66-3	Chloroform	50	15	15	3.1	3.1	U
107-06-2	1,2-Dichloroethane	50	12	12	3.1	3.1	U
71-55-6	1,1,1-Trichloroethane (TCA)	50	17	17	3.0	3.0	U
71-43-2	Benzene	50	9.7	9.7	3.0	3.0	U
56-23-5	Carbon Tetrachloride	50	1.9	1.9	0.31	0.31	U
78-87-5	1,2-Dichloropropane	50	14	14	3.0	3.0	U
75-27-4	Bromodichloromethane	50	4.1	4.1	0.62	0.62	U
79-01-6	Trichloroethene (TCE)	50	960	1.7	180	0.31	D
123-91-1	1,4-Dioxane	50	140	140	38	38	U
10061-01-5	cis-1,3-Dichloropropene	50	28	28	6.1	6.1	U
108-10-1	4-Methyl-2-pentanone (MIBK)	50	25	25	6.1	6.1	U
10061-02-6	trans-1,3-Dichloropropene	50	14	14	3.0	3.0	U
79-00-5	1,1,2-Trichloroethane	50	17	17	3.0	3.0	U
108-88-3	Toluene	50	11	11	3.0	3.0	U
591-78-6	2-Hexanone	50	12	12	3.0	3.0	U
124-48-1	Dibromochloromethane	50	5.2	5.2	0.62	0.62	U
106-93-4	1,2-Dibromoethane (EDB)	50	4.7	4.7	0.61	0.61	U
127-18-4	Tetrachloroethene (PCE)	50	270	2.2	39	0.33	D
108-90-7	Chlorobenzene	50	14	14	3.1	3.1	U
100-41-4	Ethylbenzene	50	26	26	6.0	6.0	U
179601-23-1	m,p-Xylenes	50	53	53	12	12	U
75-25-2	Bromoform	50	31	31	3.0	3.0	U
100-42-5	Styrene	50	26	26	6.1	6.1	U
95-47-6	o-Xylene	50	26	26	6.0	6.0	U
79-34-5	1,1,2,2-Tetrachloroethane	50	4.1	4.1	0.60	0.60	U
541-73-1	1,3-Dichlorobenzene	50	36	36	6.1	6.1	U
106-46-7	1,4-Dichlorobenzene	50	36	36	6.1	6.1	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Bldg 5 SVE influent  
 Lab Code: R1403682-001  
 Run Type: Dilution

Service Request: R1403682  
 Date Collected: 5/15/14 1035  
 Date Received: 5/20/14

Analytical Method: TO-15

Date Analyzed: 5/21/14 1317  
 Canister Dilution Factor: 1.38

Initial Pressure (psig): -1.42      Final Pressure (psig): 3.59

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	50	36	36	6.1	6.1	U
91-20-3	Naphthalene	50	55	55	11	11	U
87-68-3	Hexachlorobutadiene	50	83	83	7.8	7.8	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	92	70-130	5/21/14 1317	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Bldg 5 SVE 1  
 Lab Code: R1403682-002

Service Request: R1403682  
 Date Collected: 5/15/14 1130  
 Date Received: 5/20/14

Analytical Method: TO-15

Date Analyzed: 5/21/14 1107  
 Canister Dilution Factor: 1.35

Initial Pressure (psig): -1.13      Final Pressure (psig): 3.60

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	8.9	9.1	9.1	3.6	3.6	U
74-83-9	Bromomethane	8.9	65	65	17	17	U
67-64-1	Acetone	8.9	760	760	320	320	U
75-35-4	1,1-Dichloroethene	8.9	67	67	17	17	U
75-09-2	Methylene Chloride	8.9	58	58	17	17	U
156-60-5	trans-1,2-Dichloroethene	8.9	67	67	17	17	U
75-34-3	1,1-Dichloroethane	8.9	68	68	17	17	U
1634-04-4	Methyl tert-Butyl Ether	8.9	120	120	33	33	U
78-93-3	2-Butanone (MEK)	8.9	99	99	33	33	U
156-59-2	cis-1,2-Dichloroethene	8.9	230	67	59	17	
67-66-3	Chloroform	8.9	82	82	17	17	U
107-06-2	1,2-Dichloroethane	8.9	68	68	17	17	U
71-55-6	1,1,1-Trichloroethane (TCA)	8.9	91	91	17	17	U
71-43-2	Benzene	8.9	53	53	17	17	U
56-23-5	Carbon Tetrachloride	8.9	11	11	1.7	1.7	U
78-87-5	1,2-Dichloropropane	8.9	77	77	17	17	U
75-27-4	Bromodichloromethane	8.9	23	23	3.4	3.4	U
79-01-6	Trichloroethene (TCE)	8.9	10000	9.1	1900	1.7	E
123-91-1	1,4-Dioxane	8.9	760	760	210	210	U
10061-01-5	cis-1,3-Dichloropropene	8.9	150	150	33	33	U
108-10-1	4-Methyl-2-pentanone (MIBK)	8.9	140	140	33	33	U
10061-02-6	trans-1,3-Dichloropropene	8.9	76	76	17	17	U
79-00-5	1,1,2-Trichloroethane	8.9	91	91	17	17	U
108-88-3	Toluene	8.9	62	62	17	17	U
591-78-6	2-Hexanone	8.9	68	68	17	17	U
124-48-1	Dibromochloromethane	8.9	29	29	3.4	3.4	U
106-93-4	1,2-Dibromoethane (EDB)	8.9	26	26	3.4	3.4	U
127-18-4	Tetrachloroethene (PCE)	8.9	920	12	140	1.8	
108-90-7	Chlorobenzene	8.9	77	77	17	17	U
100-41-4	Ethylbenzene	8.9	140	140	33	33	U
179601-23-1	m,p-Xylenes	8.9	290	290	67	67	U
75-25-2	Bromoform	8.9	170	170	17	17	U
100-42-5	Styrene	8.9	140	140	34	34	U
95-47-6	o-Xylene	8.9	140	140	33	33	U
79-34-5	1,1,2,2-Tetrachloroethane	8.9	23	23	3.3	3.3	U
541-73-1	1,3-Dichlorobenzene	8.9	200	200	33	33	U
106-46-7	1,4-Dichlorobenzene	8.9	200	200	33	33	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Bldg 5 SVE 1  
 Lab Code: R1403682-002

Service Request: R1403682  
 Date Collected: 5/15/14 1130  
 Date Received: 5/20/14

Analytical Method: TO-15

Date Analyzed: 5/21/14 1107  
 Canister Dilution Factor: 1.35

Initial Pressure (psig): -1.13      Final Pressure (psig): 3.60

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	8.9	200	200	33	33	U
91-20-3	Naphthalene	8.9	300	300	58	58	U
87-68-3	Hexachlorobutadiene	8.9	460	460	43	43	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	94	70-130	5/21/14 1107	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Bldg 5 SVE 1  
 Lab Code: R1403682-002  
 Run Type: Dilution

Service Request: R1403682  
 Date Collected: 5/15/14 1130  
 Date Received: 5/20/14

Analytical Method: TO-15

Date Analyzed: 5/21/14 1153  
 Canister Dilution Factor: 1.35

Initial Pressure (psig): -1.13 Final Pressure (psig): 3.60

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	5.0	16	16	6.3	6.3	U
74-83-9	Bromomethane	5.0	120	120	30	30	U
67-64-1	Acetone	5.0	1400	1400	570	570	U
75-35-4	1,1-Dichloroethene	5.0	120	120	30	30	U
75-09-2	Methylene Chloride	5.0	100	100	30	30	U
156-60-5	trans-1,2-Dichloroethene	5.0	120	120	30	30	U
75-34-3	1,1-Dichloroethane	5.0	120	120	30	30	U
1634-04-4	Methyl tert-Butyl Ether	5.0	210	210	59	59	U
78-93-3	2-Butanone (MEK)	5.0	180	180	60	60	U
156-59-2	cis-1,2-Dichloroethene	5.0	230	120	58	30	D
67-66-3	Chloroform	5.0	150	150	30	30	U
107-06-2	1,2-Dichloroethane	5.0	120	120	30	30	U
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	160	160	30	30	U
71-43-2	Benzene	5.0	95	95	30	30	U
56-23-5	Carbon Tetrachloride	5.0	19	19	3.0	3.0	U
78-87-5	1,2-Dichloropropane	5.0	140	140	30	30	U
75-27-4	Bromodichloromethane	5.0	41	41	6.0	6.0	U
79-01-6	Trichloroethene (TCE)	5.0	9900	16	1800	3.0	D
123-91-1	1,4-Dioxane	5.0	1400	1400	370	370	U
10061-01-5	cis-1,3-Dichloropropene	5.0	270	270	59	59	U
108-10-1	4-Methyl-2-pentanone (MIBK)	5.0	240	240	59	59	U
10061-02-6	trans-1,3-Dichloropropene	5.0	140	140	30	30	U
79-00-5	1,1,2-Trichloroethane	5.0	160	160	30	30	U
108-88-3	Toluene	5.0	110	110	29	29	U
591-78-6	2-Hexanone	5.0	120	120	30	30	U
124-48-1	Dibromochloromethane	5.0	51	51	6.0	6.0	U
106-93-4	1,2-Dibromoethane (EDB)	5.0	46	46	6.0	6.0	U
127-18-4	Tetrachloroethene (PCE)	5.0	890	22	130	3.2	D
108-90-7	Chlorobenzene	5.0	140	140	30	30	U
100-41-4	Ethylbenzene	5.0	260	260	59	59	U
179601-23-1	m,p-Xylenes	5.0	520	520	120	120	U
75-25-2	Bromoform	5.0	310	310	30	30	U
100-42-5	Styrene	5.0	250	250	60	60	U
95-47-6	o-Xylene	5.0	260	260	59	59	U
79-34-5	1,1,2,2-Tetrachloroethane	5.0	41	41	5.9	5.9	U
541-73-1	1,3-Dichlorobenzene	5.0	360	360	59	59	U
106-46-7	1,4-Dichlorobenzene	5.0	360	360	59	59	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Bldg 5 SVE 1  
 Lab Code: R1403682-002  
 Run Type: Dilution

Service Request: R1403682  
 Date Collected: 5/15/14 1130  
 Date Received: 5/20/14

Analytical Method: TO-15

Date Analyzed: 5/21/14 1153  
 Canister Dilution Factor: 1.35

Initial Pressure (psig): -1.13      Final Pressure (psig): 3.60

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	5.0	360	360	59	59	U
91-20-3	Naphthalene	5.0	540	540	100	100	U
87-68-3	Hexachlorobutadiene	5.0	810	810	76	76	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	95	70-130	5/21/14 1153	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Bldg 5 SVE 2  
 Lab Code: R1403682-003

Service Request: R1403682  
 Date Collected: 5/13/14 1105  
 Date Received: 5/20/14

Analytical Method: TO-15

Date Analyzed: 5/21/14 1443  
 Canister Dilution Factor: 1.36

Initial Pressure (psig): -1.23      Final Pressure (psig): 3.67

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	175	0.47	0.47	0.18	0.18	U
74-83-9	Bromomethane	175	3.3	3.3	0.86	0.86	U
67-64-1	Acetone	175	90	39	38	16	
75-35-4	1,1-Dichloroethene	175	3.4	3.4	0.86	0.86	U
75-09-2	Methylene Chloride	175	3.0	3.0	0.85	0.85	U
156-60-5	trans-1,2-Dichloroethene	175	3.4	3.4	0.86	0.86	U
75-34-3	1,1-Dichloroethane	175	3.5	3.5	0.86	0.86	U
1634-04-4	Methyl tert-Butyl Ether	175	6.1	6.1	1.7	1.7	U
78-93-3	2-Butanone (MEK)	175	51	5.1	17	1.7	
156-59-2	cis-1,2-Dichloroethene	175	53	3.4	13	0.86	
67-66-3	Chloroform	175	4.2	4.2	0.86	0.86	U
107-06-2	1,2-Dichloroethane	175	3.5	3.5	0.86	0.86	U
71-55-6	1,1,1-Trichloroethane (TCA)	175	5.1	4.7	0.94	0.85	
71-43-2	Benzene	175	2.7	2.7	0.85	0.85	U
56-23-5	Carbon Tetrachloride	175	0.54	0.54	0.087	0.087	U
78-87-5	1,2-Dichloropropane	175	4.0	4.0	0.86	0.86	U
75-27-4	Bromodichloromethane	175	1.2	1.2	0.17	0.17	U
79-01-6	Trichloroethene (TCE)	175	260	0.47	49	0.087	
123-91-1	1,4-Dioxane	175	39	39	11	11	U
10061-01-5	cis-1,3-Dichloropropene	175	7.8	7.8	1.7	1.7	U
108-10-1	4-Methyl-2-pentanone (MIBK)	175	13	7.0	3.2	1.7	
10061-02-6	trans-1,3-Dichloropropene	175	3.9	3.9	0.86	0.86	U
79-00-5	1,1,2-Trichloroethane	175	4.7	4.7	0.85	0.85	U
108-88-3	Toluene	175	3.2	3.2	0.85	0.85	U
591-78-6	2-Hexanone	175	3.5	3.5	0.85	0.85	U
124-48-1	Dibromochloromethane	175	1.5	1.5	0.17	0.17	U
106-93-4	1,2-Dibromoethane (EDB)	175	1.3	1.3	0.17	0.17	U
127-18-4	Tetrachloroethene (PCE)	175	200	0.62	29	0.092	
108-90-7	Chlorobenzene	175	4.0	4.0	0.86	0.86	U
100-41-4	Ethylbenzene	175	7.4	7.4	1.7	1.7	U
179601-23-1	m,p-Xylenes	175	15	15	3.4	3.4	U
75-25-2	Bromoform	175	8.9	8.9	0.86	0.86	U
100-42-5	Styrene	175	7.3	7.3	1.7	1.7	U
95-47-6	o-Xylene	175	7.4	7.4	1.7	1.7	U
79-34-5	1,1,2,2-Tetrachloroethane	175	1.2	1.2	0.17	0.17	U
541-73-1	1,3-Dichlorobenzene	175	10	10	1.7	1.7	U
106-46-7	1,4-Dichlorobenzene	175	10	10	1.7	1.7	U



**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly Air Samples/150148  
**Sample Matrix:** Air  
**Sample Name:** Bldg 5 SVE 2  
**Lab Code:** R1403682-003

**Service Request:** R1403682  
**Date Collected:** 5/13/14 1105  
**Date Received:** 5/20/14

**Analytical Method:** TO-15

**Date Analyzed:** 5/21/14 1443  
**Canister Dilution Factor:** 1.36

Initial Pressure (psig): -1.23                      Final Pressure (psig): 3.67

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	175	10	10	1.7	1.7	U
91-20-3	Naphthalene	175	16	16	3.0	3.0	U
87-68-3	Hexachlorobutadiene	175	23	23	2.2	2.2	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	96	70-130	5/21/14 1443	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1405598-04

Service Request: R1403682  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 5/21/14 1020

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.060	0.060	0.023	0.023	U
74-83-9	Bromomethane	1000	0.43	0.43	0.11	0.11	U
67-64-1	Acetone	1000	5.0	5.0	2.1	2.1	U
75-35-4	1,1-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-09-2	Methylene Chloride	1000	0.38	0.38	0.11	0.11	U
156-60-5	trans-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-34-3	1,1-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
1634-04-4	Methyl tert-Butyl Ether	1000	0.79	0.79	0.22	0.22	U
78-93-3	2-Butanone (MEK)	1000	0.65	0.65	0.22	0.22	U
156-59-2	cis-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
67-66-3	Chloroform	1000	0.54	0.54	0.11	0.11	U
107-06-2	1,2-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.60	0.60	0.11	0.11	U
71-43-2	Benzene	1000	0.35	0.35	0.11	0.11	U
56-23-5	Carbon Tetrachloride	1000	0.070	0.070	0.011	0.011	U
78-87-5	1,2-Dichloropropane	1000	0.51	0.51	0.11	0.11	U
75-27-4	Bromodichloromethane	1000	0.15	0.15	0.022	0.022	U
79-01-6	Trichloroethene (TCE)	1000	0.060	0.060	0.011	0.011	U
123-91-1	1,4-Dioxane	1000	5.0	5.0	1.4	1.4	U
10061-01-5	cis-1,3-Dichloropropene	1000	1.0	1.0	0.22	0.22	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1000	0.90	0.90	0.22	0.22	U
10061-02-6	trans-1,3-Dichloropropene	1000	0.50	0.50	0.11	0.11	U
79-00-5	1,1,2-Trichloroethane	1000	0.60	0.60	0.11	0.11	U
108-88-3	Toluene	1000	0.41	0.41	0.11	0.11	U
591-78-6	2-Hexanone	1000	0.45	0.45	0.11	0.11	U
124-48-1	Dibromochloromethane	1000	0.19	0.19	0.022	0.022	U
106-93-4	1,2-Dibromoethane (EDB)	1000	0.17	0.17	0.022	0.022	U
127-18-4	Tetrachloroethene (PCE)	1000	0.080	0.080	0.012	0.012	U
108-90-7	Chlorobenzene	1000	0.51	0.51	0.11	0.11	U
100-41-4	Ethylbenzene	1000	0.95	0.95	0.22	0.22	U
179601-23-1	m,p-Xylenes	1000	1.9	1.9	0.44	0.44	U
75-25-2	Bromoform	1000	1.1	1.1	0.11	0.11	U
100-42-5	Styrene	1000	0.94	0.94	0.22	0.22	U
95-47-6	o-Xylene	1000	0.95	0.95	0.22	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.15	0.15	0.022	0.022	U
541-73-1	1,3-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
106-46-7	1,4-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1405598-04

Service Request: R1403682  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 5/21/14 1020

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
91-20-3	Naphthalene	1000	2.0	2.0	0.38	0.38	U
87-68-3	Hexachlorobutadiene	1000	3.0	3.0	0.28	0.28	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	96	70-130	5/21/14 1020	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air

Service Request: R1403682  
 Date Analyzed: 5/21/14

Lab Control Sample Summary  
 Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units: µg/m<sup>3</sup>  
 Basis: NA

Analysis Lot: 394159

Lab Control Sample  
 RQ1405598-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Vinyl Chloride	5.82	6.58	88	70 - 130
Bromomethane	8.41	9.80	86	70 - 130
Acetone	6.30	6.47	97	50 - 150
1,1-Dichloroethene	9.62	10.3	93	70 - 130
Methylene Chloride	9.21	8.94	103	70 - 130
trans-1,2-Dichloroethene	10.3	10.4	99	70 - 130
1,1-Dichloroethane	10.5	10.4	101	70 - 130
Methyl tert-Butyl Ether	9.43	9.55	99	70 - 130
2-Butanone (MEK)	7.76	7.81	99	70 - 130
cis-1,2-Dichloroethene	10.5	10.4	101	70 - 130
Chloroform	12.4	13.2	94	70 - 130
1,2-Dichloroethane	9.85	10.6	93	70 - 130
1,1,1-Trichloroethane (TCA)	12.9	14.3	90	70 - 130
Benzene	8.43	8.38	101	70 - 130
Carbon Tetrachloride	14.7	16.0	92	70 - 130
1,2-Dichloropropane	12.0	12.1	99	70 - 130
Bromodichloromethane	16.9	17.4	97	70 - 130
Trichloroethene (TCE)	13.4	14.0	96	70 - 130
1,4-Dioxane	10.0	9.37	107	50 - 150
cis-1,3-Dichloropropene	12.4	12.5	100	70 - 130
4-Methyl-2-pentanone (MIBK)	9.67	10.5	92	70 - 130
trans-1,3-Dichloropropene	10.7	10.9	98	70 - 130
1,1,2-Trichloroethane	14.1	14.5	97	70 - 130
Toluene	9.89	9.98	99	70 - 130
2-Hexanone	10.4	11.1	94	70 - 130
Dibromochloromethane	22.1	23.4	94	70 - 130
1,2-Dibromoethane (EDB)	19.2	20.0	96	70 - 130
Tetrachloroethene (PCE)	17.3	18.0	96	70 - 130
Chlorobenzene	12.4	12.3	101	70 - 130
Ethylbenzene	11.5	11.5	100	70 - 130
m,p-Xylenes	21.6	22.4	97	70 - 130
Bromoform	27.0	26.6	102	70 - 130
Styrene	10.6	11.1	95	70 - 130
o-Xylene	11.1	11.7	95	70 - 130
1,1,2,2-Tetrachloroethane	17.2	18.5	93	70 - 130
1,3-Dichlorobenzene	13.9	14.7	94	70 - 130
1,4-Dichlorobenzene	13.5	14.9	91	70 - 130
1,2-Dichlorobenzene	13.7	14.6	94	70 - 130

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly Air Samples/150148  
Sample Matrix: Air

Service Request: R1403682  
Date Analyzed: 5/21/14

Lab Control Sample Summary  
Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units: µg/m³  
Basis: NA

Analysis Lot: 394159

Lab Control Sample  
RQ1405598-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Naphthalene	15.2	11.0	138	50 - 150
Hexachlorobutadiene	37.0	23.5	158 *	50 - 150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

### CHAIN OF CUSTODY - AIR

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 | 585.288.5380 | 585.288.8475 (fax) | www.caslab.com

Requested Turnaround Time in Business Days from Receipt, please circle: 1 Day   2 Day   3 Day   4 Day   5 Day   10 Day-Standard		CAS Project #:							
Company Name: <b>CB&amp;I</b>		Project Name: <b>Varian Beverly</b>		CAS Contact:					
Address: <b>150 Royall Street</b>		Project Number:		<b>Analysis Method and/or Analytes</b>					
City, State, Zip: <b>Canton, MA 02021</b>		P.O. #/Billing Information:							
Project Manager: <b>Raymond Cadorette</b>		Sampler (Print & Sign): <i>Paul Hedoux</i>		<b>Comments Specific Instructions</b>					
Phone: <b>617-589-6102</b>	Fax: <b>617-589-5495</b>								
Email (for result reporting): <b>Raymond.Cadorette@Shawgrp.com</b>		<b>T015 (Site List)</b>							
Client Sample ID	Laboratory ID Number					Date Collected	Time Collected	Canister ID	Flow Controller ID
<i>Bldg 5 SVE influent</i>						<i>5-13-14</i>	<i>1035</i>	<i>SLC00107</i>	<i>NA</i>
<i>Bldg 5 SVE 1</i>				<i>5-13-14</i>	<i>1130</i>	<i>SLC00108</i>	<i>NA</i>		
<i>Bldg 9 SVE 2</i>				<i>5-13-14</i>	<i>1105</i>	<i>SLC00103</i>	<i>NA</i>		
What State were samples collected in: <i>MA</i>		Project Requirements (MRLs, QAPP, etc.)							
Report Tier Levels - please select: Tier I (Results/Default, if not specified) _____ Tier II (Results + QC) _____ Tier III (CLP Forms Only) _____ Tier IV (Data Validation) _____		EDD required: YES / NO Type: <i>GISKey</i> EDD Units: <i>ug/m3 &amp; ppmv</i>							
Relinquished by: (Signature) <i>[Signature]</i>	Date: <i>5-13-14</i>	Time: <i>1200</i>	Received by: (Signature) <i>[Signature]</i>	Date: <i>5/20/14</i>	Time: <i>0845</i>				
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:				
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:				

**R1403682**      **7 Y**

CB&I Environmental & Infrastructure  
Varian Beverly Air Samples





# Cooler Receipt and Preservation Check Form

Project/Client CBT T Folder Number R14-3682

Cooler received on 5/20/14 by: [Signature] COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y <u>(N)</u>
2	Custody papers properly completed (ink, signed)?	<u>(Y)</u> N
3	Did all bottles arrive in good condition (unbroken)?	<u>(Y)</u> N
4	Circle: Wet Ice Dry Ice Gel packs present?	Y <u>(N)</u>

5a	Perchlorate samples have required headspace?	Y N <u>(NA)</u>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <u>(NA)</u>
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as:	Bulk Encore 5035set <u>(NA)</u>

8. Temperature Readings Date: 5/20/14 Time: 0855 ID: IR#3 IR#4 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>AIR</u>							
Correction Factor (°C)								
Corrected Temp (°C)	<u>AIR</u>							
Within 0-6°C?	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: \_\_\_\_\_ Ice melted \_\_\_\_\_ Poorly Packed \_\_\_\_\_ Same Day Rule \_\_\_\_\_  
& Client Approval to Run Samples: \_\_\_\_\_ Standing Approval \_\_\_\_\_ Client aware at drop-off \_\_\_\_\_ Client notified by: \_\_\_\_\_

All samples held in storage location: SND by [Signature] on 5/20/14 at ORSS  
5035 samples placed in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: JMS 5/20/14

Cooler Breakdown: Date: 5/20/14 Time: 1316 by: [Signature]

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were correct containers used for the tests indicated? YES NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A 5/20/14

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO <sub>3</sub>								
≤2	H <sub>2</sub> SO <sub>4</sub>								
<4	NaHSO <sub>4</sub>								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CN), ascorbic (phenol).					
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust: \_\_\_\_\_

\*\*Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: \_\_\_\_\_  
Other Comments: \_\_\_\_\_

PC Secondary Review: JMS 5/22/14

\*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150148-02  
**Prepared By:** Dale Dailey **Date :** 7/1/2014  
**Matrix:** Air  
**Analyte Group :** Volatile Organics **Analytical Method :** EPA Method TO-15  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** 1404674  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
6/17/14	VOC TO-15		30 Days	6/20, 6/23/14

**Sample temperature within QC limits:** NA - Air

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? No

If no, list sample ID where range was exceeded: See Notes

**Equipment Field Blank ID :** NA

**Trip Blank ID :** NA

**Method Blank:** EPA TO-15 6/20/14, 6/23/14

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

(1) All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method.

(2) Various compounds in BLDG 5-1 and BLDG 5-3 were outside the calibration range of the instrument. The samples were repeated at dilutions and both set of data have been reported out.

(3) All initial and continuing calibrations were compliant.

(4) All LCS and LCSD recoveries were within QC limits except Hexachlorobutadiene was outside limits high in batch 398632 and batch 398637. The data was not impacted since the analytical results were non-detect for this analyte in these batches.

**Reviewed By:** Pernilla Haley 7/24/14





June 26, 2014

Service Request No: R1404674

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly Air Samples/150148**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on June 19, 2014. For your reference, these analyses have been assigned our service request number **R1404674**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

  
Janice Jaeger  
Client Services Manager

Page 1 of 28

CC: Pemilla Haley

**ALS Environmental**

**Client:** CB&I.  
**Project:** Varian Beverly  
**Sample Matrix:** Air

**Service Request No.:** R1404674  
**Project No.:**  
**Date Received:** 06/19/14

**CASE NARRATIVE**

All analyses were performed consistent with the quality assurance program of ALS environmental. This report contains analytical results for samples designated for Tier II, MASS. CAM deliverables. When appropriate to the method, blank and LCS results have been reported with each analytical test.

**Sample Receipt**

CB&I air samples were collected on 06/17/14 and received at ALS in good condition as noted on the receipt and preservation check form. The samples were stored in the laboratory at room temperature prior to analysis. See the ALS case narrative for a cross-reference between Client ID and ALS Job #.

**TO - 15 Air Analysis**

Three air samples were analyzed for a site list of Volatile Organics by EPA method TO-15.

All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method.

Various compounds for BLDG 5-1 SVE Influent and BLDG 5-3 have been flagged with an "E" as being outside the calibration range of the instrument. The samples were repeated at dilutions and both sets of data have been reported out.

All initial and continuing calibrations were compliant.

All surrogate standard recoveries were within QC limits.

The Method blanks were free of contamination.

The LCS recoveries were all within QC limits of 70 – 130 % except Hexachlorobutadiene was outside limits high on the 06/20/14 and 06/23/14 LCS' and has been flagged with an "\*\*\*". No data was affected.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #:

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
 R1404674-001-003

 Matrices: Groundwater/Surface Water    Soil/Sediment    Drinking Water    Air  Other:

**CAM Protocol (check all that apply below):**

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B <input checked="" type="checkbox"/>
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X	Yes	No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X	Yes	No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X	Yes	No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X	Yes	No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes	No	Yes <input checked="" type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X	Yes	No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X	Yes	No <sup>1</sup>
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**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X	Yes	No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes	X	No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

 Signature: 

 Position: Client Services  
Manager

 Printed Name: Janice Jaeger

 Date: 06/26/14      **00003**

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1404674

<u>Lab ID</u>	<u>Client ID</u>
R1404674-001	BLDG 5-1
R1404674-002	BLDG 5-2
R1404674-003	BLDG 5-3

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*



*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: **01 JUL 2013**

**M-NY032      ALS ENVIRONMENTAL ROCHESTER  
                 ROCHESTER NY**

**NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014**

<u>Analytes</u>	<u>Methods</u>
ALUMINUM	EPA 200.7
ANTIMONY	EPA 200.7
ANTIMONY	EPA 200.8
ARSENIC	EPA 200.7
ARSENIC	EPA 200.8
BERYLLIUM	EPA 200.7
BERYLLIUM	EPA 200.8
CADMIUM	EPA 200.7
CADMIUM	EPA 200.8
CHROMIUM	EPA 200.7
CHROMIUM	EPA 200.8
COBALT	EPA 200.7
COBALT	EPA 200.8
COPPER	EPA 200.7
COPPER	EPA 200.8
IRON	EPA 200.7
LEAD	EPA 200.7
LEAD	EPA 200.8
MANGANESE	EPA 200.7
MANGANESE	EPA 200.8
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
MOLYBDENUM	EPA 200.8
NICKEL	EPA 200.7
NICKEL	EPA 200.8
SELENIUM	EPA 200.7
SELENIUM	EPA 200.8
SILVER	EPA 200.7
SILVER	EPA 200.8
THALLIUM	EPA 200.7
THALLIUM	EPA 200.8
VANADIUM	EPA 200.7
VANADIUM	EPA 200.8
ZINC	EPA 200.7
ZINC	EPA 200.8
SPECIFIC CONDUCTIVITY	EPA 120.1
TOTAL DISSOLVED SOLIDS	SM 2540C
HARDNESS (CACO3), TOTAL	SM 2340C
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
ALKALINITY, TOTAL	SM 2320B

June 25, 2013

\*= Provisional Certification

Page 1 of 2

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COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2013      Expiration Date      30 JUN 2014

<u>Analytes</u>	<u>Methods</u>
CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 385.1
PHOSPHORUS, TOTAL	EPA 385.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608





ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-1  
 Lab Code: R1404674-001

Service Request: R1404674  
 Date Collected: 6/17/14 1505  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/20/14 1348  
 Canister Dilution Factor: 1.63

Initial Pressure (psig): -3.44 Final Pressure (psig): 3.64

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	5	20	20	7.7	7.7	U
74-83-9	Bromomethane	5	140	140	36	36	U
67-64-1	Acetone	5	4100	1600	1700	690	D
75-35-4	1,1-Dichloroethene	5	140	140	36	36	U
75-09-2	Methylene Chloride	5	120	120	36	36	U
156-60-5	trans-1,2-Dichloroethene	5	140	140	36	36	U
75-34-3	1,1-Dichloroethane	5	150	150	36	36	U
1634-04-4	Methyl tert-Butyl Ether	5	260	260	71	71	U
78-93-3	2-Butanone (MEK)	5	210	210	72	72	D
156-59-2	cis-1,2-Dichloroethene	5	140	140	36	36	U
67-66-3	Chloroform	5	180	180	36	36	U
107-06-2	1,2-Dichloroethane	5	150	150	36	36	U
71-55-6	1,1,1-Trichloroethane (TCA)	5	200	200	36	36	U
71-43-2	Benzene	5	110	110	36	36	U
56-23-5	Carbon Tetrachloride	5	23	23	3.6	3.6	U
78-87-5	1,2-Dichloropropane	5	170	170	36	36	U
75-27-4	Bromodichloromethane	5	49	49	7.3	7.3	U
79-01-6	Trichloroethene (TCE)	5	20	20	3.6	3.6	U
123-91-1	1,4-Dioxane	5	1600	1600	450	450	U
10061-01-5	cis-1,3-Dichloropropene	5	330	330	72	72	U
108-10-1	4-Methyl-2-pentanone (MIBK)	5	290	290	72	72	U
10061-02-6	trans-1,3-Dichloropropene	5	160	160	36	36	U
79-00-5	1,1,2-Trichloroethane	5	200	200	36	36	U
108-88-3	Toluene	5	130	130	35	35	U
591-78-6	2-Hexanone	5	150	150	36	36	U
124-48-1	Dibromochloromethane	5	62	62	7.3	7.3	U
106-93-4	1,2-Dibromoethane (EDB)	5	55	55	7.2	7.2	U
127-18-4	Tetrachloroethene (PCE)	5	26	26	3.8	3.8	U
108-90-7	Chlorobenzene	5	170	170	36	36	U
100-41-4	Ethylbenzene	5	310	310	71	71	U
179601-23-1	m,p-Xylenes	5	620	620	140	140	U
75-25-2	Bromoform	5	370	370	36	36	U
100-42-5	Styrene	5	310	310	72	72	U
95-47-6	o-Xylene	5	310	310	71	71	U
79-34-5	1,1,2,2-Tetrachloroethane	5	49	49	7.1	7.1	U
541-73-1	1,3-Dichlorobenzene	5	430	430	72	72	U
106-46-7	1,4-Dichlorobenzene	5	430	430	72	72	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-1  
 Lab Code: R1404674-001

Service Request: R1404674  
 Date Collected: 6/17/14 1505  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/20/14 1348  
 Canister Dilution Factor: 1.63

Initial Pressure (psig): -3.44      Final Pressure (psig): 3.64

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	5	430	430	72	72	U
91-20-3	Naphthalene	5	650	650	120	120	U
87-68-3	Hexachlorobutadiene	5	980	980	92	92	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	102	70-130	6/20/14 1348	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-1  
 Lab Code: R1404674-001  
 Run Type: Dilution

Service Request: R1404674  
 Date Collected: 6/17/14 1505  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 1618  
 Canister Dilution Factor: 1.63

Initial Pressure (psig): -3.44      Final Pressure (psig): 3.64

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	50	2.0	2.0	0.77	0.77	U
74-83-9	Bromomethane	50	14	14	3.6	3.6	U
67-64-1	Acetone	50	4100	160	1700	69	E
75-35-4	1,1-Dichloroethene	50	14	14	3.6	3.6	U
75-09-2	Methylene Chloride	50	12	12	3.6	3.6	U
156-60-5	trans-1,2-Dichloroethene	50	14	14	3.6	3.6	U
75-34-3	1,1-Dichloroethane	50	15	15	3.6	3.6	U
1634-04-4	Methyl tert-Butyl Ether	50	26	26	7.1	7.1	U
78-93-3	2-Butanone (MEK)	50	220	21	76	7.2	U
156-59-2	cis-1,2-Dichloroethene	50	14	14	3.6	3.6	U
67-66-3	Chloroform	50	18	18	3.6	3.6	U
107-06-2	1,2-Dichloroethane	50	15	15	3.6	3.6	U
71-55-6	1,1,1-Trichloroethane (TCA)	50	20	20	3.6	3.6	U
71-43-2	Benzene	50	11	11	3.6	3.6	U
56-23-5	Carbon Tetrachloride	50	2.3	2.3	0.36	0.36	U
78-87-5	1,2-Dichloropropane	50	17	17	3.6	3.6	U
75-27-4	Bromodichloromethane	50	4.9	4.9	0.73	0.73	U
79-01-6	Trichloroethene (TCE)	50	7.2	2.0	1.3	0.36	U
123-91-1	1,4-Dioxane	50	160	160	45	45	U
10061-01-5	cis-1,3-Dichloropropene	50	33	33	7.2	7.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	50	49	29	12	7.2	U
10061-02-6	trans-1,3-Dichloropropene	50	16	16	3.6	3.6	U
79-00-5	1,1,2-Trichloroethane	50	20	20	3.6	3.6	U
108-88-3	Toluene	50	13	13	3.5	3.5	U
591-78-6	2-Hexanone	50	15	15	3.6	3.6	U
124-48-1	Dibromochloromethane	50	6.2	6.2	0.73	0.73	U
106-93-4	1,2-Dibromoethane (EDB)	50	5.5	5.5	0.72	0.72	U
127-18-4	Tetrachloroethene (PCE)	50	6.9	2.6	1.0	0.38	U
108-90-7	Chlorobenzene	50	17	17	3.6	3.6	U
100-41-4	Ethylbenzene	50	31	31	7.1	7.1	U
179601-23-1	m,p-Xylenes	50	62	62	14	14	U
75-25-2	Bromoform	50	37	37	3.6	3.6	U
100-42-5	Styrene	50	31	31	7.2	7.2	U
95-47-6	o-Xylene	50	31	31	7.1	7.1	U
79-34-5	1,1,2,2-Tetrachloroethane	50	4.9	4.9	0.71	0.71	U
541-73-1	1,3-Dichlorobenzene	50	43	43	7.2	7.2	U
106-46-7	1,4-Dichlorobenzene	50	43	43	7.2	7.2	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-1  
 Lab Code: R1404674-001  
 Run Type: Dilution

Service Request: R1404674  
 Date Collected: 6/17/14 1505  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 1618  
 Canister Dilution Factor: 1.63

Initial Pressure (psig): -3.44      Final Pressure (psig): 3.64

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	50	43	43	7.2	7.2	U
91-20-3	Naphthalene	50	65	65	12	12	U
87-68-3	Hexachlorobutadiene	50	98	98	9.2	9.2	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	100	70-130	6/23/14 1618	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-2  
 Lab Code: R1404674-002

Service Request: R1404674  
 Date Collected: 6/17/14 1504  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 1701  
 Canister Dilution Factor: 1.50

Initial Pressure (psig): -2.60 Final Pressure (psig): 3.51

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	50	1.8	1.8	0.70	0.70	U
74-83-9	Bromomethane	50	13	13	3.3	3.3	U
67-64-1	Acetone	50	660	150	280	63	
75-35-4	1,1-Dichloroethene	50	13	13	3.3	3.3	U
75-09-2	Methylene Chloride	50	11	11	3.3	3.3	U
156-60-5	trans-1,2-Dichloroethene	50	13	13	3.3	3.3	U
75-34-3	1,1-Dichloroethane	50	14	14	3.3	3.3	U
1634-04-4	Methyl tert-Butyl Ether	50	24	24	6.6	6.6	U
78-93-3	2-Butanone (MEK)	50	270	20	93	6.6	
156-59-2	cis-1,2-Dichloroethene	50	13	13	3.3	3.3	U
67-66-3	Chloroform	50	16	16	3.3	3.3	U
107-06-2	1,2-Dichloroethane	50	14	14	3.3	3.3	U
71-55-6	1,1,1-Trichloroethane (TCA)	50	18	18	3.3	3.3	U
71-43-2	Benzene	50	11	11	3.3	3.3	U
56-23-5	Carbon Tetrachloride	50	2.1	2.1	0.33	0.33	U
78-87-5	1,2-Dichloropropane	50	15	15	3.3	3.3	U
75-27-4	Bromodichloromethane	50	4.5	4.5	0.67	0.67	U
79-01-6	Trichloroethene (TCE)	50	11	1.8	2.0	0.34	
123-91-1	1,4-Dioxane	50	150	150	42	42	U
10061-01-5	cis-1,3-Dichloropropene	50	30	30	6.6	6.6	U
108-10-1	4-Methyl-2-pentanone (MIBK)	50	62	27	15	6.6	
10061-02-6	trans-1,3-Dichloropropene	50	15	15	3.3	3.3	U
79-00-5	1,1,2-Trichloroethane	50	18	18	3.3	3.3	U
108-88-3	Toluene	50	12	12	3.3	3.3	U
591-78-6	2-Hexanone	50	14	14	3.3	3.3	U
124-48-1	Dibromochloromethane	50	5.7	5.7	0.67	0.67	U
106-93-4	1,2-Dibromoethane (EDB)	50	5.1	5.1	0.66	0.66	U
127-18-4	Tetrachloroethene (PCE)	50	11	2.4	1.6	0.35	
108-90-7	Chlorobenzene	50	15	15	3.3	3.3	U
100-41-4	Ethylbenzene	50	29	29	6.6	6.6	U
179601-23-1	m,p-Xylenes	50	57	57	13	13	U
75-25-2	Bromoform	50	34	34	3.3	3.3	U
100-42-5	Styrene	50	28	28	6.6	6.6	U
95-47-6	o-Xylene	50	29	29	6.6	6.6	U
79-34-5	1,1,2,2-Tetrachloroethane	50	4.5	4.5	0.66	0.66	U
541-73-1	1,3-Dichlorobenzene	50	40	40	6.6	6.6	U
106-46-7	1,4-Dichlorobenzene	50	40	40	6.6	6.6	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-2  
 Lab Code: R1404674-002

Service Request: R1404674  
 Date Collected: 6/17/14 1504  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 1701  
 Canister Dilution Factor: 1.50

Initial Pressure (psig): -2.60      Final Pressure (psig): 3.51

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	50	40	40	6.6	6.6	U
91-20-3	Naphthalene	50	60	60	11	11	U
87-68-3	Hexachlorobutadiene	50	90	90	8.4	8.4	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	99	70-130	6/23/14 1701	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-3  
 Lab Code: R1404674-003

Service Request: R1404674  
 Date Collected: 6/17/14 1503  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/20/14 1521  
 Canister Dilution Factor: 1.66

Initial Pressure (psig): -3.73      Final Pressure (psig): 3.47

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	19	5.2	5.2	2.1	2.1	U
74-83-9	Bromomethane	19	38	38	9.7	9.7	U
67-64-1	Acetone	19	1000	440	430	180	D
75-35-4	1,1-Dichloroethene	19	38	38	9.7	9.7	U
75-09-2	Methylene Chloride	19	33	33	9.6	9.6	U
156-60-5	trans-1,2-Dichloroethene	19	38	38	9.7	9.7	U
75-34-3	1,1-Dichloroethane	19	39	39	9.7	9.7	U
1634-04-4	Methyl tert-Butyl Ether	19	69	69	19	19	U
78-93-3	2-Butanone (MEK)	19	300	57	100	19	D
156-59-2	cis-1,2-Dichloroethene	19	38	38	9.7	9.7	U
67-66-3	Chloroform	19	47	47	9.7	9.7	U
107-06-2	1,2-Dichloroethane	19	39	39	9.7	9.7	U
71-55-6	1,1,1-Trichloroethane (TCA)	19	52	52	9.6	9.6	U
71-43-2	Benzene	19	31	31	9.6	9.6	U
56-23-5	Carbon Tetrachloride	19	6.1	6.1	0.97	0.97	U
78-87-5	1,2-Dichloropropane	19	45	45	9.6	9.6	U
75-27-4	Bromodichloromethane	19	13	13	2.0	2.0	U
79-01-6	Trichloroethene (TCE)	19	5.2	5.2	0.98	0.98	U
123-91-1	1,4-Dioxane	19	440	440	120	120	U
10061-01-5	cis-1,3-Dichloropropene	19	87	87	19	19	U
108-10-1	4-Methyl-2-pentanone (MIBK)	19	79	79	19	19	U
10061-02-6	trans-1,3-Dichloropropene	19	44	44	9.6	9.6	U
79-00-5	1,1,2-Trichloroethane	19	52	52	9.6	9.6	U
108-88-3	Toluene	19	36	36	9.5	9.5	U
591-78-6	2-Hexanone	19	39	39	9.6	9.6	U
124-48-1	Dibromochloromethane	19	17	17	1.9	1.9	U
106-93-4	1,2-Dibromoethane (EDB)	19	15	15	1.9	1.9	U
127-18-4	Tetrachloroethene (PCE)	19	7.0	7.0	1.0	1.0	U
108-90-7	Chlorobenzene	19	45	45	9.7	9.7	U
100-41-4	Ethylbenzene	19	83	83	19	19	U
179601-23-1	m,p-Xylenes	19	170	170	38	38	U
75-25-2	Bromoform	19	100	100	9.6	9.6	U
100-42-5	Styrene	19	82	82	19	19	U
95-47-6	o-Xylene	19	83	83	19	19	U
79-34-5	1,1,2,2-Tetrachloroethane	19	13	13	1.9	1.9	U
541-73-1	1,3-Dichlorobenzene	19	120	120	19	19	U
106-46-7	1,4-Dichlorobenzene	19	120	120	19	19	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-3  
 Lab Code: R1404674-003

Service Request: R1404674  
 Date Collected: 6/17/14 1503  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/20/14 1521  
 Canister Dilution Factor: 1.66

Initial Pressure (psig): -3.73      Final Pressure (psig): 3.47

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	19	120	120	19	19	U
91-20-3	Naphthalene	19	170	170	33	33	U
87-68-3	Hexachlorobutadiene	19	260	260	25	25	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	101	70-130	6/20/14 1521	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-3  
 Lab Code: R1404674-003  
 Run Type: Dilution

Service Request: R1404674  
 Date Collected: 6/17/14 1503  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 1743  
 Canister Dilution Factor: 1.66

Initial Pressure (psig): -3.73      Final Pressure (psig): 3.47

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	100	1.0	1.0	0.39	0.39	U
74-83-9	Bromomethane	100	7.1	7.1	1.8	1.8	U
67-64-1	Acetone	100	1100	83	480	35	E
75-35-4	1,1-Dichloroethene	100	7.3	7.3	1.8	1.8	U
75-09-2	Methylene Chloride	100	6.3	6.3	1.8	1.8	U
156-60-5	trans-1,2-Dichloroethene	100	7.3	7.3	1.8	1.8	U
75-34-3	1,1-Dichloroethane	100	7.5	7.5	1.8	1.8	U
1634-04-4	Methyl tert-Butyl Ether	100	13	13	3.6	3.6	U
78-93-3	2-Butanone (MEK)	100	380	11	130	3.7	U
156-59-2	cis-1,2-Dichloroethene	100	7.3	7.3	1.8	1.8	U
67-66-3	Chloroform	100	9.0	9.0	1.8	1.8	U
107-06-2	1,2-Dichloroethane	100	7.5	7.5	1.8	1.8	U
71-55-6	1,1,1-Trichloroethane (TCA)	100	10	10	1.8	1.8	U
71-43-2	Benzene	100	5.8	5.8	1.8	1.8	U
56-23-5	Carbon Tetrachloride	100	1.2	1.2	0.18	0.18	U
78-87-5	1,2-Dichloropropane	100	8.5	8.5	1.8	1.8	U
75-27-4	Bromodichloromethane	100	2.5	2.5	0.37	0.37	U
79-01-6	Trichloroethene (TCE)	100	3.5	1.0	0.65	0.19	U
123-91-1	1,4-Dioxane	100	83	83	23	23	U
10061-01-5	cis-1,3-Dichloropropene	100	17	17	3.7	3.7	U
108-10-1	4-Methyl-2-pentanone (MIBK)	100	91	15	22	3.6	U
10061-02-6	trans-1,3-Dichloropropene	100	8.3	8.3	1.8	1.8	U
79-00-5	1,1,2-Trichloroethane	100	10	10	1.8	1.8	U
108-88-3	Toluene	100	6.8	6.8	1.8	1.8	U
591-78-6	2-Hexanone	100	7.5	7.5	1.8	1.8	U
124-48-1	Dibromochloromethane	100	3.2	3.2	0.37	0.37	U
106-93-4	1,2-Dibromoethane (EDB)	100	2.8	2.8	0.37	0.37	U
127-18-4	Tetrachloroethene (PCE)	100	3.3	1.3	0.49	0.20	U
108-90-7	Chlorobenzene	100	8.5	8.5	1.8	1.8	U
100-41-4	Ethylbenzene	100	16	16	3.6	3.6	U
179601-23-1	m,p-Xylenes	100	32	32	7.3	7.3	U
75-25-2	Bromoform	100	19	19	1.8	1.8	U
100-42-5	Styrene	100	16	16	3.7	3.7	U
95-47-6	o-Xylene	100	16	16	3.6	3.6	U
79-34-5	1,1,2,2-Tetrachloroethane	100	2.5	2.5	0.36	0.36	U
541-73-1	1,3-Dichlorobenzene	100	22	22	3.6	3.6	U
106-46-7	1,4-Dichlorobenzene	100	22	22	3.6	3.6	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-3  
 Lab Code: R1404674-003  
 Run Type: Dilution

Service Request: R1404674  
 Date Collected: 6/17/14 1503  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 1743  
 Canister Dilution Factor: 1.66

Initial Pressure (psig): -3.73      Final Pressure (psig): 3.47

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	100	22	22	3.6	3.6	U
91-20-3	Naphthalene	100	33	33	6.3	6.3	U
87-68-3	Hexachlorobutadiene	100	50	50	4.7	4.7	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	99	70-130	6/23/14 1743	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1407123-04

Service Request: R1404674  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 6/20/14 1015

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.060	0.060	0.023	0.023	U
74-83-9	Bromomethane	1000	0.43	0.43	0.11	0.11	U
67-64-1	Acetone	1000	5.0	5.0	2.1	2.1	U
75-35-4	1,1-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-09-2	Methylene Chloride	1000	0.38	0.38	0.11	0.11	U
156-60-5	trans-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-34-3	1,1-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
1634-04-4	Methyl tert-Butyl Ether	1000	0.79	0.79	0.22	0.22	U
78-93-3	2-Butanone (MEK)	1000	0.65	0.65	0.22	0.22	U
156-59-2	cis-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
67-66-3	Chloroform	1000	0.54	0.54	0.11	0.11	U
107-06-2	1,2-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.60	0.60	0.11	0.11	U
71-43-2	Benzene	1000	0.35	0.35	0.11	0.11	U
56-23-5	Carbon Tetrachloride	1000	0.070	0.070	0.011	0.011	U
78-87-5	1,2-Dichloropropane	1000	0.51	0.51	0.11	0.11	U
75-27-4	Bromodichloromethane	1000	0.15	0.15	0.022	0.022	U
79-01-6	Trichloroethene (TCE)	1000	0.060	0.060	0.011	0.011	U
123-91-1	1,4-Dioxane	1000	5.0	5.0	1.4	1.4	U
10061-01-5	cis-1,3-Dichloropropene	1000	1.0	1.0	0.22	0.22	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1000	0.90	0.90	0.22	0.22	U
10061-02-6	trans-1,3-Dichloropropene	1000	0.50	0.50	0.11	0.11	U
79-00-5	1,1,2-Trichloroethane	1000	0.60	0.60	0.11	0.11	U
108-88-3	Toluene	1000	0.41	0.41	0.11	0.11	U
591-78-6	2-Hexanone	1000	0.45	0.45	0.11	0.11	U
124-48-1	Dibromochloromethane	1000	0.19	0.19	0.022	0.022	U
106-93-4	1,2-Dibromoethane (EDB)	1000	0.17	0.17	0.022	0.022	U
127-18-4	Tetrachloroethene (PCE)	1000	0.080	0.080	0.012	0.012	U
108-90-7	Chlorobenzene	1000	0.51	0.51	0.11	0.11	U
100-41-4	Ethylbenzene	1000	0.95	0.95	0.22	0.22	U
179601-23-1	m,p-Xylenes	1000	1.9	1.9	0.44	0.44	U
75-25-2	Bromoform	1000	1.1	1.1	0.11	0.11	U
100-42-5	Styrene	1000	0.94	0.94	0.22	0.22	U
95-47-6	o-Xylene	1000	0.95	0.95	0.22	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.15	0.15	0.022	0.022	U
541-73-1	1,3-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
106-46-7	1,4-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1407123-04

Service Request: R1404674  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 6/20/14 1015

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
91-20-3	Naphthalene	1000	2.0	2.0	0.38	0.38	U
87-68-3	Hexachlorobutadiene	1000	3.0	3.0	0.28	0.28	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	102	70-130	6/20/14 1015	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1407121-04

Service Request: R1404674  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 6/23/14 1424

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.060	0.060	0.023	0.023	U
74-83-9	Bromomethane	1000	0.43	0.43	0.11	0.11	U
67-64-1	Acetone	1000	5.0	5.0	2.1	2.1	U
75-35-4	1,1-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-09-2	Methylene Chloride	1000	0.38	0.38	0.11	0.11	U
156-60-5	trans-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-34-3	1,1-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
1634-04-4	Methyl tert-Butyl Ether	1000	0.79	0.79	0.22	0.22	U
78-93-3	2-Butanone (MEK)	1000	0.65	0.65	0.22	0.22	U
156-59-2	cis-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
67-66-3	Chloroform	1000	0.54	0.54	0.11	0.11	U
107-06-2	1,2-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.60	0.60	0.11	0.11	U
71-43-2	Benzene	1000	0.35	0.35	0.11	0.11	U
56-23-5	Carbon Tetrachloride	1000	0.070	0.070	0.011	0.011	U
78-87-5	1,2-Dichloropropane	1000	0.51	0.51	0.11	0.11	U
75-27-4	Bromodichloromethane	1000	0.15	0.15	0.022	0.022	U
79-01-6	Trichloroethene (TCE)	1000	0.060	0.060	0.011	0.011	U
123-91-1	1,4-Dioxane	1000	5.0	5.0	1.4	1.4	U
10061-01-5	cis-1,3-Dichloropropene	1000	1.0	1.0	0.22	0.22	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1000	0.90	0.90	0.22	0.22	U
10061-02-6	trans-1,3-Dichloropropene	1000	0.50	0.50	0.11	0.11	U
79-00-5	1,1,2-Trichloroethane	1000	0.60	0.60	0.11	0.11	U
108-88-3	Toluene	1000	0.41	0.41	0.11	0.11	U
591-78-6	2-Hexanone	1000	0.45	0.45	0.11	0.11	U
124-48-1	Dibromochloromethane	1000	0.19	0.19	0.022	0.022	U
106-93-4	1,2-Dibromoethane (EDB)	1000	0.17	0.17	0.022	0.022	U
127-18-4	Tetrachloroethene (PCE)	1000	0.080	0.080	0.012	0.012	U
108-90-7	Chlorobenzene	1000	0.51	0.51	0.11	0.11	U
100-41-4	Ethylbenzene	1000	0.95	0.95	0.22	0.22	U
179601-23-1	m,p-Xylenes	1000	1.9	1.9	0.44	0.44	U
75-25-2	Bromoform	1000	1.1	1.1	0.11	0.11	U
100-42-5	Styrene	1000	0.94	0.94	0.22	0.22	U
95-47-6	o-Xylene	1000	0.95	0.95	0.22	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.15	0.15	0.022	0.022	U
541-73-1	1,3-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
106-46-7	1,4-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1407121-04

Service Request: R1404674  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 6/23/14 1424

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
91-20-3	Naphthalene	1000	2.0	2.0	0.38	0.38	U
87-68-3	Hexachlorobutadiene	1000	3.0	3.0	0.28	0.28	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	98	70-130	6/23/14 1424	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air

Service Request: R1404674

Date Analyzed: 6/20/14

Lab Control Sample Summary  
 Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units: µg/m³

Basis: NA

Analysis Lot: 398637

Lab Control Sample  
 RQ1407123-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Vinyl Chloride	5.89	6.58	90	70 - 130
Bromomethane	8.21	9.80	84	70 - 130
Acetone	6.54	6.47	101	50 - 150
1,1-Dichloroethene	10.2	10.3	99	70 - 130
Methylene Chloride	9.06	8.94	101	70 - 130
trans-1,2-Dichloroethene	10.5	10.4	101	70 - 130
1,1-Dichloroethane	10.8	10.4	104	70 - 130
Methyl tert-Butyl Ether	9.24	9.55	97	70 - 130
2-Butanone (MEK)	8.32	7.81	107	70 - 130
cis-1,2-Dichloroethene	9.99	10.4	96	70 - 130
Chloroform	13.3	13.2	101	70 - 130
1,2-Dichloroethane	11.5	10.6	108	70 - 130
1,1,1-Trichloroethane (TCA)	14.2	14.3	99	70 - 130
Benzene	8.27	8.38	99	70 - 130
Carbon Tetrachloride	16.7	16.0	104	70 - 130
1,2-Dichloropropane	11.9	12.1	98	70 - 130
Bromodichloromethane	18.5	17.4	106	70 - 130
Trichloroethene (TCE)	13.2	14.0	95	70 - 130
1,4-Dioxane	8.33	9.37	89	50 - 150
cis-1,3-Dichloropropene	12.3	12.5	98	70 - 130
4-Methyl-2-pentanone (MIBK)	9.75	10.5	92	70 - 130
trans-1,3-Dichloropropene	10.9	10.9	101	70 - 130
1,1,2-Trichloroethane	13.9	14.5	96	70 - 130
Toluene	9.55	9.98	96	70 - 130
2-Hexanone	10.5	11.1	95	70 - 130
Dibromochloromethane	23.5	23.4	100	70 - 130
1,2-Dibromoethane (EDB)	18.9	20.0	95	70 - 130
Tetrachloroethene (PCE)	17.4	18.0	97	70 - 130
Chlorobenzene	12.1	12.3	98	70 - 130
Ethylbenzene	11.0	11.5	95	70 - 130
m,p-Xylenes	20.8	22.4	93	70 - 130
Bromoform	28.3	26.6	106	70 - 130
Styrene	10.3	11.1	93	70 - 130
o-Xylene	10.6	11.7	91	70 - 130
1,1,2,2-Tetrachloroethane	16.8	18.5	90	70 - 130
1,3-Dichlorobenzene	14.3	14.7	97	70 - 130
1,4-Dichlorobenzene	14.0	14.9	94	70 - 130
1,2-Dichlorobenzene	13.9	14.6	95	70 - 130

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly Air Samples/150148  
Sample Matrix: Air

Service Request: R1404674  
Date Analyzed: 6/20/14

Lab Control Sample Summary  
Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$   
Basis: NA

Analysis Lot: 398637

Lab Control Sample  
RQ1407123-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Naphthalene	16.3	11.0	148	50 - 150
Hexachlorobutadiene	40.9	23.5	174 *	50 - 150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air

Service Request: R1404674

Date Analyzed: 6/23/14

**Lab Control Sample Summary**  
**Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS**

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$ 

Basis: NA

Analysis Lot: 398632

**Lab Control Sample**  
**RQ1407121-03**

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Vinyl Chloride	5.83	6.58	89	70 - 130
Bromomethane	8.65	9.80	88	70 - 130
Acetone	5.69	6.47	88	50 - 150
1,1-Dichloroethene	9.31	10.3	90	70 - 130
Methylene Chloride	9.12	8.94	102	70 - 130
trans-1,2-Dichloroethene	9.80	10.4	94	70 - 130
1,1-Dichloroethane	10.2	10.4	98	70 - 130
Methyl tert-Butyl Ether	8.84	9.55	93	70 - 130
2-Butanone (MEK)	7.22	7.81	92	70 - 130
cis-1,2-Dichloroethene	10.2	10.4	98	70 - 130
Chloroform	12.3	13.2	93	70 - 130
1,2-Dichloroethane	9.62	10.6	91	70 - 130
1,1,1-Trichloroethane (TCA)	12.7	14.3	88	70 - 130
Benzene	8.32	8.38	99	70 - 130
Carbon Tetrachloride	14.5	16.0	90	70 - 130
1,2-Dichloropropane	11.8	12.1	97	70 - 130
Bromodichloromethane	16.9	17.4	97	70 - 130
Trichloroethene (TCE)	13.3	14.0	95	70 - 130
1,4-Dioxane	10.4	9.37	111	50 - 150
cis-1,3-Dichloropropene	12.1	12.5	97	70 - 130
4-Methyl-2-pentanone (MIBK)	9.33	10.5	89	70 - 130
trans-1,3-Dichloropropene	10.4	10.9	96	70 - 130
1,1,2-Trichloroethane	14.1	14.5	97	70 - 130
Toluene	9.66	9.98	97	70 - 130
2-Hexanone	10.2	11.1	92	70 - 130
Dibromochloromethane	22.4	23.4	96	70 - 130
1,2-Dibromoethane (EDB)	19.3	20.0	97	70 - 130
Tetrachloroethene (PCE)	17.4	18.0	97	70 - 130
Chlorobenzene	12.3	12.3	100	70 - 130
Ethylbenzene	11.0	11.5	95	70 - 130
m,p-Xylenes	20.7	22.4	92	70 - 130
Bromoform	26.8	26.6	101	70 - 130
Styrene	10.2	11.1	92	70 - 130
o-Xylene	10.5	11.7	89	70 - 130
1,1,2,2-Tetrachloroethane	17.0	18.5	92	70 - 130
1,3-Dichlorobenzene	13.9	14.7	94	70 - 130
1,4-Dichlorobenzene	13.7	14.9	92	70 - 130
1,2-Dichlorobenzene	13.5	14.6	93	70 - 130

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air

Service Request: R1404674  
 Date Analyzed: 6/23/14

Lab Control Sample Summary  
 Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units: µg/m³  
 Basis: NA

Analysis Lot: 398632

Lab Control Sample  
 RQ1407121-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Naphthalene	14.7	11.0	133	50 - 150
Hexachlorobutadiene	35.4	23.5	151 *	50 - 150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 | 585.288.5380 | 585.288.8475 (fax) | www.caslab.com

Requested Turnaround Time in Business Days from Receipt, please circle: 1 Day 2 Day 3 Day 4 Day 5 Day 10 Day-Standard. CAS Project #:

Company Name: CB:I Project Name: Varian CAS Contact:

Address: 150 Royal St Project Number: 15044 Analysis Method and/or Analytes

City, State, Zip: Canton, MA 02021 P.O. #/Billing Information: 876613

Project Manager: Ray Cadorette

Phone: 617-589-6102 Fax:

Email (for result reporting): raymond.cadorette@cbi.com Sampler (Print & Sign): Dele Daily

Table with columns: Client Sample ID, Laboratory ID Number, Date Collected, Time Collected, Canister ID, Flow Controller ID. Includes handwritten entries for Bldg 5-1, 5-2, 5-3 and a barcode with ID R1404674 7 Y.

What State were samples collected in: Massachusetts Project Requirements (MRLs, QAPP, etc.):

Report Tier Levels - please select: Tier I Results/Default, if not specified; Tier II Results + QC; Tier III (CLP Forms Only); Tier IV (Data Validation). EDD required: YES / NO. Includes signature and date fields for Relinquished by.



# Cooler Receipt and Preservation Check Form

Project/Client C&E Folder Number R14-4674 ground

Cooler received on 6/19/14 by: [Signature] COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<u>Y</u> N
2	Custody papers properly completed (ink, signed)?	<u>Y</u> N
3	Did all bottles arrive in good condition (unbroken)?	<u>Y</u> N
4	Circle: Wet Ice Dry Ice Gel packs present?	Y <u>N</u>

5a	Perchlorate samples have required headspace?	Y N <u>NA</u>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <u>NA</u>
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as: Bulk Encore 5035set	<u>NA</u>

8. Temperature Readings Date: \_\_\_\_\_ Time: \_\_\_\_\_ ID: IR#3 IR#4 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>AIR</u>						
Correction Factor (°C)							
Corrected Temp (°C)	<u>↓</u>						
Within 0-6°C?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: \_\_\_\_\_ Ice melted Poorly Packed Same Day Rule  
& Client Approval to Run Samples: \_\_\_\_\_ Standing Approval Client aware at drop-off Client notified by: \_\_\_\_\_

All samples held in storage location: S40 by [Signature] on 6/19/14 at 1220  
5035 samples placed in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: [Signature] 6/19/14

Cooler Breakdown: Date: 6/19/14 Time: 1418 by: [Signature]

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were correct containers used for the tests indicated? YES NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO <sub>3</sub>								
≤2	H <sub>2</sub> SO <sub>4</sub>								
<4	NaHSO <sub>4</sub>								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CN), ascorbic (phenol).					
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

Yes=All samples OK  
No=Samples were preserved at The lab as listed  
PM OK to Adjust: \_\_\_\_\_

\*\*Not to be tested before analysis - pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: \_\_\_\_\_  
Other Comments: \_\_\_\_\_

PC Secondary Review: [Signature] 6/23/14

\*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150148-02  
**Prepared By:** Dale Dailey **Date :** 7/1/2014  
**Matrix:** Air  
**Analyte Group :** Volatile Organics **Analytical Method :** EPA Method TO-15  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** 1404675  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
6/17/14	VOC TO-15		30 Days	6/20, 6/23/14

**Sample temperature within QC limits:** NA - Air

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? No

If no, list sample ID where range was exceeded: See Notes

**Equipment Field Blank ID :** NA

**Trip Blank ID :** NA

**Method Blank:** EPA TO-15 6/20/14, 6/23/14

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

(1) All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method.

(2) All initial and continuing calibrations were compliant.

(3) All LCS and LCSD recoveries were within QC limits except Hexachlorobutadiene was outside limits high in batch 398632 and batch 398637. The data was not impacted since the analytical results were non-detect for this analyte in these batches.

**Reviewed By:** Pernilla Haley 7/24/14



June 27, 2014

Service Request No: R1404675

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly Air Samples/150148**

Dear Mr. Cadorette:

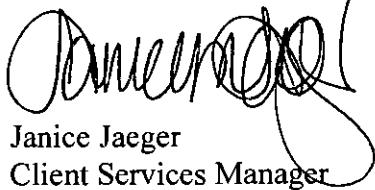
Enclosed are the results of the sample(s) submitted to our laboratory on June 19, 2014. For your reference, these analyses have been assigned our service request number **R1404675**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**



Janice Jaeger  
Client Services Manager

Page 1 of 30

CC: Pemilla Haley

**ALS Environmental**

**Client:** CB&I.  
**Project:** Varian Beverly  
**Sample Matrix:** Air

**Service Request No.:** R1404675  
**Project No.:**  
**Date Received:** 06/19/14

**CASE NARRATIVE**

All analyses were performed consistent with the quality assurance program of ALS environmental. This report contains analytical results for samples designated for Tier II, MASS. CAM deliverables. When appropriate to the method, blank and LCS results have been reported with each analytical test.

**Sample Receipt**

CB&I air samples were collected on 06/17/14 and received at ALS in good condition as noted on the receipt and preservation check form. The samples were stored in the laboratory at room temperature prior to analysis. See the ALS case narrative for a cross-reference between Client ID and ALS Job #.

**TO - 15 Air Analysis**

Six air samples were analyzed for a site list of Volatile Organics by EPA method TO-15.

All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method.

All initial and continuing calibrations were compliant.

All surrogate standard recoveries were within QC limits.

The Method blanks were free of contamination.

The LCS recoveries were all within QC limits of 70 – 130 % except Hexachlorobutadiene was outside limits high on the 06/20/14 and 06/23/14 LCS' and has been flagged with an "\*\*\*". No data was affected.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #:

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1404675-001-006

Matrices: Groundwater/Surface Water    Soil/Sediment    Drinking Water    Air  Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B <input checked="" type="checkbox"/>
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X	Yes	No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X	Yes	No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X	Yes	No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X	Yes	No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes	No	Yes <input checked="" type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X	Yes	No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X	Yes	No <sup>1</sup>
----------	---	---	-----	-----------------

**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40.1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X	Yes	No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes	X	No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:

Position: Client Services  
Manager

Printed Name: Janice Jaeger

Date: 06/27/14      **00003**



## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1404675

<u>Lab ID</u>	<u>Client ID</u>
R1404675-001	BLDG 5-SV1
R1404675-002	BLDG 5-SV2
R1404675-003	BLDG 5-SV3
R1404675-004	BLDG 5-SV4
R1404675-005	BLDG 5-SV5
R1404675-006	BLDG 5-SV6



## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of:* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

  
A handwritten signature in cursive script, appearing to read "Oscar C. Jacobo".

*Director, Division of Environmental Analysis*

*Issued:* 08 JAN 2014

*Expires:* 30 JUN 2014

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
ALUMINUM			EPA 200.7	
ANTIMONY			EPA 200.7	
ANTIMONY			EPA 200.8	
ARSENIC			EPA 200.7	
ARSENIC			EPA 200.8	
BERYLLIUM			EPA 200.7	
BERYLLIUM			EPA 200.8	
CADMIUM			EPA 200.7	
CADMIUM			EPA 200.8	
CHROMIUM			EPA 200.7	
CHROMIUM			EPA 200.8	
COBALT			EPA 200.7	
COBALT			EPA 200.8	
COPPER			EPA 200.7	
COPPER			EPA 200.8	
IRON			EPA 200.7	
LEAD			EPA 200.7	
LEAD			EPA 200.8	
MANGANESE			EPA 200.7	
MANGANESE			EPA 200.8	
MERCURY			EPA 245.1	
MOLYBDENUM			EPA 200.7	
MOLYBDENUM			EPA 200.8	
NICKEL			EPA 200.7	
NICKEL			EPA 200.8	
SELENIUM			EPA 200.7	
SELENIUM			EPA 200.8	
SILVER			EPA 200.7	
SILVER			EPA 200.8	
THALLIUM			EPA 200.7	
THALLIUM			EPA 200.8	
VANADIUM			EPA 200.7	
VANADIUM			EPA 200.8	
ZINC			EPA 200.7	
ZINC			EPA 200.8	
SPECIFIC CONDUCTIVITY			EPA 120.1	
TOTAL DISSOLVED SOLIDS			SM 2540C	
HARDNESS (CACO3), TOTAL			SM 2340C	
CALCIUM			EPA 200.7	
MAGNESIUM			EPA 200.7	
SODIUM			EPA 200.7	
POTASSIUM			EPA 200.7	
ALKALINITY, TOTAL			SM 2320B	

June 25, 2013

\*= Provisional Certification

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COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2013

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)	Effective Date	01 JUL 2013	Expiration Date	30 JUN 2014
<u>Analytes</u>			<u>Methods</u>	
CHLORIDE			SM 4500-CL-E	
CHLORIDE			EPA 300.0	
FLUORIDE			EPA 300.0	
SULFATE			EPA 300.0	
AMMONIA-N			EPA 350.1	
NITRATE-N			EPA 300.0	
NITRATE-N			EPA 353.2	
KJELDAHL-N			EPA 351.2	
ORTHOPHOSPHATE			EPA 365.1	
PHOSPHORUS, TOTAL			EPA 365.1	
CHEMICAL OXYGEN DEMAND			EPA 410.4	
BIOCHEMICAL OXYGEN DEMAND			SM 5210B	
TOTAL ORGANIC CARBON			SM 5310C	
CYANIDE, TOTAL			EPA 335.4	
NON-FILTERABLE RESIDUE			SM 2540D	
OIL AND GREASE			EPA 1664	
PHENOLICS, TOTAL			EPA 420.4	
VOLATILE HALOCARBONS			EPA 601	
VOLATILE HALOCARBONS			EPA 624	
VOLATILE AROMATICS			EPA 602	
VOLATILE AROMATICS			EPA 624	
SVOC-ACID EXTRACTABLES			EPA 625	
SVOC-BASE/NEUTRAL EXTRACTABLES			EPA 625	
POLYCHLORINATED BIPHENYLS (WATEF			EPA 608	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-SV1  
 Lab Code: R1404675-001

Service Request: R1404675  
 Date Collected: 6/17/14 1212  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/20/14 1608  
 Canister Dilution Factor: 1.64

Initial Pressure (psig): -3.59      Final Pressure (psig): 3.49

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	24	4.1	4.1	1.6	1.6	U
74-83-9	Bromomethane	24	29	29	7.6	7.6	U
67-64-1	Acetone	24	960	340	400	140	U
75-35-4	1,1-Dichloroethene	24	30	30	7.6	7.6	U
75-09-2	Methylene Chloride	24	26	26	7.5	7.5	U
156-60-5	trans-1,2-Dichloroethene	24	30	30	7.6	7.6	U
75-34-3	1,1-Dichloroethane	24	31	31	7.6	7.6	U
1634-04-4	Methyl tert-Butyl Ether	24	54	54	15	15	U
78-93-3	2-Butanone (MEK)	24	45	44	15	15	U
156-59-2	cis-1,2-Dichloroethene	24	30	30	7.6	7.6	U
67-66-3	Chloroform	24	37	37	7.6	7.6	U
107-06-2	1,2-Dichloroethane	24	31	31	7.6	7.6	U
71-55-6	1,1,1-Trichloroethane (TCA)	24	41	41	7.5	7.5	U
71-43-2	Benzene	24	24	24	7.5	7.5	U
56-23-5	Carbon Tetrachloride	24	4.8	4.8	0.76	0.76	U
78-87-5	1,2-Dichloropropane	24	35	35	7.5	7.5	U
75-27-4	Bromodichloromethane	24	10	10	1.5	1.5	U
79-01-6	Trichloroethene (TCE)	24	8.7	4.1	1.6	0.76	U
123-91-1	1,4-Dioxane	24	340	340	95	95	U
10061-01-5	cis-1,3-Dichloropropene	24	68	68	15	15	U
108-10-1	4-Methyl-2-pentanone (MIBK)	24	62	62	15	15	U
10061-02-6	trans-1,3-Dichloropropene	24	34	34	7.5	7.5	U
79-00-5	1,1,2-Trichloroethane	24	41	41	7.5	7.5	U
108-88-3	Toluene	24	28	28	7.4	7.4	U
591-78-6	2-Hexanone	24	31	31	7.5	7.5	U
124-48-1	Dibromochloromethane	24	13	13	1.5	1.5	U
106-93-4	1,2-Dibromoethane (EDB)	24	12	12	1.5	1.5	U
127-18-4	Tetrachloroethene (PCE)	24	8.2	5.5	1.2	0.81	U
108-90-7	Chlorobenzene	24	35	35	7.6	7.6	U
100-41-4	Ethylbenzene	24	65	65	15	15	U
179601-23-1	m,p-Xylenes	24	130	130	30	30	U
75-25-2	Bromoform	24	78	78	7.5	7.5	U
100-42-5	Styrene	24	64	64	15	15	U
95-47-6	o-Xylene	24	65	65	15	15	U
79-34-5	1,1,2,2-Tetrachloroethane	24	10	10	1.5	1.5	U
541-73-1	1,3-Dichlorobenzene	24	90	90	15	15	U
106-46-7	1,4-Dichlorobenzene	24	90	90	15	15	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-SV1  
 Lab Code: R1404675-001

Service Request: R1404675  
 Date Collected: 6/17/14 1212  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/20/14 1608  
 Canister Dilution Factor: 1.64

Initial Pressure (psig): -3.59      Final Pressure (psig): 3.49

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	24	90	90	15	15	U
91-20-3	Naphthalene	24	140	140	26	26	U
87-68-3	Hexachlorobutadiene	24	210	210	19	19	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	101	70-130	6/20/14 1608	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-SV2  
 Lab Code: R1404675-002

Service Request: R1404675  
 Date Collected: 6/17/14 1211  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 1910  
 Canister Dilution Factor: 1.80

Initial Pressure (psig): -4.57 Final Pressure (psig): 3.58

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	270	0.40	0.40	0.16	0.16	U
74-83-9	Bromomethane	270	2.9	2.9	0.74	0.74	U
67-64-1	Acetone	270	91	33	38	14	
75-35-4	1,1-Dichloroethene	270	2.9	2.9	0.74	0.74	U
75-09-2	Methylene Chloride	270	2.5	2.5	0.73	0.73	U
156-60-5	trans-1,2-Dichloroethene	270	2.9	2.9	0.74	0.74	U
75-34-3	1,1-Dichloroethane	270	3.0	3.0	0.74	0.74	U
1634-04-4	Methyl tert-Butyl Ether	270	5.3	5.3	1.5	1.5	U
78-93-3	2-Butanone (MEK)	270	200	4.3	68	1.5	
156-59-2	cis-1,2-Dichloroethene	270	2.9	2.9	0.74	0.74	U
67-66-3	Chloroform	270	3.6	3.6	0.74	0.74	U
107-06-2	1,2-Dichloroethane	270	3.0	3.0	0.74	0.74	U
71-55-6	1,1,1-Trichloroethane (TCA)	270	4.0	4.0	0.73	0.73	U
71-43-2	Benzene	270	2.3	2.3	0.73	0.73	U
56-23-5	Carbon Tetrachloride	270	0.49	0.47	0.077	0.074	
78-87-5	1,2-Dichloropropane	270	3.4	3.4	0.74	0.74	U
75-27-4	Bromodichloromethane	270	1.0	1.0	0.15	0.15	U
79-01-6	Trichloroethene (TCE)	270	10	0.40	1.9	0.074	
123-91-1	1,4-Dioxane	270	33	33	9.3	9.3	U
10061-01-5	cis-1,3-Dichloropropene	270	6.7	6.7	1.5	1.5	U
108-10-1	4-Methyl-2-pentanone (MIBK)	270	98	6.0	24	1.5	
10061-02-6	trans-1,3-Dichloropropene	270	3.3	3.3	0.73	0.73	U
79-00-5	1,1,2-Trichloroethane	270	4.0	4.0	0.73	0.73	U
108-88-3	Toluene	270	15	2.7	4.0	0.73	
591-78-6	2-Hexanone	270	15	3.0	3.7	0.73	
124-48-1	Dibromochloromethane	270	1.3	1.3	0.15	0.15	U
106-93-4	1,2-Dibromoethane (EDB)	270	1.1	1.1	0.15	0.15	U
127-18-4	Tetrachloroethene (PCE)	270	8.1	0.53	1.2	0.079	
108-90-7	Chlorobenzene	270	3.4	3.4	0.74	0.74	U
100-41-4	Ethylbenzene	270	6.3	6.3	1.5	1.5	U
179601-23-1	m,p-Xylenes	270	19	13	4.5	2.9	
75-25-2	Bromoform	270	7.6	7.6	0.74	0.74	U
100-42-5	Styrene	270	6.3	6.3	1.5	1.5	U
95-47-6	o-Xylene	270	6.4	6.3	1.5	1.5	
79-34-5	1,1,2,2-Tetrachloroethane	270	1.0	1.0	0.15	0.15	U
541-73-1	1,3-Dichlorobenzene	270	8.8	8.8	1.5	1.5	U
106-46-7	1,4-Dichlorobenzene	270	8.8	8.8	1.5	1.5	U



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-SV2  
 Lab Code: R1404675-002

Service Request: R1404675  
 Date Collected: 6/17/14 1211  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 1910  
 Canister Dilution Factor: 1.80

Initial Pressure (psig): -4.57      Final Pressure (psig): 3.58

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	270	8.8	8.8	1.5	1.5	U
91-20-3	Naphthalene	270	13	13	2.5	2.5	U
87-68-3	Hexachlorobutadiene	270	20	20	1.9	1.9	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	97	70-130	6/23/14 1910	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-SV3  
 Lab Code: R1404675-003

Service Request: R1404675  
 Date Collected: 6/17/14 1215  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 1952  
 Canister Dilution Factor: 1.69

Initial Pressure (psig): -3.93      Final Pressure (psig): 3.48

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	60	1.7	1.7	0.66	0.66	U
74-83-9	Bromomethane	60	12	12	3.1	3.1	U
67-64-1	Acetone	60	360	140	150	59	U
75-35-4	1,1-Dichloroethene	60	12	12	3.1	3.1	U
75-09-2	Methylene Chloride	60	11	11	3.1	3.1	U
156-60-5	trans-1,2-Dichloroethene	60	12	12	3.1	3.1	U
75-34-3	1,1-Dichloroethane	60	13	13	3.1	3.1	U
1634-04-4	Methyl tert-Butyl Ether	60	22	22	6.2	6.2	U
78-93-3	2-Butanone (MEK)	60	36	18	12	6.2	U
156-59-2	cis-1,2-Dichloroethene	60	12	12	3.1	3.1	U
67-66-3	Chloroform	60	15	15	3.1	3.1	U
107-06-2	1,2-Dichloroethane	60	13	13	3.1	3.1	U
71-55-6	1,1,1-Trichloroethane (TCA)	60	17	17	3.1	3.1	U
71-43-2	Benzene	60	9.9	9.9	3.1	3.1	U
56-23-5	Carbon Tetrachloride	60	2.0	2.0	0.31	0.31	U
78-87-5	1,2-Dichloropropane	60	14	14	3.1	3.1	U
75-27-4	Bromodichloromethane	60	4.2	4.2	0.63	0.63	U
79-01-6	Trichloroethene (TCE)	60	580	1.7	110	0.31	U
123-91-1	1,4-Dioxane	60	140	140	39	39	U
10061-01-5	cis-1,3-Dichloropropene	60	28	28	6.2	6.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	60	25	25	6.2	6.2	U
10061-02-6	trans-1,3-Dichloropropene	60	14	14	3.1	3.1	U
79-00-5	1,1,2-Trichloroethane	60	17	17	3.1	3.1	U
108-88-3	Toluene	60	24	12	6.3	3.1	U
591-78-6	2-Hexanone	60	13	13	3.1	3.1	U
124-48-1	Dibromochloromethane	60	5.4	5.4	0.63	0.63	U
106-93-4	1,2-Dibromoethane (EDB)	60	4.8	4.8	0.62	0.62	U
127-18-4	Tetrachloroethene (PCE)	60	210	2.3	31	0.33	U
108-90-7	Chlorobenzene	60	14	14	3.1	3.1	U
100-41-4	Ethylbenzene	60	27	27	6.2	6.2	U
179601-23-1	m,p-Xylenes	60	54	54	12	12	U
75-25-2	Bromoform	60	32	32	3.1	3.1	U
100-42-5	Styrene	60	26	26	6.2	6.2	U
95-47-6	o-Xylene	60	27	27	6.2	6.2	U
79-34-5	1,1,2,2-Tetrachloroethane	60	4.2	4.2	0.62	0.62	U
541-73-1	1,3-Dichlorobenzene	60	37	37	6.2	6.2	U
106-46-7	1,4-Dichlorobenzene	60	37	37	6.2	6.2	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-SV3  
 Lab Code: R1404675-003

Service Request: R1404675  
 Date Collected: 6/17/14 1215  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 1952  
 Canister Dilution Factor: 1.69

Initial Pressure (psig): -3.93      Final Pressure (psig): 3.48

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	60	37	37	6.2	6.2	U
91-20-3	Naphthalene	60	56	56	11	11	U
87-68-3	Hexachlorobutadiene	60	85	85	7.9	7.9	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	101	70-130	6/23/14 1952	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-SV4  
 Lab Code: R1404675-004

Service Request: R1404675  
 Date Collected: 6/17/14 1214  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 2036  
 Canister Dilution Factor: 1.45

Initial Pressure (psig): -2.06 Final Pressure (psig): 3.58

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	100	0.87	0.87	0.34	0.34	U
74-83-9	Bromomethane	100	6.2	6.2	1.6	1.6	U
67-64-1	Acetone	100	73	73	31	31	U
75-35-4	1,1-Dichloroethene	100	6.4	6.4	1.6	1.6	U
75-09-2	Methylene Chloride	100	5.5	5.5	1.6	1.6	U
156-60-5	trans-1,2-Dichloroethene	100	6.4	6.4	1.6	1.6	U
75-34-3	1,1-Dichloroethane	100	6.5	6.5	1.6	1.6	U
1634-04-4	Methyl tert-Butyl Ether	100	11	11	3.2	3.2	U
78-93-3	2-Butanone (MEK)	100	9.4	9.4	3.2	3.2	U
156-59-2	cis-1,2-Dichloroethene	100	6.4	6.4	1.6	1.6	U
67-66-3	Chloroform	100	7.8	7.8	1.6	1.6	U
107-06-2	1,2-Dichloroethane	100	6.5	6.5	1.6	1.6	U
71-55-6	1,1,1-Trichloroethane (TCA)	100	8.7	8.7	1.6	1.6	U
71-43-2	Benzene	100	5.1	5.1	1.6	1.6	U
56-23-5	Carbon Tetrachloride	100	1.0	1.0	0.16	0.16	U
78-87-5	1,2-Dichloropropane	100	7.4	7.4	1.6	1.6	U
75-27-4	Bromodichloromethane	100	2.2	2.2	0.32	0.32	U
79-01-6	Trichloroethene (TCE)	100	14	0.87	2.5	0.16	U
123-91-1	1,4-Dioxane	100	73	73	20	20	U
10061-01-5	cis-1,3-Dichloropropene	100	15	15	3.2	3.2	U
108-10-1	4-Methyl-2-pentanone (MIBK)	100	13	13	3.2	3.2	U
10061-02-6	trans-1,3-Dichloropropene	100	7.3	7.3	1.6	1.6	U
79-00-5	1,1,2-Trichloroethane	100	8.7	8.7	1.6	1.6	U
108-88-3	Toluene	100	5.9	5.9	1.6	1.6	U
591-78-6	2-Hexanone	100	6.5	6.5	1.6	1.6	U
124-48-1	Dibromochloromethane	100	2.8	2.8	0.32	0.32	U
106-93-4	1,2-Dibromoethane (EDB)	100	2.5	2.5	0.32	0.32	U
127-18-4	Tetrachloroethene (PCE)	100	24	1.2	3.6	0.17	U
108-90-7	Chlorobenzene	100	7.4	7.4	1.6	1.6	U
100-41-4	Ethylbenzene	100	14	14	3.2	3.2	U
179601-23-1	m,p-Xylenes	100	28	28	6.4	6.4	U
75-25-2	Bromoform	100	17	17	1.6	1.6	U
100-42-5	Styrene	100	14	14	3.2	3.2	U
95-47-6	o-Xylene	100	14	14	3.2	3.2	U
79-34-5	1,1,2,2-Tetrachloroethane	100	2.2	2.2	0.32	0.32	U
541-73-1	1,3-Dichlorobenzene	100	19	19	3.2	3.2	U
106-46-7	1,4-Dichlorobenzene	100	19	19	3.2	3.2	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-SV4  
 Lab Code: R1404675-004

Service Request: R1404675  
 Date Collected: 6/17/14 1214  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 2036  
 Canister Dilution Factor: 1.45

Initial Pressure (psig): -2.06      Final Pressure (psig): 3.58

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	100	19	19	3.2	3.2	U
91-20-3	Naphthalene	100	29	29	5.5	5.5	U
87-68-3	Hexachlorobutadiene	100	44	44	4.1	4.1	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	97	70-130	6/23/14 2036	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-SV5  
 Lab Code: R1404675-005

Service Request: R1404675  
 Date Collected: 6/17/14 1213  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/23/14 2122  
 Canister Dilution Factor: 1.47

Initial Pressure (psig): -2.36 Final Pressure (psig): 3.48

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	400	0.22	0.22	0.086	0.086	U
74-83-9	Bromomethane	400	1.6	1.6	0.41	0.41	U
67-64-1	Acetone	400	41	18	17	7.7	
75-35-4	1,1-Dichloroethene	400	1.6	1.6	0.41	0.41	U
75-09-2	Methylene Chloride	400	1.4	1.4	0.40	0.40	U
156-60-5	trans-1,2-Dichloroethene	400	1.6	1.6	0.41	0.41	U
75-34-3	1,1-Dichloroethane	400	1.7	1.7	0.41	0.41	U
1634-04-4	Methyl tert-Butyl Ether	400	2.9	2.9	0.81	0.81	U
78-93-3	2-Butanone (MEK)	400	27	2.4	9.0	0.81	
156-59-2	cis-1,2-Dichloroethene	400	1.6	1.6	0.41	0.41	U
67-66-3	Chloroform	400	2.0	2.0	0.41	0.41	U
107-06-2	1,2-Dichloroethane	400	1.7	1.7	0.41	0.41	U
71-55-6	1,1,1-Trichloroethane (TCA)	400	2.2	2.2	0.40	0.40	U
71-43-2	Benzene	400	1.3	1.3	0.40	0.40	U
56-23-5	Carbon Tetrachloride	400	0.49	0.26	0.077	0.041	
78-87-5	1,2-Dichloropropane	400	1.9	1.9	0.41	0.41	U
75-27-4	Bromodichloromethane	400	0.55	0.55	0.082	0.082	U
79-01-6	Trichloroethene (TCE)	400	6.0	0.22	1.1	0.041	
123-91-1	1,4-Dioxane	400	18	18	5.1	5.1	U
10061-01-5	cis-1,3-Dichloropropene	400	3.7	3.7	0.81	0.81	U
108-10-1	4-Methyl-2-pentanone (MIBK)	400	7.2	3.3	1.8	0.81	
10061-02-6	trans-1,3-Dichloropropene	400	1.8	1.8	0.40	0.40	U
79-00-5	1,1,2-Trichloroethane	400	2.2	2.2	0.40	0.40	U
108-88-3	Toluene	400	21	1.5	5.6	0.40	
591-78-6	2-Hexanone	400	1.7	1.7	0.40	0.40	U
124-48-1	Dibromochloromethane	400	0.70	0.70	0.082	0.082	U
106-93-4	1,2-Dibromoethane (EDB)	400	0.62	0.62	0.081	0.081	U
127-18-4	Tetrachloroethene (PCE)	400	64	0.29	9.5	0.043	
108-90-7	Chlorobenzene	400	1.9	1.9	0.41	0.41	U
100-41-4	Ethylbenzene	400	10	3.5	2.4	0.80	
179601-23-1	m,p-Xylenes	400	35	7.0	8.1	1.6	
75-25-2	Bromoform	400	4.2	4.2	0.41	0.41	U
100-42-5	Styrene	400	18	3.5	4.1	0.81	
95-47-6	o-Xylene	400	15	3.5	3.5	0.80	
79-34-5	1,1,2,2-Tetrachloroethane	400	0.55	0.55	0.080	0.080	U
541-73-1	1,3-Dichlorobenzene	400	4.9	4.9	0.81	0.81	U
106-46-7	1,4-Dichlorobenzene	400	4.9	4.9	0.81	0.81	U

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly Air Samples/150148  
**Sample Matrix:** Air  
**Sample Name:** BLDG 5-SV5  
**Lab Code:** RI404675-005

**Service Request:** R1404675  
**Date Collected:** 6/17/14 1213  
**Date Received:** 6/19/14

**Analytical Method:** TO-15

**Date Analyzed:** 6/23/14 2122  
**Canister Dilution Factor:** 1.47

Initial Pressure (psig): -2.36                      Final Pressure (psig): 3.48

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	400	4.9	4.9	0.81	0.81	U
91-20-3	Naphthalene	400	7.4	7.4	1.4	1.4	U
87-68-3	Hexachlorobutadiene	400	11	11	1.0	1.0	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	99	70-130	6/23/14 2122	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG 5-SV6  
 Lab Code: R1404675-006

Service Request: R1404675  
 Date Collected: 6/17/14 1213  
 Date Received: 6/19/14

Analytical Method: TO-15

Date Analyzed: 6/20/14 1654  
 Canister Dilution Factor: 1.59

Initial Pressure (psig): -3.24      Final Pressure (psig): 3.51

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	27	19	3.5	7.3	1.4	
74-83-9	Bromomethane	27	25	25	6.5	6.5	U
67-64-1	Acetone	27	290	290	120	120	U
75-35-4	1,1-Dichloroethene	27	280	26	71	6.5	
75-09-2	Methylene Chloride	27	22	22	6.4	6.4	U
156-60-5	trans-1,2-Dichloroethene	27	26	26	6.5	6.5	U
75-34-3	1,1-Dichloroethane	27	1600	27	390	6.6	
1634-04-4	Methyl tert-Butyl Ether	27	47	47	13	13	U
78-93-3	2-Butanone (MEK)	27	38	38	13	13	U
156-59-2	cis-1,2-Dichloroethene	27	950	26	240	6.5	
67-66-3	Chloroform	27	32	32	6.5	6.5	U
107-06-2	1,2-Dichloroethane	27	27	27	6.6	6.6	U
71-55-6	1,1,1-Trichloroethane (TCA)	27	680	35	130	6.5	
71-43-2	Benzene	27	21	21	6.5	6.5	U
56-23-5	Carbon Tetrachloride	27	4.1	4.1	0.66	0.66	U
78-87-5	1,2-Dichloropropane	27	30	30	6.5	6.5	U
75-27-4	Bromodichloromethane	27	8.8	8.8	1.3	1.3	U
79-01-6	Trichloroethene (TCE)	27	970	3.5	180	0.66	
123-91-1	1,4-Dioxane	27	290	290	82	82	U
10061-01-5	cis-1,3-Dichloropropene	27	59	59	13	13	U
108-10-1	4-Methyl-2-pentanone (MIBK)	27	53	53	13	13	U
10061-02-6	trans-1,3-Dichloropropene	27	29	29	6.5	6.5	U
79-00-5	1,1,2-Trichloroethane	27	35	35	6.5	6.5	U
108-88-3	Toluene	27	24	24	6.4	6.4	U
591-78-6	2-Hexanone	27	27	27	6.5	6.5	U
124-48-1	Dibromochloromethane	27	11	11	1.3	1.3	U
106-93-4	1,2-Dibromoethane (EDB)	27	10	10	1.3	1.3	U
127-18-4	Tetrachloroethene (PCE)	27	420	4.7	61	0.70	
108-90-7	Chlorobenzene	27	30	30	6.5	6.5	U
100-41-4	Ethylbenzene	27	56	56	13	13	U
179601-23-1	m,p-Xylenes	27	110	110	26	26	U
75-25-2	Bromoform	27	67	67	6.5	6.5	U
100-42-5	Styrene	27	55	55	13	13	U
95-47-6	o-Xylene	27	56	56	13	13	U
79-34-5	1,1,2,2-Tetrachloroethane	27	8.8	8.8	1.3	1.3	U
541-73-1	1,3-Dichlorobenzene	27	78	78	13	13	U
106-46-7	1,4-Dichlorobenzene	27	78	78	13	13	U



**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly Air Samples/150148  
**Sample Matrix:** Air  
**Sample Name:** BLDG 5-SV6  
**Lab Code:** R1404675-006

**Service Request:** R1404675  
**Date Collected:** 6/17/14 1213  
**Date Received:** 6/19/14

**Analytical Method:** TO-15

**Date Analyzed:** 6/20/14 1654  
**Canister Dilution Factor:** 1.59

Initial Pressure (psig): -3.24                      Final Pressure (psig): 3.51

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	27	78	78	13	13	U
91-20-3	Naphthalene	27	120	120	22	22	U
87-68-3	Hexachlorobutadiene	27	180	180	17	17	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	100	70-130	6/20/14 1654	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1407123-04

Service Request: R1404675  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 6/20/14 1015

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.060	0.060	0.023	0.023	U
74-83-9	Bromomethane	1000	0.43	0.43	0.11	0.11	U
67-64-1	Acetone	1000	5.0	5.0	2.1	2.1	U
75-35-4	1,1-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-09-2	Methylene Chloride	1000	0.38	0.38	0.11	0.11	U
156-60-5	trans-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-34-3	1,1-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
1634-04-4	Methyl tert-Butyl Ether	1000	0.79	0.79	0.22	0.22	U
78-93-3	2-Butanone (MEK)	1000	0.65	0.65	0.22	0.22	U
156-59-2	cis-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
67-66-3	Chloroform	1000	0.54	0.54	0.11	0.11	U
107-06-2	1,2-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.60	0.60	0.11	0.11	U
71-43-2	Benzene	1000	0.35	0.35	0.11	0.11	U
56-23-5	Carbon Tetrachloride	1000	0.070	0.070	0.011	0.011	U
78-87-5	1,2-Dichloropropane	1000	0.51	0.51	0.11	0.11	U
75-27-4	Bromodichloromethane	1000	0.15	0.15	0.022	0.022	U
79-01-6	Trichloroethene (TCE)	1000	0.060	0.060	0.011	0.011	U
123-91-1	1,4-Dioxane	1000	5.0	5.0	1.4	1.4	U
10061-01-5	cis-1,3-Dichloropropene	1000	1.0	1.0	0.22	0.22	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1000	0.90	0.90	0.22	0.22	U
10061-02-6	trans-1,3-Dichloropropene	1000	0.50	0.50	0.11	0.11	U
79-00-5	1,1,2-Trichloroethane	1000	0.60	0.60	0.11	0.11	U
108-88-3	Toluene	1000	0.41	0.41	0.11	0.11	U
591-78-6	2-Hexanone	1000	0.45	0.45	0.11	0.11	U
124-48-1	Dibromochloromethane	1000	0.19	0.19	0.022	0.022	U
106-93-4	1,2-Dibromoethane (EDB)	1000	0.17	0.17	0.022	0.022	U
127-18-4	Tetrachloroethene (PCE)	1000	0.080	0.080	0.012	0.012	U
108-90-7	Chlorobenzene	1000	0.51	0.51	0.11	0.11	U
100-41-4	Ethylbenzene	1000	0.95	0.95	0.22	0.22	U
179601-23-1	m,p-Xylenes	1000	1.9	1.9	0.44	0.44	U
75-25-2	Bromoform	1000	1.1	1.1	0.11	0.11	U
100-42-5	Styrene	1000	0.94	0.94	0.22	0.22	U
95-47-6	o-Xylene	1000	0.95	0.95	0.22	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.15	0.15	0.022	0.022	U
541-73-1	1,3-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
106-46-7	1,4-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1407123-04

Service Request: R1404675  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 6/20/14 1015

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
91-20-3	Naphthalene	1000	2.0	2.0	0.38	0.38	U
87-68-3	Hexachlorobutadiene	1000	3.0	3.0	0.28	0.28	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	102	70-130	6/20/14 1015	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1407121-04

Service Request: R1404675  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 6/23/14 1424

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.060	0.060	0.023	0.023	U
74-83-9	Bromomethane	1000	0.43	0.43	0.11	0.11	U
67-64-1	Acetone	1000	5.0	5.0	2.1	2.1	U
75-35-4	1,1-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-09-2	Methylene Chloride	1000	0.38	0.38	0.11	0.11	U
156-60-5	trans-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-34-3	1,1-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
1634-04-4	Methyl tert-Butyl Ether	1000	0.79	0.79	0.22	0.22	U
78-93-3	2-Butanone (MEK)	1000	0.65	0.65	0.22	0.22	U
156-59-2	cis-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
67-66-3	Chloroform	1000	0.54	0.54	0.11	0.11	U
107-06-2	1,2-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.60	0.60	0.11	0.11	U
71-43-2	Benzene	1000	0.35	0.35	0.11	0.11	U
56-23-5	Carbon Tetrachloride	1000	0.070	0.070	0.011	0.011	U
78-87-5	1,2-Dichloropropane	1000	0.51	0.51	0.11	0.11	U
75-27-4	Bromodichloromethane	1000	0.15	0.15	0.022	0.022	U
79-01-6	Trichloroethene (TCE)	1000	0.060	0.060	0.011	0.011	U
123-91-1	1,4-Dioxane	1000	5.0	5.0	1.4	1.4	U
10061-01-5	cis-1,3-Dichloropropene	1000	1.0	1.0	0.22	0.22	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1000	0.90	0.90	0.22	0.22	U
10061-02-6	trans-1,3-Dichloropropene	1000	0.50	0.50	0.11	0.11	U
79-00-5	1,1,2-Trichloroethane	1000	0.60	0.60	0.11	0.11	U
108-88-3	Toluene	1000	0.41	0.41	0.11	0.11	U
591-78-6	2-Hexanone	1000	0.45	0.45	0.11	0.11	U
124-48-1	Dibromochloromethane	1000	0.19	0.19	0.022	0.022	U
106-93-4	1,2-Dibromoethane (EDB)	1000	0.17	0.17	0.022	0.022	U
127-18-4	Tetrachloroethene (PCE)	1000	0.080	0.080	0.012	0.012	U
108-90-7	Chlorobenzene	1000	0.51	0.51	0.11	0.11	U
100-41-4	Ethylbenzene	1000	0.95	0.95	0.22	0.22	U
179601-23-1	m,p-Xylenes	1000	1.9	1.9	0.44	0.44	U
75-25-2	Bromoform	1000	1.1	1.1	0.11	0.11	U
100-42-5	Styrene	1000	0.94	0.94	0.22	0.22	U
95-47-6	o-Xylene	1000	0.95	0.95	0.22	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.15	0.15	0.022	0.022	U
541-73-1	1,3-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
106-46-7	1,4-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1407121-04

Service Request: R1404675  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 6/23/14 1424

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
91-20-3	Naphthalene	1000	2.0	2.0	0.38	0.38	U
87-68-3	Hexachlorobutadiene	1000	3.0	3.0	0.28	0.28	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	98	70-130	6/23/14 1424	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air

Service Request: R1404675  
 Date Analyzed: 6/20/14

Lab Control Sample Summary  
 Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units: µg/m³  
 Basis: NA

Analysis Lot: 398637

Lab Control Sample  
 RQ1407123-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Vinyl Chloride	5.89	6.58	90	70 - 130
Bromomethane	8.21	9.80	84	70 - 130
Acetone	6.54	6.47	101	50 - 150
1,1-Dichloroethene	10.2	10.3	99	70 - 130
Methylene Chloride	9.06	8.94	101	70 - 130
trans-1,2-Dichloroethene	10.5	10.4	101	70 - 130
1,1-Dichloroethane	10.8	10.4	104	70 - 130
Methyl tert-Butyl Ether	9.24	9.55	97	70 - 130
2-Butanone (MEK)	8.32	7.81	107	70 - 130
cis-1,2-Dichloroethene	9.99	10.4	96	70 - 130
Chloroform	13.3	13.2	101	70 - 130
1,2-Dichloroethane	11.5	10.6	108	70 - 130
1,1,1-Trichloroethane (TCA)	14.2	14.3	99	70 - 130
Benzene	8.27	8.38	99	70 - 130
Carbon Tetrachloride	16.7	16.0	104	70 - 130
1,2-Dichloropropane	11.9	12.1	98	70 - 130
Bromodichloromethane	18.5	17.4	106	70 - 130
Trichloroethene (TCE)	13.2	14.0	95	70 - 130
1,4-Dioxane	8.33	9.37	89	50 - 150
cis-1,3-Dichloropropene	12.3	12.5	98	70 - 130
4-Methyl-2-pentanone (MIBK)	9.75	10.5	92	70 - 130
trans-1,3-Dichloropropene	10.9	10.9	101	70 - 130
1,1,2-Trichloroethane	13.9	14.5	96	70 - 130
Toluene	9.55	9.98	96	70 - 130
2-Hexanone	10.5	11.1	95	70 - 130
Dibromochloromethane	23.5	23.4	100	70 - 130
1,2-Dibromoethane (EDB)	18.9	20.0	95	70 - 130
Tetrachloroethene (PCE)	17.4	18.0	97	70 - 130
Chlorobenzene	12.1	12.3	98	70 - 130
Ethylbenzene	11.0	11.5	95	70 - 130
m,p-Xylenes	20.8	22.4	93	70 - 130
Bromoform	28.3	26.6	106	70 - 130
Styrene	10.3	11.1	93	70 - 130
o-Xylene	10.6	11.7	91	70 - 130
1,1,2,2-Tetrachloroethane	16.8	18.5	90	70 - 130
1,3-Dichlorobenzene	14.3	14.7	97	70 - 130
1,4-Dichlorobenzene	14.0	14.9	94	70 - 130
1,2-Dichlorobenzene	13.9	14.6	95	70 - 130

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air

Service Request: R1404675  
 Date Analyzed: 6/20/14

Lab Control Sample Summary  
 Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$   
 Basis: NA

Analysis Lot: 398637

Lab Control Sample  
 RQ1407123-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Naphthalene	16.3	11.0	148	50 - 150
Hexachlorobutadiene	40.9	23.5	174 *	50 - 150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air

Service Request: R1404675

Date Analyzed: 6/23/14

**Lab Control Sample Summary**  
**Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS**

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$ 

Basis: NA

Analysis Lot: 398632

**Lab Control Sample**  
 RQ1407121-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Vinyl Chloride	5.83	6.58	89	70 - 130
Bromomethane	8.65	9.80	88	70 - 130
Acetone	5.69	6.47	88	50 - 150
1,1-Dichloroethene	9.31	10.3	90	70 - 130
Methylene Chloride	9.12	8.94	102	70 - 130
trans-1,2-Dichloroethene	9.80	10.4	94	70 - 130
1,1-Dichloroethane	10.2	10.4	98	70 - 130
Methyl tert-Butyl Ether	8.84	9.55	93	70 - 130
2-Butanone (MEK)	7.22	7.81	92	70 - 130
cis-1,2-Dichloroethene	10.2	10.4	98	70 - 130
Chloroform	12.3	13.2	93	70 - 130
1,2-Dichloroethane	9.62	10.6	91	70 - 130
1,1,1-Trichloroethane (TCA)	12.7	14.3	88	70 - 130
Benzene	8.32	8.38	99	70 - 130
Carbon Tetrachloride	14.5	16.0	90	70 - 130
1,2-Dichloropropane	11.8	12.1	97	70 - 130
Bromodichloromethane	16.9	17.4	97	70 - 130
Trichloroethene (TCE)	13.3	14.0	95	70 - 130
1,4-Dioxane	10.4	9.37	111	50 - 150
cis-1,3-Dichloropropene	12.1	12.5	97	70 - 130
4-Methyl-2-pentanone (MIBK)	9.33	10.5	89	70 - 130
trans-1,3-Dichloropropene	10.4	10.9	96	70 - 130
1,1,2-Trichloroethane	14.1	14.5	97	70 - 130
Toluene	9.66	9.98	97	70 - 130
2-Hexanone	10.2	11.1	92	70 - 130
Dibromochloromethane	22.4	23.4	96	70 - 130
1,2-Dibromoethane (EDB)	19.3	20.0	97	70 - 130
Tetrachloroethene (PCE)	17.4	18.0	97	70 - 130
Chlorobenzene	12.3	12.3	100	70 - 130
Ethylbenzene	11.0	11.5	95	70 - 130
m,p-Xylenes	20.7	22.4	92	70 - 130
Bromoform	26.8	26.6	101	70 - 130
Styrene	10.2	11.1	92	70 - 130
o-Xylene	10.5	11.7	89	70 - 130
1,1,2,2-Tetrachloroethane	17.0	18.5	92	70 - 130
1,3-Dichlorobenzene	13.9	14.7	94	70 - 130
1,4-Dichlorobenzene	13.7	14.9	92	70 - 130
1,2-Dichlorobenzene	13.5	14.6	93	70 - 130

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly Air Samples/150148  
Sample Matrix: Air

Service Request: R1404675  
Date Analyzed: 6/23/14

Lab Control Sample Summary  
Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$   
Basis: NA

Analysis Lot: 398632

Lab Control Sample  
RQ1407121-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Naphthalene	14.7	11.0	133	50 - 150
Hexachlorobutadiene	35.4	23.5	151 *	50 - 150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.





# Cooler Receipt and Preservation Check Form

Project/Client CO+E Folder Number R14-4575 <sup>4675</sup> ground

Cooler received on 6/19/14 by: [Signature] COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<u>Y</u> N
2	Custody papers properly completed (ink, signed)?	<u>Y</u> N
3	Did all bottles arrive in good condition (unbroken)?	<u>Y</u> N
4	Circle: Wet Ice Dry Ice Gel packs present?	Y <u>N</u>

5a	Perchlorate samples have required headspace?	Y N <u>NA</u>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N <u>NA</u>
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as: Bulk Encore 5035set	<u>NA</u>

8. Temperature Readings Date: \_\_\_\_\_ Time: \_\_\_\_\_ ID: IR#3 IR#4 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>AIR</u>						
Correction Factor (°C)							
Corrected Temp (°C)	<u>↓</u>						
Within 0-6°C?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: \_\_\_\_\_ Ice melted Poorly Packed Same Day Rule  
& Client Approval to Run Samples: \_\_\_\_\_ Standing Approval Client aware at drop-off Client notified by: \_\_\_\_\_

All samples held in storage location: SMD by [Signature] on 6/19/14 at 1220  
5035 samples placed in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: [Signature] 6/19/14

Cooler Breakdown: Date: 6/19/14 Time: 1420 by: [Signature]

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were correct containers used for the tests indicated? YES NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	
≥12	NaOH									Yes=All samples OK
≥2	HNO <sub>3</sub>									No=Samples were preserved at The lab as listed
≥2	H <sub>2</sub> SO <sub>4</sub>									
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CN), ascorbic (phenol).						PM OK to Adjust:
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-							
	ZnAcetate	-	-							
	HCl	**	**							

\*\*Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: \_\_\_\_\_  
Other Comments: \_\_\_\_\_

PC Secondary Review: [Signature] 6/23/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 150148-01  
**Prepared By:** Dale Dailey **Date :** 7/25/2014  
**Matrix:** Air  
**Analyte Group :** Volatile Organics **Analytical Method :** EPA Method TO-15  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** 1405214  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
7/8/14	VOC TO-15		30 Days	7/15/14

**Sample temperature within QC limits:** NA - Air

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? No

If no, list sample ID where range was exceeded: See Notes

**Equipment Field Blank ID :** NA

**Trip Blank ID :** NA

**Method Blank:** EPA TO-15 7/15/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

(1) All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method.

(2) The pressure in BLD3-SVE1 was received at -23.9 Deg Hg, so it appears the can did not have much sample in it. The sample was pressurized to the standard 3.5 psi and analyzed along with the other samples received (which were at -1.7 and 2.3). The filters were checked and tested and were performing properly. The results for this sample should be considered highly diluted due to the low volume of air present in the canister. Data was given a J or UJ qualifier.

(3) All initial and continuing calibrations were compliant.

(4) All LCS recoveries were within QC limits except Hexachlorobutadiene was outside limits high in batch 401924. The data was not impacted since the analytical results were non-detect for this analyte in this batch.

**Reviewed By:** Pernilla Haley 10/15/14



July 17, 2014

Service Request No: R1405214

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly Air Samples/150148**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on July 9, 2014. For your reference, these analyses have been assigned our service request number **R1405214**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

Janice Jaeger  
Client Services Manager

CC: Pernilla Haley

Page 1 of 20

## ALS Environmental

**Client:** CB&I.  
**Project:** Varian Beverly  
**Sample Matrix:** Air

**Service Request No.:** R1405214  
**Project No.:**  
**Date Received:** 07/09/14

### CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS environmental. This report contains analytical results for samples designated for Tier II, MASS. CAM deliverables. When appropriate to the method, blank and LCS results have been reported with each analytical test.

#### Sample Receipt

CB&I air samples were collected on 07/08/14 and received at ALS in good condition as noted on the receipt and preservation check form. The samples were stored in the laboratory at room temperature prior to analysis. See the ALS case narrative for a cross-reference between Client ID and ALS Job #.

#### TO - 15 Air Analysis

Three air samples were analyzed for a site list of Volatile Organics by EPA method TO-15.

The Pressure was checked for BLDG3-SVE1 upon receipt. The pressure when the summa canister was shipped was -29.2" Hg and the pressure upon receipt was -23.9"Hg so it appears the can did not have much sample in it. The sample was pressurized to the standard 3.5psi and analyzed along with the other samples received (which were at -1.7" and 2.3"). The filters were checked and tested and were performing properly. The results for this sample should be considered as highly diluted due to the low volume of air present in the canister.

All samples were initially analyzed at appropriate dilutions based on prescreening of the samples and/or historical data to bring the target analytes within the calibration range of the method.

All initial and continuing calibrations were compliant.

All surrogate standard recoveries were within QC limits.

The Method blanks were free of contamination.

The LCS recoveries were all within QC limits of 70 – 130 % except Hexachlorobutadiene was outside limits high on the 07/15/14 LCS and has been flagged with an "\*\*". No data was affected.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150148

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1405214-001-003

Matrices: Groundwater/Surface Water    Soil/Sediment    Drinking Water    Air  Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B <input checked="" type="checkbox"/>
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X Yes    No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X Yes    No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X Yes    No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X Yes    No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes    No Yes <input checked="" type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X Yes    No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X Yes    No <sup>1</sup>
----------	---	--------------------------

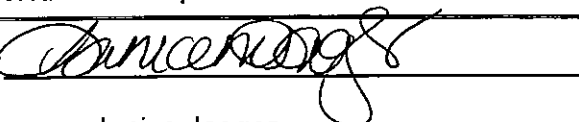
**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X Yes    No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes    X No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature: \_\_\_\_\_



Position: Client Services  
Manager

Printed Name: Janice Jaeger

Date: 06/27/14

**00003**

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1405214

<u>Lab ID</u>	<u>Client ID</u>
R1405214-001	BLDG3-SVE1
R1405214-002	BLDG3-SVE2
R1405214-003	BLDG3-SVE INFLUENT



## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

*Jacques C. Pincus*

*Director, Division of Environmental Analysis*

*Issued:* 01 JUL 2014

*Expires:* 30 JUN 2015

**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: **01 JUL 2014**

**M-NY032      ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY**

**NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2014      Expiration Date      30 JUN 2015**

**Analytes**

**Methods**

ALUMINUM	EPA 200.7
ANTIMONY	EPA 200.7
ANTIMONY	EPA 200.8
ARSENIC	EPA 200.7
ARSENIC	EPA 200.8
BERYLLIUM	EPA 200.7
BERYLLIUM	EPA 200.8
CADMIUM	EPA 200.7
CADMIUM	EPA 200.8
CHROMIUM	EPA 200.7
CHROMIUM	EPA 200.8
COBALT	EPA 200.7
COBALT	EPA 200.8
COPPER	EPA 200.7
COPPER	EPA 200.8
IRON	EPA 200.7
LEAD	EPA 200.7
LEAD	EPA 200.8
MANGANESE	EPA 200.7
MANGANESE	EPA 200.8
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
MOLYBDENUM	EPA 200.8
NICKEL	EPA 200.7
NICKEL	EPA 200.8
SELENIUM	EPA 200.7
SELENIUM	EPA 200.8
SILVER	EPA 200.7
SILVER	EPA 200.8
THALLIUM	EPA 200.7
THALLIUM	EPA 200.8
VANADIUM	EPA 200.7
VANADIUM	EPA 200.8
ZINC	EPA 200.7
ZINC	EPA 200.8
SPECIFIC CONDUCTIVITY	EPA 120.1
TOTAL DISSOLVED SOLIDS	SM 2540C
HARDNESS (CACO3), TOTAL	SM 2340C
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
ALKALINITY, TOTAL	SM 2320B

June 26, 2014

\*= Provisional Certification

Page 1 of 2

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COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2014

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)

Effective  
Date

01 JUL 2014

Expiration 30 JUN 2015  
Date

Analytes

CHLORIDE  
CHLORIDE  
FLUORIDE  
SULFATE  
AMMONIA-N  
NITRATE-N  
NITRATE-N  
KJELDAHL-N  
ORTHOPHOSPHATE  
PHOSPHORUS, TOTAL  
CHEMICAL OXYGEN DEMAND  
BIOCHEMICAL OXYGEN DEMAND  
TOTAL ORGANIC CARBON  
CYANIDE, TOTAL  
NON-FILTERABLE RESIDUE  
OIL AND GREASE  
PHENOLICS, TOTAL  
VOLATILE HALOCARBONS  
VOLATILE HALOCARBONS  
VOLATILE AROMATICS  
VOLATILE AROMATICS  
SVOC-ACID EXTRACTABLES  
SVOC-BASE/NEUTRAL EXTRACTABLES  
POLYCHLORINATED BIPHENYLS (WATEF

Methods

SM 4500-CL-E  
EPA 300.0  
EPA 300.0  
EPA 300.0  
EPA 350.1  
EPA 300.0  
EPA 353.2  
EPA 351.2  
EPA 365.1  
EPA 365.1  
EPA 410.4  
SM 5210B  
SM 5310C  
EPA 335.4  
SM 2540D  
EPA 1664  
EPA 420.4  
EPA 601  
EPA 624  
EPA 602  
EPA 624  
EPA 625  
EPA 625  
EPA 608

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG3-SVE1  
 Lab Code: R1405214-001

Service Request: R1405214  
 Date Collected: 7/ 8/14 1200  
 Date Received: 7/ 9/14

Analytical Method: TO-15

Date Analyzed: 7/15/14 1219  
 Canister Dilution Factor: 6.15

Initial Pressure (psig): -11.74      Final Pressure (psig): 3.50

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.37	0.37	0.14	0.14	U
74-83-9	Bromomethane	1000	2.6	2.6	0.68	0.68	U
67-64-1	Acetone	1000	39	31	16	13	
75-35-4	1,1-Dichloroethene	1000	2.7	2.7	0.68	0.68	U
75-09-2	Methylene Chloride	1000	2.3	2.3	0.67	0.67	U
156-60-5	trans-1,2-Dichloroethene	1000	2.7	2.7	0.68	0.68	U
75-34-3	1,1-Dichloroethane	1000	2.8	2.8	0.68	0.68	U
1634-04-4	Methyl tert-Butyl Ether	1000	4.9	4.9	1.3	1.3	U
78-93-3	2-Butanone (MEK)	1000	4.0	4.0	1.4	1.4	U
156-59-2	cis-1,2-Dichloroethene	1000	2.7	2.7	0.68	0.68	U
67-66-3	Chloroform	1000	3.3	3.3	0.68	0.68	U
107-06-2	1,2-Dichloroethane	1000	2.8	2.8	0.68	0.68	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	3.7	3.7	0.68	0.68	U
71-43-2	Benzene	1000	2.2	2.2	0.67	0.67	U
56-23-5	Carbon Tetrachloride	1000	0.47	0.43	0.074	0.068	
78-87-5	1,2-Dichloropropane	1000	3.1	3.1	0.68	0.68	U
75-27-4	Bromodichloromethane	1000	0.92	0.92	0.14	0.14	U
79-01-6	Trichloroethene (TCE)	1000	0.37	0.37	0.069	0.069	U
123-91-1	1,4-Dioxane	1000	31	31	8.5	8.5	U
10061-01-5	cis-1,3-Dichloropropene	1000	6.2	6.2	1.4	1.4	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1000	5.5	5.5	1.4	1.4	U
10061-02-6	trans-1,3-Dichloropropene	1000	3.1	3.1	0.68	0.68	U
79-00-5	1,1,2-Trichloroethane	1000	3.7	3.7	0.68	0.68	U
108-88-3	Toluene	1000	2.5	2.5	0.67	0.67	U
591-78-6	2-Hexanone	1000	2.8	2.8	0.68	0.68	U
124-48-1	Dibromochloromethane	1000	1.2	1.2	0.14	0.14	U
106-93-4	1,2-Dibromoethane (EDB)	1000	1.0	1.0	0.14	0.14	U
127-18-4	Tetrachloroethene (PCE)	1000	0.49	0.49	0.073	0.073	U
108-90-7	Chlorobenzene	1000	3.1	3.1	0.68	0.68	U
100-41-4	Ethylbenzene	1000	5.8	5.8	1.3	1.3	U
179601-23-1	m,p-Xylenes	1000	12	12	2.7	2.7	U
75-25-2	Bromoform	1000	7.0	7.0	0.68	0.68	U
100-42-5	Styrene	1000	5.8	5.8	1.4	1.4	U
95-47-6	o-Xylene	1000	5.8	5.8	1.3	1.3	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.92	0.92	0.13	0.13	U
541-73-1	1,3-Dichlorobenzene	1000	8.1	8.1	1.4	1.4	U
106-46-7	1,4-Dichlorobenzene	1000	8.1	8.1	1.4	1.4	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG3-SVE1  
 Lab Code: R1405214-001

Service Request: R1405214  
 Date Collected: 7/ 8/14 1200  
 Date Received: 7/ 9/14

Analytical Method: TO-15

Date Analyzed: 7/15/14 1219  
 Canister Dilution Factor: 6.15

Initial Pressure (psig): -11.74      Final Pressure (psig): 3.50

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	1000	8.1	8.1	1.4	1.4	U
91-20-3	Naphthalene	1000	12	12	2.3	2.3	U
87-68-3	Hexachlorobutadiene	1000	18	18	1.7	1.7	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	100	70-130	7/15/14 1219	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG3-SVE2  
 Lab Code: R1405214-002

Service Request: R1405214  
 Date Collected: 7/ 8/14 1230  
 Date Received: 7/ 9/14

Analytical Method: TO-15

Date Analyzed: 7/15/14 1041  
 Canister Dilution Factor: 1.31

Initial Pressure (psig): -0.83 Final Pressure (psig): 3.53

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	0.50	160	160	62	62	U
74-83-9	Bromomethane	0.50	1100	1100	290	290	U
67-64-1	Acetone	0.50	13000	13000	5500	5500	U
75-35-4	1,1-Dichloroethene	0.50	1200	1200	290	290	U
75-09-2	Methylene Chloride	0.50	1000	1000	290	290	U
156-60-5	trans-1,2-Dichloroethene	0.50	1200	1200	290	290	U
75-34-3	1,1-Dichloroethane	0.50	1200	1200	290	290	U
1634-04-4	Methyl tert-Butyl Ether	0.50	2100	2100	570	570	U
78-93-3	2-Butanone (MEK)	0.50	1700	1700	580	580	U
156-59-2	cis-1,2-Dichloroethene	0.50	1200	1200	290	290	U
67-66-3	Chloroform	0.50	1400	1400	290	290	U
107-06-2	1,2-Dichloroethane	0.50	1200	1200	290	290	U
71-55-6	1,1,1-Trichloroethane (TCA)	0.50	1600	1600	290	290	U
71-43-2	Benzene	0.50	920	920	290	290	U
56-23-5	Carbon Tetrachloride	0.50	180	180	29	29	U
78-87-5	1,2-Dichloropropane	0.50	1300	1300	290	290	U
75-27-4	Bromodichloromethane	0.50	390	390	59	59	U
79-01-6	Trichloroethene (TCE)	0.50	2900	160	540	29	U
123-91-1	1,4-Dioxane	0.50	13000	13000	3600	3600	U
10061-01-5	cis-1,3-Dichloropropene	0.50	2600	2600	580	580	U
108-10-1	4-Methyl-2-pentanone (MIBK)	0.50	2400	2400	580	580	U
10061-02-6	trans-1,3-Dichloropropene	0.50	1300	1300	290	290	U
79-00-5	1,1,2-Trichloroethane	0.50	1600	1600	290	290	U
108-88-3	Toluene	0.50	1100	1100	290	290	U
591-78-6	2-Hexanone	0.50	1200	1200	290	290	U
124-48-1	Dibromochloromethane	0.50	500	500	58	58	U
106-93-4	1,2-Dibromoethane (EDB)	0.50	450	450	58	58	U
127-18-4	Tetrachloroethene (PCE)	0.50	99000	210	15000	31	U
108-90-7	Chlorobenzene	0.50	1300	1300	290	290	U
100-41-4	Ethylbenzene	0.50	2500	2500	570	570	U
179601-23-1	m,p-Xylenes	0.50	5000	5000	1200	1200	U
75-25-2	Bromoform	0.50	3000	3000	290	290	U
100-42-5	Styrene	0.50	2500	2500	580	580	U
95-47-6	o-Xylene	0.50	2500	2500	570	570	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	390	390	57	57	U
541-73-1	1,3-Dichlorobenzene	0.50	3500	3500	580	580	U
106-46-7	1,4-Dichlorobenzene	0.50	3500	3500	580	580	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG3-SVE2  
 Lab Code: R1405214-002

Service Request: R1405214  
 Date Collected: 7/ 8/14 1230  
 Date Received: 7/ 9/14

Analytical Method: TO-15

Date Analyzed: 7/15/14 1041  
 Canister Dilution Factor: 1.31

Initial Pressure (psig): -0.83      Final Pressure (psig): 3.53

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	0.50	3500	3500	580	580	U
91-20-3	Naphthalene	0.50	5200	5200	1000	1000	U
87-68-3	Hexachlorobutadiene	0.50	7900	7900	740	740	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	98	70-130	7/15/14 1041	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG3-SVE INFLUENT  
 Lab Code: R1405214-003

Service Request: R1405214  
 Date Collected: 7/ 8/14 1300  
 Date Received: 7/ 9/14

Analytical Method: TO-15

Date Analyzed: 7/15/14 1542  
 Canister Dilution Factor: 1.34

Initial Pressure (psig): -1.13      Final Pressure (psig): 3.53

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.080	0.080	0.031	0.031	U
74-83-9	Bromomethane	1000	0.58	0.58	0.15	0.15	U
67-64-1	Acetone	1000	21	6.7	8.8	2.8	U
75-35-4	1,1-Dichloroethene	1000	0.59	0.59	0.15	0.15	U
75-09-2	Methylene Chloride	1000	0.51	0.51	0.15	0.15	U
156-60-5	trans-1,2-Dichloroethene	1000	0.59	0.59	0.15	0.15	U
75-34-3	1,1-Dichloroethane	1000	0.60	0.60	0.15	0.15	U
1634-04-4	Methyl tert-Butyl Ether	1000	1.1	1.1	0.29	0.29	U
78-93-3	2-Butanone (MEK)	1000	0.96	0.87	0.32	0.30	U
156-59-2	cis-1,2-Dichloroethene	1000	0.59	0.59	0.15	0.15	U
67-66-3	Chloroform	1000	0.72	0.72	0.15	0.15	U
107-06-2	1,2-Dichloroethane	1000	0.60	0.60	0.15	0.15	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.80	0.80	0.15	0.15	U
71-43-2	Benzene	1000	0.47	0.47	0.15	0.15	U
56-23-5	Carbon Tetrachloride	1000	0.094	0.094	0.015	0.015	U
78-87-5	1,2-Dichloropropane	1000	0.68	0.68	0.15	0.15	U
75-27-4	Bromodichloromethane	1000	0.20	0.20	0.030	0.030	U
79-01-6	Trichloroethene (TCE)	1000	0.080	0.080	0.015	0.015	U
123-91-1	1,4-Dioxane	1000	6.7	6.7	1.9	1.9	U
10061-01-5	cis-1,3-Dichloropropene	1000	1.3	1.3	0.30	0.30	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1000	1.2	1.2	0.29	0.29	U
10061-02-6	trans-1,3-Dichloropropene	1000	0.67	0.67	0.15	0.15	U
79-00-5	1,1,2-Trichloroethane	1000	0.80	0.80	0.15	0.15	U
108-88-3	Toluene	1000	0.55	0.55	0.15	0.15	U
591-78-6	2-Hexanone	1000	0.60	0.60	0.15	0.15	U
124-48-1	Dibromochloromethane	1000	0.25	0.25	0.030	0.030	U
106-93-4	1,2-Dibromoethane (EDB)	1000	0.23	0.23	0.030	0.030	U
127-18-4	Tetrachloroethene (PCE)	1000	3.6	0.11	0.53	0.016	U
108-90-7	Chlorobenzene	1000	0.68	0.68	0.15	0.15	U
100-41-4	Ethylbenzene	1000	1.3	1.3	0.29	0.29	U
179601-23-1	m,p-Xylenes	1000	2.6	2.6	0.59	0.59	U
75-25-2	Bromoform	1000	1.5	1.5	0.15	0.15	U
100-42-5	Styrene	1000	1.3	1.3	0.30	0.30	U
95-47-6	o-Xylene	1000	1.3	1.3	0.29	0.29	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.20	0.20	0.029	0.029	U
541-73-1	1,3-Dichlorobenzene	1000	1.8	1.8	0.29	0.29	U
106-46-7	1,4-Dichlorobenzene	1000	1.8	1.8	0.29	0.29	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: BLDG3-SVE INFLUENT  
 Lab Code: R1405214-003

Service Request: R1405214  
 Date Collected: 7/8/14 1300  
 Date Received: 7/9/14

Analytical Method: TO-15

Date Analyzed: 7/15/14 1542  
 Canister Dilution Factor: 1.34

Initial Pressure (psig): -1.13      Final Pressure (psig): 3.53

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	1000	1.8	1.8	0.29	0.29	U
91-20-3	Naphthalene	1000	2.7	2.7	0.51	0.51	U
87-68-3	Hexachlorobutadiene	1000	4.0	4.0	0.38	0.38	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	99	70-130	7/15/14 1542	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1408218-04

Service Request: R1405214  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 7/15/14 0955

CAS #	Analyte Name	Sample Amount mL	Result µg/m³	MRL µg/m³	Result ppbv	MRL ppbv	Data Qualifier
75-01-4	Vinyl Chloride	1000	0.060	0.060	0.023	0.023	U
74-83-9	Bromomethane	1000	0.43	0.43	0.11	0.11	U
67-64-1	Acetone	1000	5.0	5.0	2.1	2.1	U
75-35-4	1,1-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-09-2	Methylene Chloride	1000	0.38	0.38	0.11	0.11	U
156-60-5	trans-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
75-34-3	1,1-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
1634-04-4	Methyl tert-Butyl Ether	1000	0.79	0.79	0.22	0.22	U
78-93-3	2-Butanone (MEK)	1000	0.65	0.65	0.22	0.22	U
156-59-2	cis-1,2-Dichloroethene	1000	0.44	0.44	0.11	0.11	U
67-66-3	Chloroform	1000	0.54	0.54	0.11	0.11	U
107-06-2	1,2-Dichloroethane	1000	0.45	0.45	0.11	0.11	U
71-55-6	1,1,1-Trichloroethane (TCA)	1000	0.60	0.60	0.11	0.11	U
71-43-2	Benzene	1000	0.35	0.35	0.11	0.11	U
56-23-5	Carbon Tetrachloride	1000	0.070	0.070	0.011	0.011	U
78-87-5	1,2-Dichloropropane	1000	0.51	0.51	0.11	0.11	U
75-27-4	Bromodichloromethane	1000	0.15	0.15	0.022	0.022	U
79-01-6	Trichloroethene (TCE)	1000	0.060	0.060	0.011	0.011	U
123-91-1	1,4-Dioxane	1000	5.0	5.0	1.4	1.4	U
10061-01-5	cis-1,3-Dichloropropene	1000	1.0	1.0	0.22	0.22	U
108-10-1	4-Methyl-2-pentanone (MIBK)	1000	0.90	0.90	0.22	0.22	U
10061-02-6	trans-1,3-Dichloropropene	1000	0.50	0.50	0.11	0.11	U
79-00-5	1,1,2-Trichloroethane	1000	0.60	0.60	0.11	0.11	U
108-88-3	Toluene	1000	0.41	0.41	0.11	0.11	U
591-78-6	2-Hexanone	1000	0.45	0.45	0.11	0.11	U
124-48-1	Dibromochloromethane	1000	0.19	0.19	0.022	0.022	U
106-93-4	1,2-Dibromoethane (EDB)	1000	0.17	0.17	0.022	0.022	U
127-18-4	Tetrachloroethene (PCE)	1000	0.080	0.080	0.012	0.012	U
108-90-7	Chlorobenzene	1000	0.51	0.51	0.11	0.11	U
100-41-4	Ethylbenzene	1000	0.95	0.95	0.22	0.22	U
179601-23-1	m,p-Xylenes	1000	1.9	1.9	0.44	0.44	U
75-25-2	Bromoform	1000	1.1	1.1	0.11	0.11	U
100-42-5	Styrene	1000	0.94	0.94	0.22	0.22	U
95-47-6	o-Xylene	1000	0.95	0.95	0.22	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	1000	0.15	0.15	0.022	0.022	U
541-73-1	1,3-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
106-46-7	1,4-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air  
 Sample Name: Method Blank  
 Lab Code: RQ1408218-04

Service Request: R1405214  
 Date Collected: NA  
 Date Received: NA

Analytical Method: TO-15

Date Analyzed: 7/15/14 0955

CAS #	Analyte Name	Sample Amount mL	Result $\mu\text{g}/\text{m}^3$	MRL $\mu\text{g}/\text{m}^3$	Result ppbv	MRL ppbv	Data Qualifier
95-50-1	1,2-Dichlorobenzene	1000	1.3	1.3	0.22	0.22	U
91-20-3	Naphthalene	1000	2.0	2.0	0.38	0.38	U
87-68-3	Hexachlorobutadiene	1000	3.0	3.0	0.28	0.28	U

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
4-Bromofluorobenzene	98	70-130	7/15/14 0955	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly Air Samples/150148  
 Sample Matrix: Air

Service Request: R1405214

Date Analyzed: 7/15/14

Lab Control Sample Summary  
 Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units: µg/m³

Basis: NA

Analysis Lot: 401924

Lab Control Sample  
 RQ1408218-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Vinyl Chloride	5.88	6.58	89	70 - 130
Bromomethane	8.65	9.80	88	70 - 130
Acetone	5.73	6.47	89	50 - 150
1,1-Dichloroethene	9.13	10.3	89	70 - 130
Methylene Chloride	9.05	8.94	101	70 - 130
trans-1,2-Dichloroethene	9.78	10.4	94	70 - 130
1,1-Dichloroethane	10.2	10.4	97	70 - 130
Methyl tert-Butyl Ether	8.68	9.55	91	70 - 130
2-Butanone (MEK)	7.20	7.81	92	70 - 130
cis-1,2-Dichloroethene	10.1	10.4	97	70 - 130
Chloroform	12.2	13.2	92	70 - 130
1,2-Dichloroethane	9.60	10.6	90	70 - 130
1,1,1-Trichloroethane (TCA)	12.7	14.3	89	70 - 130
Benzene	8.35	8.38	100	70 - 130
Carbon Tetrachloride	14.6	16.0	91	70 - 130
1,2-Dichloropropane	11.7	12.1	97	70 - 130
Bromodichloromethane	17.1	17.4	98	70 - 130
Trichloroethene (TCE)	13.4	14.0	96	70 - 130
1,4-Dioxane	9.55	9.37	102	50 - 150
cis-1,3-Dichloropropene	11.8	12.5	94	70 - 130
4-Methyl-2-pentanone (MIBK)	9.07	10.5	86	70 - 130
trans-1,3-Dichloropropene	10.2	10.9	94	70 - 130
1,1,2-Trichloroethane	14.0	14.5	97	70 - 130
Toluene	9.52	9.98	95	70 - 130
2-Hexanone	9.80	11.1	89	70 - 130
Dibromochloromethane	22.3	23.4	95	70 - 130
1,2-Dibromoethane (EDB)	19.0	20.0	95	70 - 130
Tetrachloroethene (PCE)	17.5	18.0	97	70 - 130
Chlorobenzene	12.2	12.3	99	70 - 130
Ethylbenzene	11.0	11.5	95	70 - 130
m,p-Xylenes	20.8	22.4	93	70 - 130
Bromoform	27.0	26.6	102	70 - 130
Styrene	10.2	11.1	92	70 - 130
o-Xylene	10.6	11.7	90	70 - 130
1,1,2,2-Tetrachloroethane	17.1	18.5	92	70 - 130
1,3-Dichlorobenzene	13.9	14.7	95	70 - 130
1,4-Dichlorobenzene	13.8	14.9	93	70 - 130
1,2-Dichlorobenzene	13.7	14.6	94	70 - 130

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly Air Samples/150148  
Sample Matrix: Air

Service Request: R1405214  
Date Analyzed: 7/15/14

Lab Control Sample Summary  
Volatile Organic Compounds in Air Collected In SUMMA Passivated Canisters and Analyzed By GC/MS

Analytical Method: TO-15

Units:  $\mu\text{g}/\text{m}^3$   
Basis: NA

Analysis Lot: 401924

Lab Control Sample  
RQ1408218-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Naphthalene	15.6	11.0	142	50 - 150
Hexachlorobutadiene	38.1	23.5	162 *	50 - 150

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623 | 585.288.5380 | 585.288.8475 (fax) | www.caslab.com

Requested Turnaround Time in Business Days from Receipt, please circle: 1 Day   2 Day   3 Day   4 Day   5 Day   10 Day-Standard		CAS Project #:			
Company Name: <b>CB + I</b>		Project Name: <b>Varian</b>			
Address: <b>150 Royall St</b>		CAS Contact:			
City, State, Zip: <b>Canton MA 02021</b>		Project Number: <b>877613</b>			
Project Manager: <b>Ray Cadorette</b>		P.O. #/Billing Information:			
Phone: <b>617 589 6102</b> Fax: <b>617 589 5496</b>		<b>Analysis Method and/or Analytes</b>			
Email (for result reporting): <b>raymond.cadorette@cbi.com</b>					
Sampler (Print & Sign): <b>DANIEL C. LEAHY</b>		<b>Comments</b> Specific Instructions <b>CALL RAY CADORETTE FOR ANALYSIS, TMS, &amp; REPORTS</b> 			
Client Sample ID	Laboratory ID Number			Date Collected	Time Collected
<b>BLD63-SVE1</b>				<b>7/8/14</b>	<b>1200</b>
<b>BLD63-SVE2</b>				<b>7/8/14</b>	<b>1230</b>
<b>BLD63-SVE Invert</b>		<b>7/8/14</b>	<b>1300</b>		
			Canister ID		
			<b>SLC00159 N/A</b>		
			<b>SLC00147</b>		
			<b>SLC00055</b>		
			Flow Controller ID		
			<b>N/A</b>		
			<b>V</b>		
What State were samples collected in: <b>MASS</b>		Project Requirements (MRLs, QAPP, etc.)			
Report Tier Levels - please select: Tier I (Results/Default, if not specified) ___ Tier II (Results + QC) ___ Tier III (CLP Forms Only) ___ Tier IV (Data Validation) ___		EDD required: <b>YES</b> / NO Type: _____ EDD Units: _____			
Relinquished by: (Signature)	Date: <b>7/8/14</b> Time: <b>1305</b>	Received by: (Signature)	Date: <b>7/9/14</b> Time: <b>9:15</b>		
Relinquished by: (Signature)	Date: _____ Time: _____	Received by: (Signature)	Date: _____ Time: _____		
Relinquished by: (Signature)	Date: _____ Time: _____	Received by: (Signature)	Date: _____ Time: _____		

**R1405214**      **7 Y**  
 CB&I Environmental & Infrastructure  
 Varian Beverly Air Samples



# Cooler Receipt and Preservation Check Form

Project/Client CB/I Folder Number 14-5214

Cooler received on 7-9-14 by: ME COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<u>Y</u>	N
2	Custody papers properly completed (ink, signed)?	<u>Y</u>	N
3	Did all bottles arrive in good condition (unbroken)?	<u>Y</u>	N
4	Circle: Wet Ice Dry Ice Gel packs present?	Y	<u>N</u>

5a	Perchlorate samples have required headspace?	Y	N	<u>NA</u>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y	N	<u>NA</u>
6	Where did the bottles originate?	<u>ALS/ROC</u>	CLIENT	
7	Soil VOA received as:	Bulk	Encore	5035set <u>NA</u>

8. Temperature Readings Date: Air Canisters Time: \_\_\_\_\_ ID: IR#3 IR#4 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>NA</u>							
Correction Factor (°C)								
Corrected Temp (°C)								
Within 0-6°C?	Y	N	Y	N	Y	N	Y	N

If out of Temperature, note packing/ice condition: \_\_\_\_\_ Ice melted \_\_\_\_\_ Poorly Packed \_\_\_\_\_ Same Day Rule \_\_\_\_\_

& Client Approval to Run Samples: \_\_\_\_\_ Standing Approval \_\_\_\_\_ Client aware at drop-off \_\_\_\_\_ Client notified by: \_\_\_\_\_

All samples held in storage location: SMD by ME on 7-9-14 at 09:53  
5035 samples placed in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: JMS 7/9/14

Cooler Breakdown: Date: 7/10/14 Time: 2:24 by: JJS

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were correct containers used for the tests indicated? YES NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO <sub>3</sub>								
≤2	H <sub>2</sub> SO <sub>4</sub>								
<4	NaHSO <sub>4</sub>								
Residual Chlorine (-)	For CN Phenol and S22			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CN), ascorbic (phenol).					
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

Yes=All samples OK  
No=Samples were preserved at The lab as listed  
PM OK to Adjust: \_\_\_\_\_

Bottle lot numbers: CAS  
Other Comments: \_\_\_\_\_

PC Secondary Review: JMS 7/14/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 152728.05  
**Prepared By:** Dale Dailey **Date :** 8/26/2014  
**Matrix:** Groundwater  
**Analyte Group :** Volatile Organics **Analytical Method :** SW-846 8260C  
                           Hydrocarbon Gases RSK-175  
                           Total Organic Carbon SM20 5310C  
                           Metals Method 6010C  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1406092  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
8/6/14	SW-846 8260C	14 days	10 days	8/15, 8/18/14
8/6/14	RSK-175	7 Days	7 Days	8/7, 8/8/14
8/6/14	6010C	14 Days	180 Days	8/12, 8/13/14
8/6/14	SM20 5310C	28 Days	28 Days	8/13, 8/14/14

**Sample temperature within QC limits:** Yes, 2.4 C

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? See Notes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :** 8/6/2014

**Trip Blank ID :** 8/6/2014

**Method Blank:** SM20 5310C 8/7, 8/13, 8/14/2014

RSK 175 8/8/2014

6010C 8/12/2014

8260C 8/15, 8/18/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

(1) Several VOC samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. RW-1 (36), AP35-DO (46), AP35-DO (33), AP24-DO (46), AP25-DO (44) and OB9-S were re-analyzed to bring target analytes within the calibration range of the method.

Both dilutions were reported with analytes over the range flagged with an "E" and the diluted analytes flagged with a "D".

(2) All LCS/LCSD recoveries were within QC limits except 1,2-dichloroethane was outside limits high on 8/14/14 and 8/15/14 LCS/LCSD's. No data was affected since the batches were non-detect for this analyte.

(3) Several Dissolved Gas Samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples OB15-2 (17), RW-1 (36), and AP33-DO (35) were re-analyzed at larger dilutions to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the range flagged with an "E" and the diluted analytes flagged with a "D".

**Reviewed By:** Pernilla Haley 10/15/14



August 19, 2014

Service Request No: R1406092

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150151**

Dear Mr. Cadorette:

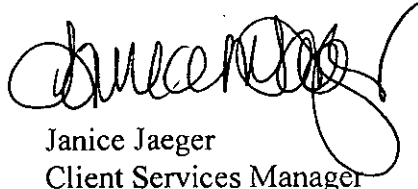
Enclosed are the results of the sample(s) submitted to our laboratory on August 7, 2014. For your reference, these analyses have been assigned our service request number **R1406092**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**



Janice Jaeger  
Client Services Manager

Page 1 of 75

CC: Pernilla Haley



## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Water

**Service Request No.:** R1406092  
**Project Number:** 150151-03000000  
**Date Received:** 08/07/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Water samples were collected on 04/08-09/14 and received at ALS in good condition at cooler temperatures of 2.4 – 4.0 °C as noted on the cooler receipt and preservation check form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #. All Soluble parameters were filtered by field personnel.

### Volatile Organics

Fifteen water samples were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples RW-1 (36'), AP23-DO (46'), AP35-DO (33'), AP24-DO (46'), AP25-DO (44') and OB9-S (18') were re-analyzed at larger dilutions to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D".

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Surrogate Standard recoveries were within QC limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits except 1,2-Dichloroethane was outside limits high on the 08/14/14 LCS/LCSD and 08/15/14 LCSD and has been flagged with an "\*\*". No data was affected. All RPD's were acceptable.

All samples were analyzed within the required holding time of 14 days.

### Dissolved Gases

Ten water samples were analyzed for a site list of Volatile Organics by SW-846 Method 8260C.

Several samples were initially analyzed at dilutions to bring target analytes within the calibration range of the method. Samples OB15-S (17'), RW-1 (36') and AP33-DO (35') were re-analyzed at larger dilutions to bring target analytes within the calibration range of the method. Both dilutions were reported with analytes over the calibration range flagged with an "E" and the diluted analytes flagged with a "D".

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits.

All samples were analyzed within the required holding time of 14 days.

**Inorganic Analyses**

Ten water samples were analyzed for a site specific list of inorganics. Please attached data pages for method numbers.

The initial and continuing calibration criteria were met for all analytes.

All Blank Spike (LCS) recoveries were within QC limits.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150151

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1403116-001-004

Matrices: Groundwater/Surface Water  Soil/Sediment Drinking Water Air Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X	Yes	No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X	Yes	No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X	Yes	No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X	Yes	No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes	No	Yes
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X	Yes	No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X	Yes	No <sup>1</sup>
----------	---	---	-----	-----------------

**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X	Yes	No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes	X	No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:

Position: Client Services  
Manager

Printed Name: Janice Jaeger

Date: 08/20/14 **00004**

## CASE NARRATIVE

This report contains analytical results for the following samples:

Service Request Number: R1406092

<u>Lab ID</u>	<u>Client ID</u>
R1406092-001	OB25-DO (65')
R1406092-002	AP30R-DO (50')
R1406092-003	MW-9 (19')
R1406092-004	OB15-S (17')
R1406092-005	RW-1 (36')
R1406092-006	AP23-DO (46')
R1406092-007	AP35-DO (33')
R1406092-008	AP34-DO (33')
R1406092-009	AP24-DO (46')
R1406092-010	AP13-DO (49')
R1406092-011	AP33-DO (35')
R1406092-012	AP25-DO (44')
R1406092-013	OB9-S (18')
R1406092-014	EB-1
R1406092-015	TB-1

00005

**REPORT QUALIFIERS AND DEFINITIONS**

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

**Lab ID # for Massachusetts Certification**

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis*

*Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

*Juan C. Jacobe*

*Director, Division of Environmental Analysis*

*Issued:* 01 JUL 2014

*Expires:* 30 JUN 2015

00006A



**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: 01 JUL 2014

M-NY032

**ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY**

**NON POTABLE WATER (CHEMISTRY)**

**Effective  
Date**

**01 JUL 2014**

**Expiration 30 JUN 2015  
Date**

**Analytes**

**Methods**

ALUMINUM	EPA 200.7
ANTIMONY	EPA 200.7
ANTIMONY	EPA 200.8
ARSENIC	EPA 200.7
ARSENIC	EPA 200.8
BERYLLIUM	EPA 200.7
BERYLLIUM	EPA 200.8
CADMIUM	EPA 200.7
CADMIUM	EPA 200.8
CHROMIUM	EPA 200.7
CHROMIUM	EPA 200.8
COBALT	EPA 200.7
COBALT	EPA 200.8
COPPER	EPA 200.7
COPPER	EPA 200.8
IRON	EPA 200.7
LEAD	EPA 200.7
LEAD	EPA 200.8
MANGANESE	EPA 200.7
MANGANESE	EPA 200.8
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
MOLYBDENUM	EPA 200.8
NICKEL	EPA 200.7
NICKEL	EPA 200.8
SELENIUM	EPA 200.7
SELENIUM	EPA 200.8
SILVER	EPA 200.7
SILVER	EPA 200.8
THALLIUM	EPA 200.7
THALLIUM	EPA 200.8
VANADIUM	EPA 200.7
VANADIUM	EPA 200.8
ZINC	EPA 200.7
ZINC	EPA 200.8
SPECIFIC CONDUCTIVITY	EPA 120.1
TOTAL DISSOLVED SOLIDS	SM 2540C
HARDNESS (CaCO3), TOTAL	SM 2340C
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
ALKALINITY, TOTAL	SM 2320B

June 26, 2014

\*= Provisional Certification

Page 1 of 2

00006B

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2014

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY)      Effective Date      01 JUL 2014      Expiration Date      30 JUN 2015

Analytes

Methods

CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 365.1
PHOSPHORUS, TOTAL	EPA 365.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608



## INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

### Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	3010A
200.8	ILM05.3
6010C	3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

### Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3010A
6010 SPLP (1312) extract	3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

RIGHT SOLUTIONS | RIGHT PARTNER

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/6/14 0845  
 Date Received: 8/7/14  
 Date Analyzed: 8/15/14 05:50

Sample Name: OB25-DO (65')  
 Lab Code: R1406092-001

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081414\M8218.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 100

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	200	U	200	
79-34-5	1,1,2,2-Tetrachloroethane	200	U	200	
79-00-5	1,1,2-Trichloroethane	200	U	200	
75-34-3	1,1-Dichloroethane (1,1-DCA)	200	U	200	
75-35-4	1,1-Dichloroethene (1,1-DCE)	200	U	200	
107-06-2	1,2-Dichloroethane	200	U	200	
78-87-5	1,2-Dichloropropane	200	U	200	
67-64-1	Acetone	1000	U	1000	
75-27-4	Bromodichloromethane	200	U	200	
75-25-2	Bromoform	200	U	200	
74-83-9	Bromomethane	200	U	200	
56-23-5	Carbon Tetrachloride	200	U	200	
108-90-7	Chlorobenzene	200	U	200	
75-00-3	Chloroethane	200	U	200	
67-66-3	Chloroform	200	U	200	
74-87-3	Chloromethane	200	U	200	
124-48-1	Dibromochloromethane	200	U	200	
75-09-2	Methylene Chloride	200	U	200	
127-18-4	Tetrachloroethene (PCE)	560		200	
79-01-6	Trichloroethene (TCE)	16000		200	
75-69-4	Trichlorofluoromethane (CFC 11)	200	U	200	
75-01-4	Vinyl Chloride	200	U	200	
156-59-2	cis-1,2-Dichloroethene	450		200	
10061-01-5	cis-1,3-Dichloropropene	200	U	200	
156-60-5	trans-1,2-Dichloroethene	200	U	200	
10061-02-6	trans-1,3-Dichloropropene	200	U	200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	8/15/14 05:50	
Dibromofluoromethane	107	70-130	8/15/14 05:50	
Toluene-d8	100	70-130	8/15/14 05:50	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 0820  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/15/14 04:45

Sample Name: AP30R-DO (50')  
 Lab Code: R1406092-002

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081414\M8216.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 50

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	270		100	
79-34-5	1,1,2,2-Tetrachloroethane	100	U	100	
79-00-5	1,1,2-Trichloroethane	100	U	100	
75-34-3	1,1-Dichloroethane (1,1-DCA)	100	U	100	
75-35-4	1,1-Dichloroethene (1,1-DCE)	100	U	100	
107-06-2	1,2-Dichloroethane	100	U	100	
78-87-5	1,2-Dichloropropane	100	U	100	
67-64-1	Acetone	500	U	500	
75-27-4	Bromodichloromethane	100	U	100	
75-25-2	Bromoform	100	U	100	
74-83-9	Bromomethane	100	U	100	
56-23-5	Carbon Tetrachloride	230		100	
108-90-7	Chlorobenzene	100	U	100	
75-00-3	Chloroethane	100	U	100	
67-66-3	Chloroform	1200		100	
74-87-3	Chloromethane	100	U	100	
124-48-1	Dibromochloromethane	100	U	100	
75-09-2	Methylene Chloride	100	U	100	
127-18-4	Tetrachloroethene (PCE)	1100		100	
79-01-6	Trichloroethene (TCE)	8300		100	
75-69-4	Trichlorofluoromethane (CFC 11)	100	U	100	
75-01-4	Vinyl Chloride	100	U	100	
156-59-2	cis-1,2-Dichloroethene	710		100	
10061-01-5	cis-1,3-Dichloropropene	100	U	100	
156-60-5	trans-1,2-Dichloroethene	100	U	100	
10061-02-6	trans-1,3-Dichloropropene	100	U	100	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	8/15/14 04:45	
Dibromofluoromethane	110	70-130	8/15/14 04:45	
Toluene-d8	102	70-130	8/15/14 04:45	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water  
Sample Name: MW-9 (19')  
Lab Code: R1406092-003

Service Request: R1406092  
Date Collected: 8/ 6/14 0930  
Date Received: 8/ 7/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	890		mg/L	100	100	NA	8/13/14 21:55	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 0930  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/18/14 14:08

Sample Name: MW-9 (19')  
 Lab Code: R1406092-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081814\M8260.D\

Analysis Lot: 407142  
 Instrument Name: R-MS-12  
 Dilution Factor: 20

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	40	U	40	
79-34-5	1,1,2,2-Tetrachloroethane	40	U	40	
79-00-5	1,1,2-Trichloroethane	40	U	40	
75-34-3	1,1-Dichloroethane (1,1-DCA)	40	U	40	
75-35-4	1,1-Dichloroethene (1,1-DCE)	40	U	40	
107-06-2	1,2-Dichloroethane	40	U	40	
78-87-5	1,2-Dichloropropane	40	U	40	
67-64-1	Acetone	200	U	200	
75-27-4	Bromodichloromethane	40	U	40	
75-25-2	Bromoform	40	U	40	
74-83-9	Bromomethane	40	U	40	
56-23-5	Carbon Tetrachloride	40	U	40	
108-90-7	Chlorobenzene	40	U	40	
75-00-3	Chloroethane	40	U	40	
67-66-3	Chloroform	40	U	40	
74-87-3	Chloromethane	40	U	40	
124-48-1	Dibromochloromethane	40	U	40	
75-09-2	Methylene Chloride	40	U	40	
127-18-4	Tetrachloroethene (PCE)	40	U	40	
79-01-6	Trichloroethene (TCE)	40	U	40	
75-69-4	Trichlorofluoromethane (CFC 11)	40	U	40	
75-01-4	Vinyl Chloride	690		40	
156-59-2	cis-1,2-Dichloroethene	2600		40	
10061-01-5	cis-1,3-Dichloropropene	40	U	40	
156-60-5	trans-1,2-Dichloroethene	40	U	40	
10061-02-6	trans-1,3-Dichloropropene	40	U	40	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	8/18/14 14:08	
Dibromofluoromethane	108	70-130	8/18/14 14:08	
Toluene-d8	99	70-130	8/18/14 14:08	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Collected: 8/ 6/14 0930  
Date Received: 8/ 7/14  
Date Analyzed: 8/8/14 10:32

Sample Name: MW-9 (19')  
Lab Code: R1406092-003

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1005.run

Analysis Lot: 405651  
Instrument Name: R-GC-02  
Dilution Factor: 125

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	540	130	
74-85-1	Ethene	1500	130	
74-82-8	Methane	9600	130	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water  
Sample Name: OB15-S (17')  
Lab Code: R1406092-004

Service Request: R1406092  
Date Collected: 8/6/14 0900  
Date Received: 8/7/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(20)	36.5	mg/L	4.0	4	NA	8/13/14 22:58	

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 0900  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/15/14 03:08

Sample Name: OB15-S (17')  
 Lab Code: R1406092-004

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081414\M8213.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.2		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.9		2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	3.8		2.0	
156-59-2	cis-1,2-Dichloroethene	6.0		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	8/15/14 03:08	
Dibromofluoromethane	111	70-130	8/15/14 03:08	
Toluene-d8	101	70-130	8/15/14 03:08	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 0900  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/8/14 10:42

Sample Name: OB15-S (17')  
 Lab Code: R1406092-004

Units: µg/L  
 Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
 Data File Name: 1006.run

Analysis Lot: 405651  
 Instrument Name: R-GC-02  
 Dilution Factor: 125

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	440	130	
74-85-1	Ethene	130 U	130	
74-82-8	Methane	15000 E	130	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 0900  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/8/14 10:52

Sample Name: OB15-S (17')  
 Lab Code: R1406092-004  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
 Data File Name: 1007.run

Analysis Lot: 405651  
 Instrument Name: R-GC-02  
 Dilution Factor: 250

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	440	250	
74-85-1	Ethene	250 U	250	
74-82-8	Methane	15000 D	250	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water  
Sample Name: RW-1 (36)  
Lab Code: R1406092-005

Service Request: R1406092  
Date Collected: 8/ 6/14 1000  
Date Received: 8/ 7/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	15.7	mg/L	1.0	1	NA	8/14/14 17:43	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 1000  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/15/14 04:13

Sample Name: RW-1 (36')  
 Lab Code: R1406092-005

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081414\M8215.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 25

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	50	U	50	
79-34-5	1,1,2,2-Tetrachloroethane	50	U	50	
79-00-5	1,1,2-Trichloroethane	50	U	50	
75-34-3	1,1-Dichloroethane (1,1-DCA)	50	U	50	
75-35-4	1,1-Dichloroethene (1,1-DCE)	50	U	50	
107-06-2	1,2-Dichloroethane	50	U	50	
78-87-5	1,2-Dichloropropane	50	U	50	
67-64-1	Acetone	250	U	250	
75-27-4	Bromodichloromethane	50	U	50	
75-25-2	Bromoform	50	U	50	
74-83-9	Bromomethane	50	U	50	
56-23-5	Carbon Tetrachloride	50	U	50	
108-90-7	Chlorobenzene	50	U	50	
75-00-3	Chloroethane	50	U	50	
67-66-3	Chloroform	50	U	50	
74-87-3	Chloromethane	50	U	50	
124-48-1	Dibromochloromethane	50	U	50	
75-09-2	Methylene Chloride	50	U	50	
127-18-4	Tetrachloroethene (PCE)	770		50	
79-01-6	Trichloroethene (TCE)	450		50	
75-69-4	Trichlorofluoromethane (CFC 11)	50	U	50	
75-01-4	Vinyl Chloride	490		50	
156-59-2	cis-1,2-Dichloroethene	7900	E	50	
10061-01-5	cis-1,3-Dichloropropene	50	U	50	
156-60-5	trans-1,2-Dichloroethene	78		50	
10061-02-6	trans-1,3-Dichloropropene	50	U	50	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	8/15/14 04:13	
Dibromofluoromethane	110	70-130	8/15/14 04:13	
Toluene-d8	101	70-130	8/15/14 04:13	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 1000  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/15/14 19:19

Sample Name: RW-1 (36')  
 Lab Code: R1406092-005  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081514\M8243.D\

Analysis Lot: 406845  
 Instrument Name: R-MS-12  
 Dilution Factor: 50

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	100	U	100	
79-34-5	1,1,2,2-Tetrachloroethane	100	U	100	
79-00-5	1,1,2-Trichloroethane	100	U	100	
75-34-3	1,1-Dichloroethane (1,1-DCA)	100	U	100	
75-35-4	1,1-Dichloroethene (1,1-DCE)	100	U	100	
107-06-2	1,2-Dichloroethane	100	U	100	
78-87-5	1,2-Dichloropropane	100	U	100	
67-64-1	Acetone	500	U	500	
75-27-4	Bromodichloromethane	100	U	100	
75-25-2	Bromoform	100	U	100	
74-83-9	Bromomethane	100	U	100	
56-23-5	Carbon Tetrachloride	100	U	100	
108-90-7	Chlorobenzene	100	U	100	
75-00-3	Chloroethane	100	U	100	
67-66-3	Chloroform	100	U	100	
74-87-3	Chloromethane	100	U	100	
124-48-1	Dibromochloromethane	100	U	100	
75-09-2	Methylene Chloride	100	U	100	
127-18-4	Tetrachloroethene (PCE)	710	D	100	
79-01-6	Trichloroethene (TCE)	410	D	100	
75-69-4	Trichlorofluoromethane (CFC 11)	100	U	100	
75-01-4	Vinyl Chloride	480	D	100	
156-59-2	cis-1,2-Dichloroethene	7700	D	100	
10061-01-5	cis-1,3-Dichloropropene	100	U	100	
156-60-5	trans-1,2-Dichloroethene	100	U	100	
10061-02-6	trans-1,3-Dichloropropene	100	U	100	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	70-130	8/15/14 19:19	
Dibromofluoromethane	111	70-130	8/15/14 19:19	
Toluene-d8	102	70-130	8/15/14 19:19	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Collected: 8/ 6/14 1000  
Date Received: 8/ 7/14  
Date Analyzed: 8/8/14 11:02

Sample Name: RW-1 (36')  
Lab Code: R1406092-005

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1008.run

Analysis Lot: 405651  
Instrument Name: R-GC-02  
Dilution Factor: 5

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	5.0 U	5.0	
74-85-1	Ethene	5.0 U	5.0	
74-82-8	Methane	710 E	5.0	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Collected: 8/ 6/14 1000  
Date Received: 8/ 7/14  
Date Analyzed: 8/8/14 11:12

Sample Name: RW-1 (36")  
Lab Code: R1406092-005  
Run Type: Dilution

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1009.run

Analysis Lot: 405651  
Instrument Name: R-GC-02  
Dilution Factor: 10

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	10 U	10	
74-85-1	Ethene	10 U	10	
74-82-8	Methane	710 D	10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: AP23-DO (46')  
 Lab Code: R1406092-006

Service Request: R1406092  
 Date Collected: 8/6/14 1030  
 Date Received: 8/7/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	231		mg/L	40	40	NA	8/14/14 00:42	
Nitrate as Nitrogen	300.0	1.0	U	mg/L	1.0	10	NA	8/7/14 20:45	
Sulfate	300.0	6.6		mg/L	2.0	10	NA	8/7/14 20:45	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: AP23-DO (46')  
 Lab Code: R1406092-006

Service Request: R1406092  
 Date Collected: 8/ 6/14 1030  
 Date Received: 8/ 7/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	570	µg/L	100	1	8/11/14	8/12/14 20:37	
Manganese, Dissolved	6010C	7560	µg/L	50	5	8/11/14	8/13/14 20:50	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 1030  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/15/14 07:26

Sample Name: AP23-DO (46')  
 Lab Code: R1406092-006

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa12\Data\081414\M8221.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 2000

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	4000	U	4000	
79-34-5	1,1,2,2-Tetrachloroethane	4000	U	4000	
79-00-5	1,1,2-Trichloroethane	4000	U	4000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4000	U	4000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	4000	U	4000	
107-06-2	1,2-Dichloroethane	4000	U	4000	
78-87-5	1,2-Dichloropropane	4000	U	4000	
67-64-1	Acetone	76000		20000	
75-27-4	Bromodichloromethane	4000	U	4000	
75-25-2	Bromoform	4000	U	4000	
74-83-9	Bromomethane	4000	U	4000	
56-23-5	Carbon Tetrachloride	4000	U	4000	
108-90-7	Chlorobenzene	4000	U	4000	
75-00-3	Chloroethane	4000	U	4000	
67-66-3	Chloroform	4000	U	4000	
74-87-3	Chloromethane	4000	U	4000	
124-48-1	Dibromochloromethane	4000	U	4000	
75-09-2	Methylene Chloride	4000	U	4000	
127-18-4	Tetrachloroethene (PCE)	61000		4000	
79-01-6	Trichloroethene (TCE)	520000	E	4000	
75-69-4	Trichlorofluoromethane (CFC 11)	4000	U	4000	
75-01-4	Vinyl Chloride	4000	U	4000	
156-59-2	cis-1,2-Dichloroethene	4000	U	4000	
10061-01-5	cis-1,3-Dichloropropene	4000	U	4000	
156-60-5	trans-1,2-Dichloroethene	4000	U	4000	
10061-02-6	trans-1,3-Dichloropropene	4000	U	4000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	70-130	8/15/14 07:26	
Dibromofluoromethane	110	70-130	8/15/14 07:26	
Toluene-d8	101	70-130	8/15/14 07:26	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 1030  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/15/14 20:57

Sample Name: AP23-DO (46')  
 Lab Code: R1406092-006  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081514\M8246.D\

Analysis Lot: 406845  
 Instrument Name: R-MS-12  
 Dilution Factor: 5000

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10000	U	10000	
79-34-5	1,1,2,2-Tetrachloroethane	10000	U	10000	
79-00-5	1,1,2-Trichloroethane	10000	U	10000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10000	U	10000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10000	U	10000	
107-06-2	1,2-Dichloroethane	10000	U	10000	
78-87-5	1,2-Dichloropropane	10000	U	10000	
67-64-1	Acetone	57000	D	50000	
75-27-4	Bromodichloromethane	10000	U	10000	
75-25-2	Bromoform	10000	U	10000	
74-83-9	Bromomethane	10000	U	10000	
56-23-5	Carbon Tetrachloride	10000	U	10000	
108-90-7	Chlorobenzene	10000	U	10000	
75-00-3	Chloroethane	10000	U	10000	
67-66-3	Chloroform	10000	U	10000	
74-87-3	Chloromethane	10000	U	10000	
124-48-1	Dibromochloromethane	10000	U	10000	
75-09-2	Methylene Chloride	10000	U	10000	
127-18-4	Tetrachloroethene (PCE)	49000	D	10000	
79-01-6	Trichloroethene (TCE)	440000	D	10000	
75-69-4	Trichlorofluoromethane (CFC 11)	10000	U	10000	
75-01-4	Vinyl Chloride	10000	U	10000	
156-59-2	cis-1,2-Dichloroethene	10000	U	10000	
10061-01-5	cis-1,3-Dichloropropene	10000	U	10000	
156-60-5	trans-1,2-Dichloroethene	10000	U	10000	
10061-02-6	trans-1,3-Dichloropropene	10000	U	10000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	70-130	8/15/14 20:57	
Dibromofluoromethane	110	70-130	8/15/14 20:57	
Toluene-d8	102	70-130	8/15/14 20:57	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Collected: 8/ 6/14 1030  
Date Received: 8/ 7/14  
Date Analyzed: 8/8/14 11:24

Sample Name: AP23-DO (46')  
Lab Code: R1406092-006

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1010.run

Analysis Lot: 405651  
Instrument Name: R-GC-02  
Dilution Factor: 10

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	10 U	10	
74-85-1	Ethene	750	10	
74-82-8	Methane	110	10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: AP35-DO (33')  
 Lab Code: R1406092-007

Service Request: R1406092  
 Date Collected: 8/ 6/14 1100  
 Date Received: 8/ 7/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201)	7.7	mg/L	1.0	1	NA	8/14/14 18:04	
Nitrate as Nitrogen	300.0	1.8	mg/L	1.0	10	NA	8/7/14 20:33	
Sulfate	300.0	2.2	mg/L	2.0	10	NA	8/7/14 20:33	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: AP35-DO (33')  
 Lab Code: R1406092-007

Service Request: R1406092  
 Date Collected: 8/ 6/14 1100  
 Date Received: 8/ 7/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	820		µg/L	100	1	8/11/14	8/12/14 20:44	
Manganese, Dissolved	6010C	313		µg/L	10	1	8/11/14	8/12/14 20:44	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 1100  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/15/14 20:24

Sample Name: AP35-DO (33')  
 Lab Code: R1406092-007

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081514\M8245.D\

Analysis Lot: 406845  
 Instrument Name: R-MS-12  
 Dilution Factor: 200

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	810		400	
79-34-5	1,1,2,2-Tetrachloroethane	400	U	400	
79-00-5	1,1,2-Trichloroethane	400	U	400	
75-34-3	1,1-Dichloroethane (1,1-DCA)	400	U	400	
75-35-4	1,1-Dichloroethene (1,1-DCE)	400	U	400	
107-06-2	1,2-Dichloroethane	400	U	400	
78-87-5	1,2-Dichloropropane	400	U	400	
67-64-1	Acetone	2000	U	2000	
75-27-4	Bromodichloromethane	400	U	400	
75-25-2	Bromoform	400	U	400	
74-83-9	Bromomethane	400	U	400	
56-23-5	Carbon Tetrachloride	400	U	400	
108-90-7	Chlorobenzene	400	U	400	
75-00-3	Chloroethane	400	U	400	
67-66-3	Chloroform	590		400	
74-87-3	Chloromethane	400	U	400	
124-48-1	Dibromochloromethane	400	U	400	
75-09-2	Methylene Chloride	400	U	400	
127-18-4	Tetrachloroethene (PCE)	1800		400	
79-01-6	Trichloroethene (TCE)	63000	E	400	
75-69-4	Trichlorofluoromethane (CFC 11)	400	U	400	
75-01-4	Vinyl Chloride	530		400	
156-59-2	cis-1,2-Dichloroethene	250000	E	400	
10061-01-5	cis-1,3-Dichloropropene	400	U	400	
156-60-5	trans-1,2-Dichloroethene	1800		400	
10061-02-6	trans-1,3-Dichloropropene	400	U	400	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	70-130	8/15/14 20:24	
Dibromofluoromethane	113	70-130	8/15/14 20:24	
Toluene-d8	102	70-130	8/15/14 20:24	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/6/14 1100  
 Date Received: 8/7/14  
 Date Analyzed: 8/18/14 14:41

Sample Name: AP35-DO (33')  
 Lab Code: R1406092-007  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa12\Data\081814\M8261.D\

Analysis Lot: 407142  
 Instrument Name: R-MS-12  
 Dilution Factor: 2500

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5000	U	5000	
79-34-5	1,1,2,2-Tetrachloroethane	5000	U	5000	
79-00-5	1,1,2-Trichloroethane	5000	U	5000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5000	U	5000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5000	U	5000	
107-06-2	1,2-Dichloroethane	5000	U	5000	
78-87-5	1,2-Dichloropropane	5000	U	5000	
67-64-1	Acetone	25000	U	25000	
75-27-4	Bromodichloromethane	5000	U	5000	
75-25-2	Bromoform	5000	U	5000	
74-83-9	Bromomethane	5000	U	5000	
56-23-5	Carbon Tetrachloride	5000	U	5000	
108-90-7	Chlorobenzene	5000	U	5000	
75-00-3	Chloroethane	5000	U	5000	
67-66-3	Chloroform	5000	U	5000	
74-87-3	Chloromethane	5000	U	5000	
124-48-1	Dibromochloromethane	5000	U	5000	
75-09-2	Methylene Chloride	5000	U	5000	
127-18-4	Tetrachloroethene (PCE)	5000	U	5000	
79-01-6	Trichloroethene (TCE)	46000	D	5000	
75-69-4	Trichlorofluoromethane (CFC 11)	5000	U	5000	
75-01-4	Vinyl Chloride	5000	U	5000	
156-59-2	cis-1,2-Dichloroethene	230000	D	5000	
10061-01-5	cis-1,3-Dichloropropene	5000	U	5000	
156-60-5	trans-1,2-Dichloroethene	5000	U	5000	
10061-02-6	trans-1,3-Dichloropropene	5000	U	5000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	8/18/14 14:41	
Dibromofluoromethane	110	70-130	8/18/14 14:41	
Toluene-d8	101	70-130	8/18/14 14:41	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Collected: 8/6/14 1100  
Date Received: 8/7/14  
Date Analyzed: 8/8/14 11:35

Sample Name: AP35-DO (33')  
Lab Code: R1406092-007

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1011.run

Analysis Lot: 405651  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
74-84-0	Ethane	1.0		1.0	
74-85-1	Ethene	5.6		1.0	
74-82-8	Methane	19		1.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: AP34-DO (33')  
 Lab Code: R1406092-008

Service Request: R1406092  
 Date Collected: 8/ 6/14 1130  
 Date Received: 8/ 7/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	112		mg/L	10	10	NA	8/14/14 01:24	
Nitrate as Nitrogen	300.0	1.0	U	mg/L	1.0	10	NA	8/7/14 17:39	
Sulfate	300.0	3.1		mg/L	2.0	10	NA	8/7/14 17:39	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: AP34-DO (33')  
 Lab Code: R1406092-008

Service Request: R1406092  
 Date Collected: 8/ 6/14 1130  
 Date Received: 8/ 7/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	890	µg/L	100	1	8/11/14	8/12/14 21:03	
Manganese, Dissolved	6010C	9090	µg/L	50	5	8/11/14	8/13/14 20:56	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/6/14 1130  
 Date Received: 8/7/14  
 Date Analyzed: 8/15/14 06:22

Sample Name: AP34-DO (33')  
 Lab Code: R1406092-008

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa12\Data\081414\M8219.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 500

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1100		1000	
79-34-5	1,1,2,2-Tetrachloroethane	1000	U	1000	
79-00-5	1,1,2-Trichloroethane	1000	U	1000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1000	U	1000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1000	U	1000	
107-06-2	1,2-Dichloroethane	1000	U	1000	
78-87-5	1,2-Dichloropropane	1000	U	1000	
67-64-1	Acetone	5000	U	5000	
75-27-4	Bromodichloromethane	1000	U	1000	
75-25-2	Bromoform	1000	U	1000	
74-83-9	Bromomethane	1000	U	1000	
56-23-5	Carbon Tetrachloride	1000	U	1000	
108-90-7	Chlorobenzene	1000	U	1000	
75-00-3	Chloroethane	1000	U	1000	
67-66-3	Chloroform	1000	U	1000	
74-87-3	Chloromethane	1000	U	1000	
124-48-1	Dibromochloromethane	1000	U	1000	
75-09-2	Methylene Chloride	1000	U	1000	
127-18-4	Tetrachloroethene (PCE)	1000	U	1000	
79-01-6	Trichloroethene (TCE)	1000	U	1000	
75-69-4	Trichlorofluoromethane (CFC 11)	1000	U	1000	
75-01-4	Vinyl Chloride	1000	U	1000	
156-59-2	cis-1,2-Dichloroethene	77000		1000	
10061-01-5	cis-1,3-Dichloropropene	1000	U	1000	
156-60-5	trans-1,2-Dichloroethene	1000	U	1000	
10061-02-6	trans-1,3-Dichloropropene	1000	U	1000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	8/15/14 06:22	
Dibromofluoromethane	110	70-130	8/15/14 06:22	
Toluene-d8	100	70-130	8/15/14 06:22	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Collected: 8/ 6/14 1130  
Date Received: 8/ 7/14  
Date Analyzed: 8/8/14 11:55

Sample Name: AP34-DO (33')  
Lab Code: R1406092-008

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1013.run

Analysis Lot: 405651  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	1.0 U	1.0	
74-85-1	Ethene	42	1.0	
74-82-8	Methane	43	1.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: AP24-DO (46')  
 Lab Code: R1406092-009

Service Request: R1406092  
 Date Collected: 8/ 6/14 1200  
 Date Received: 8/ 7/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	13.6	mg/L	1.0	1	NA	8/14/14 01:45	
Nitrate as Nitrogen	300.0	1.0 U	mg/L	1.0	10	NA	8/7/14 17:52	
Sulfate	300.0	13.4	mg/L	2.0	10	NA	8/7/14 17:52	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water  
Sample Name: AP24-DO (46')  
Lab Code: R1406092-009

Service Request: R1406092  
Date Collected: 8/ 6/14 1200  
Date Received: 8/ 7/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	1670	µg/L	100	1	8/11/14	8/12/14 21:10	
Manganese, Dissolved	6010C	1190	µg/L	10	1	8/11/14	8/12/14 21:10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 1200  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/15/14 07:58

Sample Name: AP24-DO (46')  
 Lab Code: R1406092-009

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081414\M8222.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 2000

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	120000		4000	
79-34-5	1,1,2,2-Tetrachloroethane	4000	U	4000	
79-00-5	1,1,2-Trichloroethane	4000	U	4000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4000	U	4000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	4000	U	4000	
107-06-2	1,2-Dichloroethane	4000	U	4000	
78-87-5	1,2-Dichloropropane	4000	U	4000	
67-64-1	Acetone	20000	U	20000	
75-27-4	Bromodichloromethane	4000	U	4000	
75-25-2	Bromoform	4000	U	4000	
74-83-9	Bromomethane	4000	U	4000	
56-23-5	Carbon Tetrachloride	4000	U	4000	
108-90-7	Chlorobenzene	4000	U	4000	
75-00-3	Chloroethane	4000	U	4000	
67-66-3	Chloroform	4000	U	4000	
74-87-3	Chloromethane	4000	U	4000	
124-48-1	Dibromochloromethane	4000	U	4000	
75-09-2	Methylene Chloride	4000	U	4000	
127-18-4	Tetrachloroethene (PCE)	39000		4000	
79-01-6	Trichloroethene (TCE)	490000	E	4000	
75-69-4	Trichlorofluoromethane (CFC 11)	4000	U	4000	
75-01-4	Vinyl Chloride	4000	U	4000	
156-59-2	cis-1,2-Dichloroethene	12000		4000	
10061-01-5	cis-1,3-Dichloropropene	4000	U	4000	
156-60-5	trans-1,2-Dichloroethene	4000	U	4000	
10061-02-6	trans-1,3-Dichloropropene	4000	U	4000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	99	70-130	8/15/14 07:58	
Dibromofluoromethane	109	70-130	8/15/14 07:58	
Toluene-d8	101	70-130	8/15/14 07:58	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 1200  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/15/14 21:29

Sample Name: AP24-DO (46')  
 Lab Code: R1406092-009  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081514\M8247.D\

Analysis Lot: 406845  
 Instrument Name: R-MS-12  
 Dilution Factor: 5000

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	140000	D	10000	
79-34-5	1,1,2,2-Tetrachloroethane	10000	U	10000	
79-00-5	1,1,2-Trichloroethane	10000	U	10000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10000	U	10000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10000	U	10000	
107-06-2	1,2-Dichloroethane	10000	U	10000	
78-87-5	1,2-Dichloropropane	10000	U	10000	
67-64-1	Acetone	50000	U	50000	
75-27-4	Bromodichloromethane	10000	U	10000	
75-25-2	Bromoform	10000	U	10000	
74-83-9	Bromomethane	10000	U	10000	
56-23-5	Carbon Tetrachloride	10000	U	10000	
108-90-7	Chlorobenzene	10000	U	10000	
75-00-3	Chloroethane	10000	U	10000	
67-66-3	Chloroform	10000	U	10000	
74-87-3	Chloromethane	10000	U	10000	
124-48-1	Dibromochloromethane	10000	U	10000	
75-09-2	Methylene Chloride	10000	U	10000	
127-18-4	Tetrachloroethene (PCE)	44000	D	10000	
79-01-6	Trichloroethene (TCE)	560000	D	10000	
75-69-4	Trichlorofluoromethane (CFC 11)	10000	U	10000	
75-01-4	Vinyl Chloride	10000	U	10000	
156-59-2	cis-1,2-Dichloroethene	15000	D	10000	
10061-01-5	cis-1,3-Dichloropropene	10000	U	10000	
156-60-5	trans-1,2-Dichloroethene	10000	U	10000	
10061-02-6	trans-1,3-Dichloropropene	10000	U	10000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	8/15/14 21:29	
Dibromofluoromethane	110	70-130	8/15/14 21:29	
Toluene-d8	102	70-130	8/15/14 21:29	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Collected: 8/ 6/14 1200  
Date Received: 8/ 7/14  
Date Analyzed: 8/8/14 12:05

Sample Name: AP24-DO (46')  
Lab Code: R1406092-009

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1014.run

Analysis Lot: 405651  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	1.0 U	1.0	
74-85-1	Ethene	10	1.0	
74-82-8	Methane	1.0 U	1.0	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/6/14 1230  
 Date Received: 8/7/14  
 Date Analyzed: 8/15/14 08:31

Sample Name: AP13-DO (49')  
 Lab Code: R1406092-010

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081414\M8223.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 2000

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	26000		4000	
79-34-5	1,1,2,2-Tetrachloroethane	4000	U	4000	
79-00-5	1,1,2-Trichloroethane	4000	U	4000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4000	U	4000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	4000	U	4000	
107-06-2	1,2-Dichloroethane	4000	U	4000	
78-87-5	1,2-Dichloropropane	4000	U	4000	
67-64-1	Acetone	28000		20000	
75-27-4	Bromodichloromethane	4000	U	4000	
75-25-2	Bromoform	4000	U	4000	
74-83-9	Bromomethane	4000	U	4000	
56-23-5	Carbon Tetrachloride	4000	U	4000	
108-90-7	Chlorobenzene	4000	U	4000	
75-00-3	Chloroethane	4000	U	4000	
67-66-3	Chloroform	4000	U	4000	
74-87-3	Chloromethane	4000	U	4000	
124-48-1	Dibromochloromethane	4000	U	4000	
75-09-2	Methylene Chloride	4000	U	4000	
127-18-4	Tetrachloroethene (PCE)	92000		4000	
79-01-6	Trichloroethene (TCE)	320000		4000	
75-69-4	Trichlorofluoromethane (CFC 11)	4000	U	4000	
75-01-4	Vinyl Chloride	4000	U	4000	
156-59-2	cis-1,2-Dichloroethene	11000		4000	
10061-01-5	cis-1,3-Dichloropropene	4000	U	4000	
156-60-5	trans-1,2-Dichloroethene	4000	U	4000	
10061-02-6	trans-1,3-Dichloropropene	4000	U	4000	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	8/15/14 08:31	
Dibromofluoromethane	109	70-130	8/15/14 08:31	
Toluene-d8	101	70-130	8/15/14 08:31	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: AP33-DO (35')  
 Lab Code: R1406092-011

Service Request: R1406092  
 Date Collected: 8/6/14 1300  
 Date Received: 8/7/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201)	177	mg/L	10	10	NA	8/14/14 18:25	
Nitrate as Nitrogen	300.0	1.0 U	mg/L	1.0	10	NA	8/7/14 18:04	
Sulfate	300.0	2.0 U	mg/L	2.0	10	NA	8/7/14 18:04	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: AP33-DO (35')  
 Lab Code: R1406092-011

Service Request: R1406092  
 Date Collected: 8/ 6/14 1300  
 Date Received: 8/ 7/14

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	4300		µg/L	100	1	8/11/14	8/12/14 21:16	
Manganese, Dissolved	6010C	1890		µg/L	50	5	8/11/14	8/13/14 21:02	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/6/14 1300  
 Date Received: 8/7/14  
 Date Analyzed: 8/15/14 09:03

Sample Name: AP33-DO (35')  
 Lab Code: R1406092-011

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUATA\msvoa12\Data\081414\M8224.D

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 2500

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	82000	5000	
79-34-5	1,1,2,2-Tetrachloroethane	5000 U	5000	
79-00-5	1,1,2-Trichloroethane	5000 U	5000	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5000 U	5000	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5000 U	5000	
107-06-2	1,2-Dichloroethane	5000 U	5000	
78-87-5	1,2-Dichloropropane	5000 U	5000	
67-64-1	Acetone	25000 U	25000	
75-27-4	Bromodichloromethane	5000 U	5000	
75-25-2	Bromoform	5000 U	5000	
74-83-9	Bromomethane	5000 U	5000	
56-23-5	Carbon Tetrachloride	5000 U	5000	
108-90-7	Chlorobenzene	5000 U	5000	
75-00-3	Chloroethane	5000 U	5000	
67-66-3	Chloroform	5000 U	5000	
74-87-3	Chloromethane	5000 U	5000	
124-48-1	Dibromochloromethane	5000 U	5000	
75-09-2	Methylene Chloride	5000 U	5000	
127-18-4	Tetrachloroethene (PCE)	66000	5000	
79-01-6	Trichloroethene (TCE)	330000	5000	
75-69-4	Trichlorofluoromethane (CFC 11)	5000 U	5000	
75-01-4	Vinyl Chloride	5600	5000	
156-59-2	cis-1,2-Dichloroethene	170000	5000	
10061-01-5	cis-1,3-Dichloropropene	5000 U	5000	
156-60-5	trans-1,2-Dichloroethene	5000 U	5000	
10061-02-6	trans-1,3-Dichloropropene	5000 U	5000	

Surrogate Name	%Rec	Control Limits	Date Analyzed Q
4-Bromofluorobenzene	101	70-130	8/15/14 09:03
Dibromofluoromethane	108	70-130	8/15/14 09:03
Toluene-d8	101	70-130	8/15/14 09:03



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Collected: 8/ 6/14 1300  
Date Received: 8/ 7/14  
Date Analyzed: 8/8/14 12:55

Sample Name: AP33-DO (35')  
Lab Code: R1406092-011

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1018.run

Analysis Lot: 405651  
Instrument Name: R-GC-02  
Dilution Factor: 2

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	13	2.0	
74-85-1	Ethene	850 E	2.0	
74-82-8	Methane	24	2.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Collected: 8/ 6/14 1300  
Date Received: 8/ 7/14  
Date Analyzed: 8/8/14 13:06

Sample Name: AP33-DO (35')  
Lab Code: R1406092-011  
Run Type: Dilution

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1019.run

Analysis Lot: 405651  
Instrument Name: R-GC-02  
Dilution Factor: 10

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	11 D	10	
74-85-1	Ethene	850 D	10	
74-82-8	Methane	24 D	10	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water  
Sample Name: AP25-DO (44')  
Lab Code: R1406092-012

Service Request: R1406092  
Date Collected: 8/6/14 1330  
Date Received: 8/7/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	4.4	mg/L	1.0	1	NA	8/14/14 02:26	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 1330  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/15/14 03:41

Sample Name: AP25-DO (44')  
 Lab Code: R1406092-012

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081414\M8214.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 20

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	110		40	
79-34-5	1,1,2,2-Tetrachloroethane	40	U	40	
79-00-5	1,1,2-Trichloroethane	40	U	40	
75-34-3	1,1-Dichloroethane (1,1-DCA)	40	U	40	
75-35-4	1,1-Dichloroethene (1,1-DCE)	50		40	
107-06-2	1,2-Dichloroethane	40	U	40	
78-87-5	1,2-Dichloropropane	40	U	40	
67-64-1	Acetone	200	U	200	
75-27-4	Bromodichloromethane	40	U	40	
75-25-2	Bromoform	40	U	40	
74-83-9	Bromomethane	40	U	40	
56-23-5	Carbon Tetrachloride	40	U	40	
108-90-7	Chlorobenzene	40	U	40	
75-00-3	Chloroethane	40	U	40	
67-66-3	Chloroform	40	U	40	
74-87-3	Chloromethane	40	U	40	
124-48-1	Dibromochloromethane	40	U	40	
75-09-2	Methylene Chloride	40	U	40	
127-18-4	Tetrachloroethene (PCE)	40	U	40	
79-01-6	Trichloroethene (TCE)	40	U	40	
75-69-4	Trichlorofluoromethane (CFC 11)	40	U	40	
75-01-4	Vinyl Chloride	3400		40	
156-59-2	cis-1,2-Dichloroethene	11000	E	40	
10061-01-5	cis-1,3-Dichloropropene	40	U	40	
156-60-5	trans-1,2-Dichloroethene	40	U	40	
10061-02-6	trans-1,3-Dichloropropene	40	U	40	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	70-130	8/15/14 03:41	
Dibromofluoromethane	111	70-130	8/15/14 03:41	
Toluene-d8	101	70-130	8/15/14 03:41	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/6/14 1330  
 Date Received: 8/7/14  
 Date Analyzed: 8/15/14 19:51

Sample Name: AP25-DO (44')  
 Lab Code: R1406092-012  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081514\M8244.D\

Analysis Lot: 406845  
 Instrument Name: R-MS-12  
 Dilution Factor: 100

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	200	U	200	
79-34-5	1,1,2,2-Tetrachloroethane	200	U	200	
79-00-5	1,1,2-Trichloroethane	200	U	200	
75-34-3	1,1-Dichloroethane (1,1-DCA)	200	U	200	
75-35-4	1,1-Dichloroethene (1,1-DCE)	200	U	200	
107-06-2	1,2-Dichloroethane	200	U	200	
78-87-5	1,2-Dichloropropane	200	U	200	
67-64-1	Acetone	1000	U	1000	
75-27-4	Bromodichloromethane	200	U	200	
75-25-2	Bromoform	200	U	200	
74-83-9	Bromomethane	200	U	200	
56-23-5	Carbon Tetrachloride	200	U	200	
108-90-7	Chlorobenzene	200	U	200	
75-00-3	Chloroethane	200	U	200	
67-66-3	Chloroform	200	U	200	
74-87-3	Chloromethane	200	U	200	
124-48-1	Dibromochloromethane	200	U	200	
75-09-2	Methylene Chloride	200	U	200	
127-18-4	Tetrachloroethene (PCE)	200	U	200	
79-01-6	Trichloroethene (TCE)	200	U	200	
75-69-4	Trichlorofluoromethane (CFC 11)	200	U	200	
75-01-4	Vinyl Chloride	3300	D	200	
156-59-2	cis-1,2-Dichloroethene	11000	D	200	
10061-01-5	cis-1,3-Dichloropropene	200	U	200	
156-60-5	trans-1,2-Dichloroethene	200	U	200	
10061-02-6	trans-1,3-Dichloropropene	200	U	200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	8/15/14 19:51	
Dibromofluoromethane	110	70-130	8/15/14 19:51	
Toluene-d8	102	70-130	8/15/14 19:51	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Collected: 8/ 6/14 1330  
Date Received: 8/ 7/14  
Date Analyzed: 8/8/14 12:46

Sample Name: AP25-DO (44')  
Lab Code: R1406092-012

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1017.run

Analysis Lot: 405651  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	1.0 U	1.0	
74-85-1	Ethene	1.0 U	1.0	
74-82-8	Methane	1.0 U	1.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: OB9-S (18')  
 Lab Code: R1406092-013

Service Request: R1406092  
 Date Collected: 8/ 6/14 1400  
 Date Received: 8/ 7/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	29.8		mg/L	4.0	4	NA	8/14/14 02:47	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/ 6/14 1400  
 Date Received: 8/ 7/14  
 Date Analyzed: 8/15/14 02:36

Sample Name: OB9-S (18')  
 Lab Code: R1406092-013

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUADATA\msvoa12\Data\081414\M8212.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4.3		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.3		2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	110		2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	140		2.0	
156-59-2	cis-1,2-Dichloroethene	410	E	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	70-130	8/15/14 02:36	
Dibromofluoromethane	111	70-130	8/15/14 02:36	
Toluene-d8	102	70-130	8/15/14 02:36	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/6/14 1400  
 Date Received: 8/7/14  
 Date Analyzed: 8/15/14 18:14

Sample Name: OB9-S (18')  
 Lab Code: R1406092-013  
 Run Type: Dilution

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081514\M8241.D\

Analysis Lot: 406845  
 Instrument Name: R-MS-12  
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10	U	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10	U	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
67-64-1	Acetone	50	U	50	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	99	D	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
127-18-4	Tetrachloroethene (PCE)	10	U	10	
79-01-6	Trichloroethene (TCE)	10	U	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	120	D	10	
156-59-2	cis-1,2-Dichloroethene	370	D	10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	70-130	8/15/14 18:14	
Dibromofluoromethane	112	70-130	8/15/14 18:14	
Toluene-d8	104	70-130	8/15/14 18:14	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Collected: 8/ 6/14 1400  
Date Received: 8/ 7/14  
Date Analyzed: 8/8/14 13:17

Sample Name: OB9-S (18')  
Lab Code: R1406092-013

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1020.run

Analysis Lot: 405651  
Instrument Name: R-GC-02  
Dilution Factor: 250

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	250 U	250	
74-85-1	Ethene	250 U	250	
74-82-8	Methane	14000	250	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/6/14 0735  
 Date Received: 8/7/14  
 Date Analyzed: 8/15/14 02:04

Sample Name: EB-1  
 Lab Code: R1406092-014

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081414\M8211.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	26		10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	8/15/14 02:04	
Dibromofluoromethane	109	70-130	8/15/14 02:04	
Toluene-d8	99	70-130	8/15/14 02:04	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: 8/6/14 1145  
 Date Received: 8/7/14  
 Date Analyzed: 8/15/14 01:31

Sample Name: TB-1  
 Lab Code: R1406092-015

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081414\M8210.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	98	70-130	8/15/14 01:31	
Dibromofluoromethane	112	70-130	8/15/14 01:31	
Toluene-d8	87	70-130	8/15/14 01:31	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: Method Blank  
 Lab Code: R1406092-MB1

Service Request: R1406092  
 Date Collected: NA  
 Date Received: NA  
 Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	1.0 U	mg/L	1.0	1	NA	8/13/14 11:59	
Nitrate as Nitrogen	300.0	0.10 U	mg/L	0.10	1	NA	8/7/14 16:23	
Sulfate	300.0	0.20 U	mg/L	0.20	1	NA	8/7/14 16:23	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: Method Blank  
 Lab Code: R1406092-MB2

Service Request: R1406092  
 Date Collected: NA  
 Date Received: NA  
 Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201)	1.0 U	mg/L	1.0	1	NA	8/13/14 23:39	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water  
Sample Name: Method Blank  
Lab Code: R1406092-MB3

Service Request: R1406092  
Date Collected: NA  
Date Received: NA

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	1.0 U	mg/L	1.0	1	NA	8/14/14 15:17	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: Method Blank  
 Lab Code: R1406092-MB

Service Request: R1406092  
 Date Collected: NA  
 Date Received: NA  
 Basis: NA

Inorganic Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100 U	µg/L	100	1	8/11/14	8/12/14 19:46	
Manganese, Dissolved	6010C	10 U	µg/L	10	1	8/11/14	8/12/14 19:46	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 8/15/14 00:59

Sample Name: Method Blank  
 Lab Code: RQ1409589-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081414\M8209.D\

Analysis Lot: 406690  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0 U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0 U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0 U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0 U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0 U	2.0	
107-06-2	1,2-Dichloroethane	2.0 U	2.0	
78-87-5	1,2-Dichloropropane	2.0 U	2.0	
67-64-1	Acetone	10 U	10	
75-27-4	Bromodichloromethane	2.0 U	2.0	
75-25-2	Bromoform	2.0 U	2.0	
74-83-9	Bromomethane	2.0 U	2.0	
56-23-5	Carbon Tetrachloride	2.0 U	2.0	
108-90-7	Chlorobenzene	2.0 U	2.0	
75-00-3	Chloroethane	2.0 U	2.0	
67-66-3	Chloroform	2.0 U	2.0	
74-87-3	Chloromethane	2.0 U	2.0	
124-48-1	Dibromochloromethane	2.0 U	2.0	
75-09-2	Methylene Chloride	2.0 U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0 U	2.0	
79-01-6	Trichloroethene (TCE)	2.0 U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0 U	2.0	
75-01-4	Vinyl Chloride	2.0 U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0 U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0 U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0 U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0 U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	8/15/14 00:59	
Dibromofluoromethane	108	70-130	8/15/14 00:59	
Toluene-d8	101	70-130	8/15/14 00:59	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 8/15/14 12:51

Sample Name: Method Blank  
 Lab Code: RQ1409619-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081514\M8231.D\

Analysis Lot: 406845  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	8/15/14 12:51	
Dibromofluoromethane	108	70-130	8/15/14 12:51	
Toluene-d8	102	70-130	8/15/14 12:51	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 8/18/14 13:04

Sample Name: Method Blank  
 Lab Code: RQ1409718-01

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\081814\M8258.D

Analysis Lot: 407142  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	100	70-130	8/18/14 13:04	
Dibromofluoromethane	108	70-130	8/18/14 13:04	
Toluene-d8	101	70-130	8/18/14 13:04	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Collected: NA  
Date Received: NA  
Date Analyzed: 8/8/14 09:58

Sample Name: Method Blank  
Lab Code: RQ1409264-01

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1002.run

Analysis Lot: 405651  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	1.0 U	1.0	
74-85-1	Ethene	1.0 U	1.0	
74-82-8	Methane	1.0 U	1.0	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Analyzed: 8/ 7/14 -  
 8/13/14

Lab Control Sample Summary  
 General Chemistry Parameters

Units: mg/L  
 Basis: NA

Analyte Name	Method	Lab Control Sample R1406092-LCS1			% Rec Limits
		Result	Spike Amount	% Rec	
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	10.9	10.0	108	76 - 123
Nitrate as Nitrogen	300.0	0.931	1.00	93	90 - 110
Sulfate	300.0	1.87	2.00	93	90 - 110

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406092  
Date Analyzed: 8/14/14

Lab Control Sample Summary  
General Chemistry Parameters

Units: mg/L  
Basis: NA

Analyte Name	Method	Lab Control Sample R1406092-LCS2			% Rec Limits
		Result	Spike Amount	% Rec	
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	11.1	10.0	111	76 - 123

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Analyzed: 8/14/14

Lab Control Sample Summary  
 General Chemistry Parameters

Units: mg/L  
 Basis: NA

Lab Control Sample  
 R1406092-LCS3

Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	10.8	10.0	108	76 - 123

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Analyzed: 8/12/14

Lab Control Sample Summary  
 Inorganic Parameters

Units: µg/L  
 Basis: NA

Lab Control Sample  
 R1406092-LCS

Analyte Name	Method	Result	Spike		% Rec Limits
			Amount	% Rec	
Iron, Dissolved	6010C	994	1000	99	80 - 120
Manganese, Dissolved	6010C	519	500	104	80 - 120

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Analyzed: 8/14/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 406690

Analyte Name	Lab Control Sample RQ1409589-03			Duplicate Lab Control Sample RQ1409589-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	24.1	20.0	120	23.9	20.0	119	70 - 130	1	20
1,1,2,2-Tetrachloroethane	21.0	20.0	105	19.8	20.0	99	70 - 130	6	20
1,1,2-Trichloroethane	20.8	20.0	104	20.7	20.0	104	70 - 130	<1	20
1,1-Dichloroethane (1,1-DCA)	21.7	20.0	109	21.9	20.0	110	70 - 130	<1	20
1,1-Dichloroethene (1,1-DCE)	21.7	20.0	109	21.8	20.0	109	70 - 130	<1	20
1,2-Dichloroethane	26.9	20.0	135 *	26.8	20.0	134 *	70 - 130	<1	20
1,2-Dichloropropane	22.5	20.0	112	22.3	20.0	112	70 - 130	<1	20
Acetone	28.1	20.0	140	32.0	20.0	160	40 - 160	13	20
Bromodichloromethane	24.0	20.0	120	23.6	20.0	118	70 - 130	2	20
Bromoform	21.3	20.0	106	20.0	20.0	100	70 - 130	6	20
Bromomethane	20.8	20.0	104	19.1	20.0	96	40 - 160	8	20
Carbon Tetrachloride	24.0	20.0	120	24.3	20.0	121	70 - 130	<1	20
Chlorobenzene	20.9	20.0	105	20.6	20.0	103	70 - 130	2	20
Chloroethane	17.6	20.0	88	17.5	20.0	87	70 - 130	<1	20
Chloroform	23.6	20.0	118	23.4	20.0	117	70 - 130	1	20
Chloromethane	19.7	20.0	99	19.4	20.0	97	40 - 160	1	20
Dibromochloromethane	22.0	20.0	110	23.0	20.0	115	70 - 130	5	20
Methylene Chloride	19.4	20.0	97	19.0	20.0	95	70 - 130	2	20
Tetrachloroethene (PCE)	21.7	20.0	108	22.1	20.0	110	70 - 130	2	20
Trichloroethene (TCE)	21.4	20.0	107	21.1	20.0	106	70 - 130	1	20
Trichlorofluoromethane (CFC 11)	24.7	20.0	123	24.7	20.0	123	70 - 130	<1	20
Vinyl Chloride	18.1	20.0	91	18.1	20.0	91	70 - 130	<1	20
cis-1,2-Dichloroethene	19.6	20.0	98	19.6	20.0	98	70 - 130	<1	20
cis-1,3-Dichloropropene	21.3	20.0	106	21.1	20.0	105	70 - 130	1	20
trans-1,2-Dichloroethene	20.1	20.0	101	20.1	20.0	100	70 - 130	<1	20
trans-1,3-Dichloropropene	22.6	20.0	113	21.9	20.0	109	70 - 130	3	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Analyzed: 8/15/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 406845

Analyte Name	Lab Control Sample RQ1409619-03			Duplicate Lab Control Sample RQ1409619-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	20.8	20.0	104	24.3	20.0	121	70 - 130	15	20
1,1,2,2-Tetrachloroethane	19.2	20.0	96	20.7	20.0	104	70 - 130	7	20
1,1,2-Trichloroethane	19.2	20.0	96	20.6	20.0	103	70 - 130	7	20
1,1-Dichloroethane (1,1-DCA)	19.5	20.0	97	21.9	20.0	109	70 - 130	12	20
1,1-Dichloroethene (1,1-DCE)	19.0	20.0	95	21.5	20.0	108	70 - 130	13	20
1,2-Dichloroethane	24.2	20.0	121	27.3	20.0	137 *	70 - 130	12	20
1,2-Dichloropropane	19.7	20.0	98	23.1	20.0	116	70 - 130	16	20
Acetone	27.7	20.0	139	29.2	20.0	146	40 - 160	5	20
Bromodichloromethane	21.6	20.0	108	23.9	20.0	120	70 - 130	10	20
Bromoform	17.9	20.0	90	19.6	20.0	98	70 - 130	9	20
Bromomethane	17.1	20.0	85	18.5	20.0	92	40 - 160	8	20
Carbon Tetrachloride	21.2	20.0	106	25.5	20.0	127	70 - 130	19	20
Chlorobenzene	18.6	20.0	93	20.8	20.0	104	70 - 130	11	20
Chloroethane	15.5	20.0	78	17.4	20.0	87	70 - 130	12	20
Chloroform	20.5	20.0	102	23.0	20.0	115	70 - 130	12	20
Chloromethane	17.4	20.0	87	19.9	20.0	99	40 - 160	13	20
Dibromochloromethane	20.4	20.0	102	22.2	20.0	111	70 - 130	8	20
Methylene Chloride	17.0	20.0	85	18.9	20.0	94	70 - 130	10	20
Tetrachloroethene (PCE)	18.7	20.0	93	22.4	20.0	112	70 - 130	18	20
Trichloroethene (TCE)	18.2	20.0	91	20.9	20.0	105	70 - 130	14	20
Trichlorofluoromethane (CFC 11)	21.9	20.0	110	25.0	20.0	125	70 - 130	13	20
Vinyl Chloride	15.9	20.0	79	18.2	20.0	91	70 - 130	14	20
cis-1,2-Dichloroethene	17.2	20.0	86	19.7	20.0	98	70 - 130	13	20
cis-1,3-Dichloropropene	19.3	20.0	96	21.9	20.0	109	70 - 130	12	20
trans-1,2-Dichloroethene	17.4	20.0	87	19.9	20.0	100	70 - 130	14	20
trans-1,3-Dichloropropene	20.5	20.0	102	23.4	20.0	117	70 - 130	13	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Analyzed: 8/18/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 407142

Analyte Name	Lab Control Sample RQ1409718-02			Duplicate Lab Control Sample RQ1409718-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	20.9	20.0	104	20.7	20.0	103	70 - 130	1	20
1,1,2,2-Tetrachloroethane	20.8	20.0	104	20.6	20.0	103	70 - 130	<1	20
1,1,2-Trichloroethane	21.4	20.0	107	20.9	20.0	105	70 - 130	2	20
1,1-Dichloroethane (1,1-DCA)	20.0	20.0	100	19.5	20.0	98	70 - 130	2	20
1,1-Dichloroethene (1,1-DCE)	18.9	20.0	95	18.8	20.0	94	70 - 130	<1	20
1,2-Dichloroethane	26.0	20.0	130	25.3	20.0	126	70 - 130	3	20
1,2-Dichloropropane	21.0	20.0	105	20.8	20.0	104	70 - 130	1	20
Acetone	22.5	20.0	112	23.5	20.0	117	40 - 160	4	20
Bromodichloromethane	23.1	20.0	116	22.4	20.0	112	70 - 130	3	20
Bromoform	22.3	20.0	111	21.4	20.0	107	70 - 130	4	20
Bromomethane	15.6	20.0	78	16.4	20.0	82	40 - 160	5	20
Carbon Tetrachloride	22.0	20.0	110	22.1	20.0	110	70 - 130	<1	20
Chlorobenzene	20.0	20.0	100	19.0	20.0	95	70 - 130	5	20
Chloroethane	15.0	20.0	75	15.2	20.0	76	70 - 130	1	20
Chloroform	21.1	20.0	105	20.3	20.0	102	70 - 130	4	20
Chloromethane	16.7	20.0	84	16.9	20.0	85	40 - 160	1	20
Dibromochloromethane	23.4	20.0	117	22.8	20.0	114	70 - 130	3	20
Methylene Chloride	18.1	20.0	90	17.5	20.0	88	70 - 130	3	20
Tetrachloroethene (PCE)	20.2	20.0	101	20.6	20.0	103	70 - 130	2	20
Trichloroethene (TCE)	18.8	20.0	94	19.1	20.0	96	70 - 130	2	20
Trichlorofluoromethane (CFC 11)	20.7	20.0	104	21.2	20.0	106	70 - 130	2	20
Vinyl Chloride	15.4	20.0	77	15.8	20.0	79	70 - 130	2	20
cis-1,2-Dichloroethene	17.8	20.0	89	17.8	20.0	89	70 - 130	<1	20
cis-1,3-Dichloropropene	20.8	20.0	104	20.8	20.0	104	70 - 130	<1	20
trans-1,2-Dichloroethene	17.7	20.0	88	18.0	20.0	90	70 - 130	2	20
trans-1,3-Dichloropropene	22.4	20.0	112	22.5	20.0	112	70 - 130	<1	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406092  
 Date Analyzed: 8/ 8/14

Lab Control Sample Summary  
 Dissolved Gases by GC/FID

Analytical Method: RSK 175

Units: µg/L  
 Basis: NA

Analysis Lot: 405651

Analyte Name	Lab Control Sample RQ1409264-02			Duplicate Lab Control Sample RQ1409264-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Ethane	26.3	26.1	101	27.8	26.1	107	75 - 118	6	30
Ethene	26.9	24.3	110	28.4	24.3	117	73 - 129	6	30
Methane	24.8	26.2	95	26.6	26.2	101	65 - 126	7	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Project Name <b>Varian Beverly</b>		Project Number <b>150151-03000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																			
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE																			
Company/Address <b>CB&amp;I Environmental, Inc.</b>				NUMBER OF CONTAINERS	GC/MS VOA's <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> Site Specific <input type="checkbox"/> OCLP <input type="checkbox"/> L15+ GC/MS SVOA's <input type="checkbox"/> 8270 <input type="checkbox"/> 825 GC VOA's <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602 PESTICIDES <input type="checkbox"/> 8081 <input type="checkbox"/> 608 PCB's <input type="checkbox"/> 8082 <input type="checkbox"/> 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) Methane Ethane Mn Ethene Ethane TOC Nitrate/Sulfate																		
150 Royall Street					2 1 3 0 Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____																		
Canton, MA 02021					REMARKS/ ALTERNATE DESCRIPTION																		
Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@CBI.com</b>																					
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name <b>O. Daisley</b>																					
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE TIME		MATRIX																			
<b>OB25-DO(65')</b>		<b>8/6/14</b>	<b>845</b>	<b>GW</b>	<b>3</b>	<b>X</b>																	
<b>AP30R-DO(40')</b>			<b>820</b>		<b>3</b>	<b>X</b>																	
<b>MW-9 (19')</b>			<b>930</b>		<b>7</b>	<b>X</b>								<b>X</b>	<b>X</b>								
<b>OB15-5 (17')</b>			<b>960</b>		<b>7</b>	<b>X</b>								<b>X</b>	<b>X</b>								
<b>AP10-1 (36')</b>			<b>1000</b>		<b>7</b>	<b>X</b>								<b>X</b>	<b>X</b>								
<b>AP23-DO (46')</b>			<b>1030</b>		<b>9</b>	<b>X</b>								<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>						
<b>AP35-DO (33')</b>			<b>1100</b>		<b>9</b>	<b>X</b>								<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>						
<b>AP34-DO (33')</b>			<b>1130</b>		<b>9</b>	<b>X</b>								<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>						
<b>AP15-DO (44')</b>			<b>1200</b>		<b>9</b>	<b>X</b>								<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>						
<b>AP24-DO (46')</b>			<b>1200</b>		<b>9</b>	<b>X</b>								<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>						
SPECIAL INSTRUCTIONS/COMMENTS Metals = Field Filtered Site specific VOC list. Massachusetts CAM analyses reporting and QA/QC. Please email GISKey formatted EDD & PDF of report to: Catherine.Joe@CBI.com.				TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day 2 day 3 day 4 day 5 day <input checked="" type="checkbox"/> Standard				REPORT REQUIREMENTS I. Results Only II. Results + OC Summaries (LCS, DUP, MS/MSD as required) III. Results + OC and Calibration Summaries IV. Data Validation Report with Raw Data				INVOICE INFORMATION PO #: 873489 BILL TO: CB&I											
See OAPP <input type="checkbox"/>				REQUESTED REPORT DATE				Edata Yes No				<b>R1406092 7 Y</b> CB&I Environmental & Infrastructure Varian Beverly											
STATE WHERE SAMPLES WERE COLLECTED:																							
RELINQUISHED BY						RECEIVED BY						RELINQUISHED BY						RECEIVED BY					
<i>[Signature]</i>						<b>UPS</b>						<i>[Signature]</i>						<i>[Signature]</i>					
Signature <b>D. Daisley</b>						Signature						Signature						Signature					
Printed Name <b>CBI</b>						Printed Name <b>UPS</b>						Printed Name <b>J. S. [Signature]</b>						Printed Name					
Firm <b>8/6/14 1600</b>						Firm <b>8/6/14 1600</b>						Firm <b>UPS</b>						Firm					
Date/Time						Date/Time						Date/Time <b>8/7/14 0935</b>						Date/Time					

Project Name <b>Varian Beverly</b>		Project Number <b>150151-03000000</b>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																																			
Project Manager <b>Raymond Cadorette</b>		Report CC		PRESERVATIVE																																			
Company/Address <b>CB&amp;I Environmental, Inc.</b>				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">GC/MS VOA's Site Specific # 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLIP List</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">GC/MS SVOA's # 8220 <input type="checkbox"/> 825</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">GC VOA's # 8021 <input type="checkbox"/> 601/602</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PESTICIDES # 8081 <input type="checkbox"/> 808</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PCB's # 8082 <input type="checkbox"/> 608</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">METALS, TOTAL (List in comments below)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">METALS, DISSOLVED (List in comments below)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Methanol, Ethanol &amp; Ethane</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TOC</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Nitrate / Sulfate</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);"></td> </tr> </table>												NUMBER OF CONTAINERS	GC/MS VOA's Site Specific # 8260 <input type="checkbox"/> 824 <input type="checkbox"/> CLIP List	GC/MS SVOA's # 8220 <input type="checkbox"/> 825	GC VOA's # 8021 <input type="checkbox"/> 601/602	PESTICIDES # 8081 <input type="checkbox"/> 808	PCB's # 8082 <input type="checkbox"/> 608	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	Methanol, Ethanol & Ethane	TOC	Nitrate / Sulfate													
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Phone # <b>617-589-6102</b>		E-mail <b>Raymond.Cadorette@CBI.com</b>																																					
Sampler's Signature 		Sampler's Printed Name <b>o. Daily</b>																																					
CLIENT SAMPLE ID		FOR OFFICE USE ONLY LAB ID		SAMPLING DATE TIME		MATRIX																																	
<b>AP13-00 (49')</b>				<b>8/6/14 1230</b>		<b>GW</b>																																	
<b>AP33-00 (49')</b>				<b>1300</b>																																			
<b>AP25-00 (44')</b>				<b>1330</b>																																			
<b>OB9-5 (18')</b>				<b>1410</b>																																			
<b>EB-1</b>				<b>0735</b>																																			
<b>TB-1</b>				<b>11:45</b>																																			
				<b>7/25/14</b>																																			
SPECIAL INSTRUCTIONS/COMMENTS <b>Metals = Field Filtered</b> <b>Site specific VOC list.</b> <b>Massachusetts CAM analyses reporting and QA/QC.</b> <b>Please email GISKey formatted EDD &amp; PDF of report to:</b> <b>Catherine.Joe@CBI.com.</b>								TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day 2 day 3 day 4 day 5 day <input checked="" type="checkbox"/> Standard				REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data				INVOICE INFORMATION PO #: <b>873489</b> BILL TO: <b>CB&amp;I</b>																							
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RELINQUISHED BY						RECEIVED BY						RELINQUISHED BY						RECEIVED BY																					
						<b>LARS</b>																																	
Signature						Signature						Signature						Signature																					
<b>O. Daily</b>												<b>Seward</b>																											
Printed Name						Printed Name						Printed Name						Printed Name																					
<b>CBI</b>												<b>ALS</b>																											
Firm						Firm						Firm						Firm																					
<b>8/6/14 1600</b>						<b>8/6/14 1600</b>						<b>8/7/14 0935</b>																											
Date/Time						Date/Time						Date/Time						Date/Time																					



# Cooler Receipt and Preservation Check Form

Project/Client CBI I Folder Number 14-6092

Cooler received on 8/7/14 by: JLS

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<input checked="" type="radio"/> Y	<input type="radio"/> N
2	Custody papers properly completed (ink, signed)?	<input checked="" type="radio"/> Y	<input type="radio"/> N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="radio"/> Y	<input type="radio"/> N
4	Circle: <del>Wet Ice</del> Dry Ice Gel packs present?	<input checked="" type="radio"/> Y	<input type="radio"/> N

5a	Perchlorate samples have required headspace?	Y	<input checked="" type="radio"/> N	<input checked="" type="radio"/> N/A
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y	<input checked="" type="radio"/> N	<input type="radio"/> NA
6	Where did the bottles originate?	<u>ALS/ROD</u> CLIENT		
7	Soil VOA received as:	Bulk	Encore	5035set <input checked="" type="radio"/> N/A

8. Temperature Readings Date: 8/7/14 Time: 0153 ID: IR#3 IR#4 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>2.6</u>	<u>2.5</u>	<u>4.0</u>					
Correction Factor (°C)	<u>-0.2</u>	<u>+0.1</u>	<u>-</u>					
Corrected Temp (°C)	<u>2.4</u>	<u>2.6</u>	<u>4.0</u>					
Within 0-6°C?	<input checked="" type="radio"/> Y	<input checked="" type="radio"/> N	<input checked="" type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> Y	<input type="radio"/> N

If out of Temperature, note packing/ice condition: Ice melted Poorly Packed Same Day Rule  
& Client Approval to Run Samples: Standing Approval Client aware at drop-off Client notified by:                     

All samples held in storage location:                      by JLS on 8/7 at 0953  
5035 samples placed in storage location:                      by                      on                      at                     

PC Secondary Review: JMW 8/7/14

Cooler Breakdown: Date: 8/7/14 Time: 1238 by: JLS

- Were all bottle labels complete (i.e. analysis, preservation, etc.)?  YES  NO
- Did all bottle labels and tags agree with custody papers?  YES  NO
- Were correct containers used for the tests indicated?  YES  NO
- Air Samples: Cassettes / Tubes Intact  Canisters Pressurized  Tedlar® Bags Inflated  N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	
≥12	NaOH									Yes=All samples OK
≤2	HNO <sub>3</sub>	<input checked="" type="checkbox"/>		<u>B005M136B</u>	<u>5/15</u>					No=Samples were preserved at
≤2	H <sub>2</sub> SO <sub>4</sub>	<input checked="" type="checkbox"/>		<u>WCA230250E</u>	<u>5/15</u>					The lab as listed
<4	NaHSO <sub>3</sub>									
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CN), ascorbic (phenol).						
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-							PM OK to Adjust:
	ZnAcetate	-	-							
	HCl	**	**	<u>4113570</u>	<u>6/15</u>					**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: 4-0586-003, 112612-2N, 051214-18MC,  
Other Comments:                     

PC Secondary Review: JMW 8/11/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 152728.05  
**Prepared By:** Dale Dailey **Date :** 9/12/2014  
**Matrix:** Groundwater  
**Analyte Group :** Hydrocarbon Gases **Analytical Method :** RSK-175  
                           Total Organic Carbon SM20 5310C  
                           Metals Method 6010C  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** R1406359  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
8/14/14	RSK-175	7 Days	7 Days	8/15, 8/23/14
8/14/14	6010C	14 Days	180 Days	8/19, 8/21/14
8/14/14	SM20 5310C	28 Days	28 Days	8/27/2014

**Sample temperature within QC limits:** Yes, 1.7 C

**Surrogate Recovery**

Are all % recoveries within the allowable range ? NA

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? Yes

If no, list sample ID where range was exceeded: NA

**Equipment Field Blank ID :** NA  
**Trip Blank ID :** NA

**Method Blank:** SM20 5310C 8/27, 8/15, 8/23/14  
                           RSK 175 8/22/2014  
                           6010C 8/19, 8/22/14

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

**If so, list Sample ID/Compound/Concentration/Units:** NA

**Notes:**

(1) All samples were received in good condition, and LCS and LCSDs within QC limits.

**Reviewed By:** Pernilla Haley 10/15/14





September 03, 2014

Service Request No: R1406359

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly/150151**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on August 15, 2014. For your reference, these analyses have been assigned our service request number **R1406359**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**

Janice Jaeger  
Client Services Manager

Page 1 of 19

CC: Pernilla Haley

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1406359

Lab ID  
R1406359-001

Client ID  
AP13-DO(49)

All samples were received in good condition unless otherwise noted on the cooler receipt and preservation check form located at the end of this report.

All samples were preserved in accordance with approved analytical methods.

All samples have been analyzed by the approved methods cited on the analytical results pages.

All holding times and associated QC were within limits.

No analytical or QC problems were encountered.

All sampling activities performed by ALS personnel have been in accordance with "ALS Field Procedures and Measurements Manual" or by client specifications.

00002

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 150151

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1406359-001

 Matrices: Groundwater/Surface Water    Soil/Sediment     Drinking Water    Air    Other:

**CAM Protocol (check all that apply below):**

8260 VOC CAM II A	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X	Yes	No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X	Yes	No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X	Yes	No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X	Yes	No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes	No	No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X	Yes	No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X	Yes	No <sup>1</sup>
----------	---	---	-----	-----------------

**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X	Yes	No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	X	Yes	No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:

 Position: Client Services  
 Manager

 Printed Name: Janice Jaeger

 Date: 09/05/14      **00003**

## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of* NON POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

*Jacques P. Parcabe*

*Director, Division of Environmental Analysis*

*Issued:* 01 JUL 2014

*Expires:* 30 JUN 2015

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2014

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY) Effective Date 01 JUL 2014 Expiration Date 30 JUN 2015

Analytes

ALUMINUM  
ANTIMONY  
ANTIMONY  
ARSENIC  
ARSENIC  
BERYLLIUM  
BERYLLIUM  
CADMIUM  
CADMIUM  
CHROMIUM  
CHROMIUM  
COBALT  
COBALT  
COPPER  
COPPER  
IRON  
LEAD  
LEAD  
MANGANESE  
MANGANESE  
MERCURY  
MOLYBDENUM  
MOLYBDENUM  
NICKEL  
NICKEL  
SELENIUM  
SELENIUM  
SILVER  
SILVER  
THALLIUM  
THALLIUM  
VANADIUM  
VANADIUM  
ZINC  
ZINC  
SPECIFIC CONDUCTIVITY  
TOTAL DISSOLVED SOLIDS  
HARDNESS (CaCO<sub>3</sub>), TOTAL  
CALCIUM  
MAGNESIUM  
SODIUM  
POTASSIUM  
ALKALINITY, TOTAL

Methods

EPA 200.7  
EPA 200.7  
EPA 200.8  
EPA 200.7  
EPA 200.8  
EPA 200.7  
EPA 200.8  
EPA 200.7  
EPA 200.8  
EPA 200.7  
EPA 200.8  
EPA 200.7  
EPA 200.8  
EPA 200.7  
EPA 200.8  
EPA 245.1  
EPA 200.7  
EPA 200.8  
EPA 200.7  
EPA 200.8  
EPA 200.7  
EPA 200.8  
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EPA 200.8  
EPA 200.7  
EPA 200.8  
EPA 200.7  
EPA 200.8  
EPA 200.7  
SM 2540C  
SM 2340C  
EPA 200.7  
EPA 200.7  
EPA 200.7  
EPA 200.7  
SM 2320B

June 26, 2014

\*= Provisional Certification

Page 1 of 2

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COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2014

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY) Effective Date 01 JUL 2014 Expiration Date 30 JUN 2015

Analytes

CHLORIDE  
CHLORIDE  
FLUORIDE  
SULFATE  
AMMONIA-N  
NITRATE-N  
NITRATE-N  
KJELDAHL-N  
ORTHOPHOSPHATE  
PHOSPHORUS, TOTAL  
CHEMICAL OXYGEN DEMAND  
BIOCHEMICAL OXYGEN DEMAND  
TOTAL ORGANIC CARBON  
CYANIDE, TOTAL  
NON-FILTERABLE RESIDUE  
OIL AND GREASE  
PHENOLICS, TOTAL  
VOLATILE HALOCARBONS  
VOLATILE HALOCARBONS  
VOLATILE AROMATICS  
VOLATILE AROMATICS  
SVOC-ACID EXTRACTABLES  
SVOC-BASE/NEUTRAL EXTRACTABLES  
POLYCHLORINATED BIPHENYLS (WATER)

Methods

SM 4500-CL-E  
EPA 300.0  
EPA 300.0  
EPA 300.0  
EPA 350.1  
EPA 300.0  
EPA 353.2  
EPA 351.2  
EPA 365.1  
EPA 365.1  
EPA 410.4  
SM 5210B  
SM 5310C  
EPA 335.4  
SM 2540D  
EPA 1664  
EPA 420.4  
EPA 601  
EPA 624  
EPA 602  
EPA 624  
EPA 625  
EPA 625  
EPA 608



## INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

### Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	3010A
200.8	ILM05.3
6010C	3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

### Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3010A
6010 SPLP (1312) extract	3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

RIGHT SOLUTIONS | RIGHT PARTNER



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water  
 Sample Name: AP13-DO(49)  
 Lab Code: R1406359-001

Service Request: R1406359  
 Date Collected: 8/14/14 1200  
 Date Received: 8/15/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	616	mg/L	40	40	NA	8/27/14 06:10	
Nitrate as Nitrogen	300.0	1.0 U	mg/L	1.0	10	NA	8/15/14 21:04	
Sulfate	300.0	319	mg/L	8.0	40	NA	8/23/14 07:05	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly/150151  
**Sample Matrix:** Water  
**Sample Name:** AP13-DO(49)  
**Lab Code:** R1406359-001

**Service Request:** R1406359  
**Date Collected:** 8/14/14 1200  
**Date Received:** 8/15/14

**Basis:** NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Iron, Dissolved	6010C	100	U	µg/L	100	1	8/18/14	8/19/14 15:45	
Manganese, Dissolved	6010C	25300		µg/L	100	10	8/18/14	8/21/14 15:32	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406359  
Date Collected: 8/14/14 1200  
Date Received: 8/15/14  
Date Analyzed: 8/22/14 08:59

Sample Name: AP13-DO(49)  
Lab Code: R1406359-001

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1005.run

Analysis Lot: 407937  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
74-84-0	Ethane	1.0	U	1.0	
74-85-1	Ethene	57		1.0	
74-82-8	Methane	2.3		1.0	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water  
Sample Name: Method Blank  
Lab Code: R1406359-MB

Service Request: R1406359  
Date Collected: NA  
Date Received: NA

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	1.0 U	mg/L	1.0	1	NA	8/27/14 00:57	
Nitrate as Nitrogen	300.0	0.10 U	mg/L	0.10	1	NA	8/15/14 15:29	
Sulfate	300.0	0.20 U	mg/L	0.20	1	NA	8/23/14 05:26	

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** CB&I  
**Project:** Varian Beverly/150151  
**Sample Matrix:** Water  
**Sample Name:** Method Blank  
**Lab Code:** R1406359-MB

**Service Request:** R1406359  
**Date Collected:** NA  
**Date Received:** NA

**Basis:** NA

**Inorganic Parameters**

<b>Analyte Name</b>	<b>Method</b>	<b>Result Q</b>	<b>Units</b>	<b>MRL</b>	<b>Dilution Factor</b>	<b>Date Extracted</b>	<b>Date Analyzed</b>	<b>Note</b>
Iron, Dissolved	6010C	100 U	µg/L	100	1	8/18/14	8/19/14 13:52	
Manganese, Dissolved	6010C	10 U	µg/L	10	1	8/18/14	8/21/14 15:20	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406359  
Date Collected: NA  
Date Received: NA  
Date Analyzed: 8/22/14 08:30

Sample Name: Method Blank  
Lab Code: RQ1409909-01

Units: µg/L  
Basis: NA

Dissolved Gases by GC/FID

Analytical Method: RSK 175  
Data File Name: 1002.run

Analysis Lot: 407937  
Instrument Name: R-GC-02  
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
74-84-0	Ethane	1.0 U	1.0	
74-85-1	Ethene	1.0 U	1.0	
74-82-8	Methane	1.0 U	1.0	

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406359  
 Date Analyzed: 8/15/14 -  
 8/27/14

Lab Control Sample Summary  
 General Chemistry Parameters

Units: mg/L  
 Basis: NA

Lab Control Sample  
 R1406359-LCS

Analyte Name	Method	Result	Spike		% Rec Limits
			Amount	% Rec	
Carbon, Total Organic (TOC)	SM 5310B/C-2000(201	11.4	10.0	114	76 - 123
Nitrate as Nitrogen	300.0	0.989	1.00	99	90 - 110
Sulfate	300.0	1.80	2.00	90	90 - 110

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
Project: Varian Beverly/150151  
Sample Matrix: Water

Service Request: R1406359  
Date Analyzed: 8/19/14 -  
8/21/14

Lab Control Sample Summary  
Inorganic Parameters

Units: µg/L  
Basis: NA

Lab Control Sample  
R1406359-LCS

Analyte Name	Method	Result	Spike Amount	% Rec	% Rec Limits
Iron, Dissolved	6010C	1010	1000	101	80 - 120
Manganese, Dissolved	6010C	483	500	97	80 - 120

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly/150151  
 Sample Matrix: Water

Service Request: R1406359  
 Date Analyzed: 8/22/14

Lab Control Sample Summary  
 Dissolved Gases by GC/FID

Analytical Method: RSK 175

Units: µg/L  
 Basis: NA

Analysis Lot: 407937

Analyte Name	Lab Control Sample RQ1409909-02			Duplicate Lab Control Sample RQ1409909-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Ethane	26.4	26.1	101	26.4	26.1	101	75 - 118	<1	30
Ethene	27.2	24.3	112	27.4	24.3	113	73 - 129	<1	30
Methane	25.0	26.2	96	24.5	26.2	94	65 - 126	2	30

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.





# Cooler Receipt and Preservation Check Form

Project/Client CB+I Folder Number R1406359

Cooler received on 8/15/14 by: R COURIER: ALS  UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<input checked="" type="radio"/> Y <input type="radio"/> N
2	Custody papers properly completed (ink, signed)?	<input checked="" type="radio"/> Y <input type="radio"/> N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="radio"/> Y <input type="radio"/> N
4	Circle: <input checked="" type="radio"/> Wet Ice <input type="radio"/> Dry Ice <input type="radio"/> Gel packs present?	<input checked="" type="radio"/> Y <input type="radio"/> N

5a	Perchlorate samples have required headspace?	Y N <input checked="" type="radio"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/> NA
6	Where did the bottles originate?	<u>ALS/ROE</u> CLIENT
7	Soil VOA received as:	Bulk Encore 5035set <input checked="" type="radio"/> NA

8. Temperature Readings Date: 8/15/14 Time: 0858 ID: IR#3 IR#4 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>1.7</u>						
Correction Factor (°C)	<u>-</u>						
Corrected Temp (°C)	<u>1.7</u>						
Within 0-6°C?	<input checked="" type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N	<input type="radio"/> Y <input type="radio"/> N

If out of Temperature, note packing/ice condition: \_\_\_\_\_ Ice melted Poorly Packed Same Day Rule  
& Client Approval to Run Samples: \_\_\_\_\_ Standing Approval Client aware at drop-off Client notified by: \_\_\_\_\_

All samples held in storage location: R002 by R on 8/15/14 at 0900  
5035 samples placed in storage location: \_\_\_\_\_ by \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_

PC Secondary Review: MMJ 8/15/14

Cooler Breakdown: Date: 8-15-14 Time: 15:40 by: RE

- Were all bottle labels complete (i.e. analysis, preservation, etc.)?  YES  NO
- Did all bottle labels and tags agree with custody papers?  YES  NO
- Were correct containers used for the tests indicated?  YES  NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated  N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes=All samples OK
≥12	NaOH									
≤2	HNO <sub>3</sub>	<input checked="" type="checkbox"/>		<u>BDB26136A</u>	<u>06/15</u>					No=Samples were preserved at
≤2	H <sub>2</sub> SO <sub>4</sub>	<input checked="" type="checkbox"/>		<u>wc126250E</u>	<u>06/15</u>					The lab as listed
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CN), ascorbic (phenol).						PM OK to Adjust:
1	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-							
	ZnAcetate	-	-							
	HCl	**	**	<u>4113070</u>	<u>06/15</u>					**Not to be tested before analysis - pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: 4-086-003, 06 0214-1BML, 071414-2AAD  
Other Comments:

*headspace - all vials*

PC Secondary Review: MMJ 8/19/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

## Data Usability Worksheet

**Project Name :** Varian Medical Systems, Inc **Job Number :** 152728.09  
**Prepared By:** Dale Dailey **Date :** 9/12/2014  
**Matrix:** Soil  
**Analyte Group :** Volatile Organics **Analytical Method :** SW-846 8260C  
                                   Total Solids Modified EPA 160.3  
**Completed MADEP CAM Certification Form included:** Yes **Laboratory ID No. :** 1406468  
**Chain of Custody included in Data Package ?** Yes **Is it Complete ?** Yes

Sample Collection Date	Analysis	Allowable Holding Time for extraction	Allowable Holding Time for analysis	Analysis Date
8/19/14	Modified EPA 160.3	14 days	14 Days	8/21, 8/25/14
8/19/14	VOC 8260C	14 days	30 Days	8/21/14

**Sample temperature within QC limits:** Yes, 3.9 C

**Surrogate Recovery**

Are all % recoveries within the allowable range ? Yes

If No, List sample ID where range was exceeded: NA

**MS/MSD**

Are all MS/MSD sample recoveries within the QC limits ? NA

If No, list sample ID, date and compound where limit was exceeded: NA

**Laboratory Control Samples**

Are all laboratory control sample recoveries within the QC limits ? See Notes

If no, list sample ID where range was exceeded: see notes

**Equipment Field Blank ID :** NA  
**Trip Blank ID :** TRIP BLANK

**Method Blank:** 8260C 8/21, 8/25/14  
                                   160.3 Modified 8/21/2014

**Were any compounds identified in the method blank, field blank or trip blank above detection limits ?** No

If so, list Sample ID/Compound/Concentration/Units: NA

**Notes:**

**All samples were initially analyzed at appropriate dilutions.**

(1) The RPD was outside limits in the LCS for Carbon tetrachloride, Chlorobenzene, and Tetrachloroethene in batch 407807. The data was not impacted since the analytical results in these batches were non-detect for these analytes.

**Reviewed By:** Pernilla Haley 6/9/14



August 28, 2014

Service Request No: R1406468

Mr. Ray Cadorette  
CB&I Environmental & Infrastructure  
150 Royall Street  
Canton, MA 02021

**Laboratory Results for: Varian Beverly - Soil/146898**

Dear Mr. Cadorette:

Enclosed are the results of the sample(s) submitted to our laboratory on August 20, 2014. For your reference, these analyses have been assigned our service request number **R1406468**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at [Janice.Jaeger@alsglobal.com](mailto:Janice.Jaeger@alsglobal.com).

Respectfully submitted,

**ALS Group USA Corp. dba ALS Environmental**



Janice Jaeger  
Client Services Manager

CC: Pernilla Haley

Page 1 of 17

## CASE NARRATIVE

**Client:** CB&I  
**Project:** Varian Beverly  
**Sample Matrix:** Soil/Water

**Service Request No.:** R1406468  
**Project Number:** 146898  
**Date Received:** 08/20/14

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II, deliverables with Massachusetts CAM analyses reporting. When appropriate to the method, method blank results have been reported with each analytical test.

### Sample Receipt

Soil and water samples were collected on 08/19/14 and received at ALS in good condition at a cooler temperature of 3.9 °C as noted on the cooler receipt and preservation check form. The samples were stored in a refrigerator at 1 - 6 °C upon receipt at the laboratory. See the second page of the Case Narrative for a cross-reference between Client ID and ALS Job #.

### Volatile Organics

Two soil samples and one water sample were analyzed for a site list of Volatile Organics by SW-846 Method 5035/5030/8260C.

All initial calibrations were compliant.

All the continuing calibration criteria were met for all analytes.

All Surrogate Standard recoveries were within QC limits.

All Blank Spike (LCS)/Blank Spike Duplicate (LCSD) recoveries were within QC limits. Various RPD's were outside limits and have been flagged with an "\*\*". No data was affected.

All samples were analyzed within the required holding time of 14 days.

## MassDEP Analytical Protocol Certification Form

Laboratory Name: ALS Environmental

Project #: 14698

Project Location: Varian Beverly

RTN:

**This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
R1403116-001-004

 Matrices: Groundwater/Surface Water    Soil/Sediment     Drinking Water    Air    Other:

**CAM Protocol** (check all that apply below):

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B	MassDEP VPH CAM IV A	8081 Pesticides CAM V B	7196 Hex Cr CAM VI B	MassDEP APH CAM IX A
8270 SVOC CAM II B	7010 Metals CAM III C	MassDEP EPH CAM IV B	8151 Herbicides CAM V C	8330 Explosives CAM VIII A	TO-15 VOC CAM IX B
6010 Metals CAM III A	6020 Metals CAM III D	8082 PCB CAM V A	9014 Total Cyanide/PAC CAM VI A	6860 Perchlorate CAM VIII B	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	X	Yes	No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	X	Yes	No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	X	Yes	No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	X	Yes	No
<b>E</b>	VPH, EPH, APH, and TO-15 only: a. VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	Yes	No	No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	X	Yes	No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	X	Yes	No <sup>1</sup>
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**Data User Note:** Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

<b>H</b>	Were all QC performance standards specified in the CAM protocol(s) achieved?	X	Yes	No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	Yes	X	No <sup>1</sup>

<sup>1</sup>All negative responses must be addressed in an attached laboratory narrative.

*I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.*

Signature:

 Position: Client Services  
 Manager

 Printed Name: Janice Jaeger

 Date: 08/28/14
00003

## CASE NARRATIVE

This report contains analytical results for the following samples:  
Service Request Number: R1406468

<u>Lab ID</u>	<u>Client ID</u>
R1406468-001	DRUM #1
R1406468-002	DRUM #2
R1406468-003	TRIP BLANK

00004



## REPORT QUALIFIERS AND DEFINITIONS

- |   |  |
|---|--|
| <p><b>U</b> Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.</p> <p><b>J</b> Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration &gt;40% difference between two GC columns (pesticides/Aroclors).</p> <p><b>B</b> Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.</p> <p><b>E</b> Inorganics- Concentration is estimated due to the serial dilution was outside control limits.</p> <p><b>E</b> Organics- Concentration has exceeded the calibration range for that specific analysis.</p> <p><b>D</b> Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.</p> <p><b>*</b> Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.</p> <p><b>H</b> Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.</p> <p><b>#</b> Spike was diluted out.</p> | <p><b>+</b> Correlation coefficient for MSA is &lt;0.995.</p> <p><b>N</b> Inorganics- Matrix spike recovery was outside laboratory limits.</p> <p><b>N</b> Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.</p> <p><b>S</b> Concentration has been determined using Method of Standard Additions (MSA).</p> <p><b>W</b> Post-Digestion Spike recovery is outside control limits and the sample absorbance is &lt;50% of the spike absorbance.</p> <p><b>P</b> Concentration &gt;40% (25% for CLP) difference between the two GC columns.</p> <p><b>C</b> Confirmed by GC/MS</p> <p><b>Q</b> DoD reports: indicates a pesticide/Aroclor is not confirmed (<math>\geq 100\%</math> Difference between two GC columns).</p> <p><b>X</b> See Case Narrative for discussion.</p> <p><b>MRL</b> Method Reporting Limit. Also known as:</p> <p><b>LOQ</b> Limit of Quantitation (LOQ)<br/>The lowest concentration at which the method analyte may be reliably quantified under the method conditions.</p> <p><b>MDL</b> Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).</p> <p><b>LOD</b> Limit of Detection. A value at or above the MDL which has been verified to be detectable.</p> <p><b>ND</b> Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.</p> |
|---|--|

### Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

*The Commonwealth of Massachusetts*



*Department of Environmental Protection*

*Division of Environmental Analysis  
Senator William X. Wall Experiment Station*

*certifies*

M-NY032

ALS ENVIRONMENTAL ROCHESTER  
1565 JEFFERSON RD  
BUILDING 300, SUITE 360  
ROCHESTER, NY 14623-0000

*Laboratory Director:* LARRY LEWIS

*for the analysis of* NON-POTABLE WATER (CHEMISTRY)

*pursuant to 310 CMR 42.00*

*This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.*

*This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.*

*Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.*

*Dean C. Giacalone*

*Director, Division of Environmental Analysis*

*Issued:* 01 JUL 2014

*Expires:* 30 JUN 2015

00005A

**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Certified Parameter List as of: 01 JUL 2014

M-NY032

**ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY**

**NON POTABLE WATER (CHEMISTRY)**

**Effective Date 01 JUL 2014**

**Expiration Date 30 JUN 2015**

**Analytes**

**Methods**

ALUMINUM	EPA 200.7
ANTIMONY	EPA 200.7
ANTIMONY	EPA 200.8
ARSENIC	EPA 200.7
ARSENIC	EPA 200.8
BERYLLIUM	EPA 200.7
BERYLLIUM	EPA 200.8
CADMIUM	EPA 200.7
CADMIUM	EPA 200.8
CHROMIUM	EPA 200.7
CHROMIUM	EPA 200.8
COBALT	EPA 200.7
COBALT	EPA 200.8
COPPER	EPA 200.7
COPPER	EPA 200.8
IRON	EPA 200.7
LEAD	EPA 200.7
LEAD	EPA 200.8
MANGANESE	EPA 200.7
MANGANESE	EPA 200.8
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
MOLYBDENUM	EPA 200.8
NICKEL	EPA 200.7
NICKEL	EPA 200.8
SELENIUM	EPA 200.7
SELENIUM	EPA 200.8
SILVER	EPA 200.7
SILVER	EPA 200.8
THALLIUM	EPA 200.7
THALLIUM	EPA 200.8
VANADIUM	EPA 200.7
VANADIUM	EPA 200.8
ZINC	EPA 200.7
ZINC	EPA 200.8
SPECIFIC CONDUCTIVITY	EPA 120.1
TOTAL DISSOLVED SOLIDS	SM 2540C
HARDNESS (CaCO3), TOTAL	SM 2340C
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
ALKALINITY, TOTAL	SM 2320B

June 26, 2014

\*= Provisional Certification

Page 1 of 2

0005B

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2014

M-NY032 ALS ENVIRONMENTAL ROCHESTER  
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY) Effective Date 01 JUL 2014 Expiration Date 30 JUN 2015

Analytes

Methods

CHLORIDE	SM 4500-CL-E
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 365.1
PHOSPHORUS, TOTAL	EPA 365.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	SM 5210B
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	SM 2540D
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
SVOC-ACID EXTRACTABLES	EPA 625
SVOC-BASE/NEUTRAL EXTRACTABLES	EPA 625
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly - Soil/146898  
Sample Matrix: Soil  
Sample Name: DRUM #1  
Lab Code: R1406468-001

Service Request: R1406468  
Date Collected: 8/19/14 1430  
Date Received: 8/20/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Solids, Total	160.3 Modified	86.4	Percent	1.0	1	NA	8/21/14 10:58	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly - Soil/146898  
 Sample Matrix: Soil

Service Request: R1406468  
 Date Collected: 8/19/14 1430  
 Date Received: 8/20/14  
 Date Analyzed: 8/21/14 15:12

Sample Name: DRUM #1  
 Lab Code: R1406468-001

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 86.4

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\082114\W0512.D\

Analysis Lot: 407807  
 Instrument Name: R-MS-07  
 Dilution Factor: .87

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.0	U	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
67-64-1	Acetone	5.0	U	5.0	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-09-2	Methylene Chloride	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	5.0	U	5.0	
79-01-6	Trichloroethene (TCE)	5.0	U	5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	5.0	U	5.0	
156-59-2	cis-1,2-Dichloroethene	5.0	U	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0	U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	8/21/14 15:12	
Dibromofluoromethane	99	70-130	8/21/14 15:12	
Toluene-d8	99	70-130	8/21/14 15:12	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly - Soil/146898  
Sample Matrix: Soil  
Sample Name: DRUM #2  
Lab Code: R1406468-002

Service Request: R1406468  
Date Collected: 8/19/14 1400  
Date Received: 8/20/14

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Solids, Total	160.3 Modified	89.1	Percent	1.0	1	NA	8/21/14 10:58	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly - Soil/146898  
 Sample Matrix: Soil

Service Request: R1406468  
 Date Collected: 8/19/14 1400  
 Date Received: 8/20/14  
 Date Analyzed: 8/21/14 15:52

Sample Name: DRUM #2  
 Lab Code: R1406468-002

Units: µg/Kg  
 Basis: Dry  
 Percent Solids: 89.1

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\082114\W0513.D\

Analysis Lot: 407807  
 Instrument Name: R-MS-07  
 Dilution Factor: .94

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.3	U	5.3	
79-34-5	1,1,2,2-Tetrachloroethane	5.3	U	5.3	
79-00-5	1,1,2-Trichloroethane	5.3	U	5.3	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.3	U	5.3	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.3	U	5.3	
107-06-2	1,2-Dichloroethane	5.3	U	5.3	
78-87-5	1,2-Dichloropropane	5.3	U	5.3	
67-64-1	Acetone	5.3	U	5.3	
75-27-4	Bromodichloromethane	5.3	U	5.3	
75-25-2	Bromoform	5.3	U	5.3	
74-83-9	Bromomethane	5.3	U	5.3	
56-23-5	Carbon Tetrachloride	5.3	U	5.3	
108-90-7	Chlorobenzene	5.3	U	5.3	
75-00-3	Chloroethane	5.3	U	5.3	
67-66-3	Chloroform	5.3	U	5.3	
74-87-3	Chloromethane	5.3	U	5.3	
124-48-1	Dibromochloromethane	5.3	U	5.3	
75-09-2	Methylene Chloride	5.3	U	5.3	
127-18-4	Tetrachloroethene (PCE)	5.3	U	5.3	
79-01-6	Trichloroethene (TCE)	5.3	U	5.3	
75-69-4	Trichlorofluoromethane (CFC 11)	5.3	U	5.3	
75-01-4	Vinyl Chloride	5.3	U	5.3	
156-59-2	cis-1,2-Dichloroethene	5.3	U	5.3	
10061-01-5	cis-1,3-Dichloropropene	5.3	U	5.3	
156-60-5	trans-1,2-Dichloroethene	5.3	U	5.3	
10061-02-6	trans-1,3-Dichloropropene	5.3	U	5.3	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	70-130	8/21/14 15:52	
Dibromofluoromethane	101	70-130	8/21/14 15:52	
Toluene-d8	98	70-130	8/21/14 15:52	



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
 Project: Varian Beverly - Soil/146898  
 Sample Matrix: Water

Service Request: R1406468  
 Date Collected: 8/19/14 1400  
 Date Received: 8/20/14  
 Date Analyzed: 8/25/14 13:35

Sample Name: TRIP BLANK  
 Lab Code: R1406468-003

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\082514\M8332.D\

Analysis Lot: 408261  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	70-130	8/25/14 13:35	
Dibromofluoromethane	110	70-130	8/25/14 13:35	
Toluene-d8	100	70-130	8/25/14 13:35	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: CB&I  
Project: Varian Beverly - Soil/146898  
Sample Matrix: Soil  
Sample Name: Method Blank  
Lab Code: R1406468-MB

Service Request: R1406468  
Date Collected: NA  
Date Received: NA  
Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Solids, Total	160.3 Modified	1.0	Percent	1.0	1	NA	8/21/14 10:58	

Analytical Report

Client: CB&I  
 Project: Varian Beverly - Soil/146898  
 Sample Matrix: Soil

Service Request: R1406468  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 8/21/14 11:43

Sample Name: Method Blank  
 Lab Code: RQ1409882-05

Units: µg/Kg  
 Basis: Dry

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\MSVOA7\DATA\082114\W0507.D\

Analysis Lot: 407807  
 Instrument Name: R-MS-07  
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0 U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0 U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	5.0 U	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0 U	5.0	
107-06-2	1,2-Dichloroethane	5.0 U	5.0	
78-87-5	1,2-Dichloropropane	5.0 U	5.0	
67-64-1	Acetone	5.0 U	5.0	
75-27-4	Bromodichloromethane	5.0 U	5.0	
75-25-2	Bromoform	5.0 U	5.0	
74-83-9	Bromomethane	5.0 U	5.0	
56-23-5	Carbon Tetrachloride	5.0 U	5.0	
108-90-7	Chlorobenzene	5.0 U	5.0	
75-00-3	Chloroethane	5.0 U	5.0	
67-66-3	Chloroform	5.0 U	5.0	
74-87-3	Chloromethane	5.0 U	5.0	
124-48-1	Dibromochloromethane	5.0 U	5.0	
75-09-2	Methylene Chloride	5.0 U	5.0	
127-18-4	Tetrachloroethene (PCE)	5.0 U	5.0	
79-01-6	Trichloroethene (TCE)	5.0 U	5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0 U	5.0	
75-01-4	Vinyl Chloride	5.0 U	5.0	
156-59-2	cis-1,2-Dichloroethene	5.0 U	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0 U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0 U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0 U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed Q
4-Bromofluorobenzene	102	70-130	8/21/14 11:43
Dibromofluoromethane	99	70-130	8/21/14 11:43
Toluene-d8	98	70-130	8/21/14 11:43

Analytical Report

Client: CB&I  
 Project: Varian Beverly - Soil/146898  
 Sample Matrix: Water

Service Request: R1406468  
 Date Collected: NA  
 Date Received: NA  
 Date Analyzed: 8/25/14 13:03

Sample Name: Method Blank  
 Lab Code: RQ1409978-05

Units: µg/L  
 Basis: NA

Volatile Organic Compounds by GC/MS

Analytical Method: 8260C  
 Data File Name: I:\ACQUDATA\msvoa12\Data\082514\M8331.D\

Analysis Lot: 408261  
 Instrument Name: R-MS-12  
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	2.0	U	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
67-64-1	Acetone	10	U	10	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	2.0	U	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	70-130	8/25/14 13:03	
Dibromofluoromethane	107	70-130	8/25/14 13:03	
Toluene-d8	101	70-130	8/25/14 13:03	

Client: CB&I  
 Project: Varian Beverly - Soil/146898  
 Sample Matrix: Soil

Service Request: R1406468  
 Date Analyzed: 8/21/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/Kg  
 Basis: Dry

Analysis Lot: 407807

Analyte Name	Lab Control Sample RQ1409882-03			Duplicate Lab Control Sample RQ1409882-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	21.7	20.0	108	18.6	20.0	93	70 - 130	15	20
1,1,2,2-Tetrachloroethane	20.8	20.0	104	19.7	20.0	99	70 - 130	5	20
1,1,2-Trichloroethane	20.1	20.0	100	19.6	20.0	98	70 - 130	2	20
1,1-Dichloroethane (1,1-DCA)	20.1	20.0	101	19.6	20.0	98	70 - 130	3	20
1,1-Dichloroethene (1,1-DCE)	21.9	20.0	110	22.5	20.0	112	70 - 130	2	20
1,2-Dichloroethane	20.1	20.0	100	20.6	20.0	103	70 - 130	3	20
1,2-Dichloropropane	21.8	20.0	109	20.3	20.0	101	70 - 130	8	20
Acetone	15.2	20.0	76	17.8	20.0	89	40 - 160	16	20
Bromodichloromethane	21.1	20.0	105	20.2	20.0	101	70 - 130	4	20
Bromoform	20.4	20.0	102	19.2	20.0	96	70 - 130	6	20
Bromomethane	16.8	20.0	84	17.1	20.0	86	40 - 160	2	20
Carbon Tetrachloride	22.5	20.0	113	17.7	20.0	88	70 - 130	25 *	20
Chlorobenzene	23.8	20.0	119	18.5	20.0	92	70 - 130	26 *	20
Chloroethane	17.7	20.0	88	17.7	20.0	88	70 - 130	<1	20
Chloroform	20.2	20.0	101	20.9	20.0	104	70 - 130	3	20
Chloromethane	18.8	20.0	94	19.0	20.0	95	40 - 160	1	20
Dibromochloromethane	19.8	20.0	99	18.4	20.0	92	70 - 130	7	20
Methylene Chloride	20.3	20.0	101	20.3	20.0	102	70 - 130	<1	20
Tetrachloroethene (PCE)	25.3	20.0	126	17.3	20.0	87	70 - 130	37 *	20
Trichloroethene (TCE)	22.5	20.0	112	19.3	20.0	97	70 - 130	14	20
Trichlorofluoromethane (CFC 11)	20.0	20.0	100	18.5	20.0	92	70 - 130	8	20
Vinyl Chloride	17.9	20.0	90	18.1	20.0	91	70 - 130	1	20
cis-1,2-Dichloroethene	19.6	20.0	98	20.2	20.0	101	70 - 130	3	20
cis-1,3-Dichloropropene	21.0	20.0	105	19.8	20.0	99	70 - 130	6	20
trans-1,2-Dichloroethene	20.3	20.0	102	20.6	20.0	103	70 - 130	<1	20
trans-1,3-Dichloropropene	21.4	20.0	107	20.2	20.0	101	70 - 130	6	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: CB&I  
 Project: Varian Beverly - Soil/146898  
 Sample Matrix: Water

Service Request: R1406468  
 Date Analyzed: 8/25/14

Lab Control Sample Summary  
 Volatile Organic Compounds by GC/MS

Analytical Method: 8260C

Units: µg/L  
 Basis: NA

Analysis Lot: 408261

Analyte Name	Lab Control Sample RQ1409978-03			Duplicate Lab Control Sample RQ1409978-04			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	23.0	20.0	115	21.9	20.0	110	70 - 130	5	20
1,1,2,2-Tetrachloroethane	20.3	20.0	101	19.8	20.0	99	70 - 130	3	20
1,1,2-Trichloroethane	20.6	20.0	103	20.0	20.0	100	70 - 130	3	20
1,1-Dichloroethane (1,1-DCA)	20.7	20.0	104	19.8	20.0	99	70 - 130	4	20
1,1-Dichloroethene (1,1-DCE)	21.4	20.0	107	19.6	20.0	98	70 - 130	9	20
1,2-Dichloroethane	25.4	20.0	127	25.3	20.0	127	70 - 130	<1	20
1,2-Dichloropropane	21.6	20.0	108	21.0	20.0	105	70 - 130	3	20
Acetone	18.7	20.0	93	19.6	20.0	98	40 - 160	5	20
Bromodichloromethane	23.2	20.0	116	22.7	20.0	113	70 - 130	2	20
Bromoform	21.5	20.0	107	20.3	20.0	102	70 - 130	5	20
Bromomethane	21.4	20.0	107	19.1	20.0	96	40 - 160	11	20
Carbon Tetrachloride	23.8	20.0	119	22.9	20.0	115	70 - 130	4	20
Chlorobenzene	19.8	20.0	99	19.4	20.0	97	70 - 130	2	20
Chloroethane	16.6	20.0	83	16.4	20.0	82	70 - 130	1	20
Chloroform	22.3	20.0	111	21.2	20.0	106	70 - 130	5	20
Chloromethane	18.6	20.0	93	17.3	20.0	86	40 - 160	7	20
Dibromochloromethane	22.1	20.0	110	21.7	20.0	109	70 - 130	2	20
Methylene Chloride	18.4	20.0	92	17.8	20.0	89	70 - 130	4	20
Tetrachloroethene (PCE)	21.3	20.0	106	20.3	20.0	101	70 - 130	5	20
Trichloroethene (TCE)	20.4	20.0	102	19.7	20.0	98	70 - 130	4	20
Trichlorofluoromethane (CFC 11)	23.0	20.0	115	22.4	20.0	112	70 - 130	3	20
Vinyl Chloride	17.1	20.0	85	16.7	20.0	83	70 - 130	2	20
cis-1,2-Dichloroethene	19.1	20.0	96	18.5	20.0	93	70 - 130	3	20
cis-1,3-Dichloropropene	21.3	20.0	106	20.7	20.0	103	70 - 130	3	20
trans-1,2-Dichloroethene	19.2	20.0	96	18.7	20.0	94	70 - 130	3	20
trans-1,3-Dichloropropene	22.1	20.0	110	21.7	20.0	108	70 - 130	2	20

Results flagged with an asterisk (\*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.



# CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

17720

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name <u>Varian</u>		Project Number <u>152728</u>		ANALYSIS REQUESTED (Include Method Number and Container Preservative)															
Project Manager <u>Raymond Cadorette</u>		Report CC		PRESERVATIVE <u>6</u>															
Company/Address <u>CBI</u>		NUMBER OF CONTAINERS		GC/MS VOCs • 8260 • 824 • CLP GC/MS SVOCs • 8270 • 825 GC/VOCs • 8021 • 801/802 PESTICIDES • 8081 • 808 PCBs • 8092 • 808 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below)															
<u>150 Royall St</u>																			
<u>Canton MA 02021</u>																			
Phone # <u>617 589 6102</u>		Email <u>Raymond.Cadorette@CBI.com</u>		Preservative Key 0. NONE 1. HCL 2. HNO <sub>3</sub> 3. H <sub>2</sub> SO <sub>4</sub> 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO <sub>4</sub> 8. Other _____ REMARKS/ ALTERNATE DESCRIPTION															
Sampler's Signature <u>[Signature]</u>		Sampler's Printed Name <u>Paul Hedcock</u>																	
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING		MATRIX															
		DATE	TIME																
<u>Drum # 1</u>		<u>8.19.14</u>	<u>1430</u>	<u>Solids</u>	<u>4</u>	<u>X</u>													
<u>Drum # 2</u>		<u>8.19.14</u>	<u>1400</u>	<u>Solids</u>	<u>4</u>	<u>X</u>													
<u>Toip Blank</u>		<u>8.11.14</u>	<u>1330</u>	<u>liquid</u>	<u>3</u>														
SPECIAL INSTRUCTIONS/COMMENTS <u>Metals</u>						TURNAROUND REQUIREMENTS			REPORT REQUIREMENTS			INVOICE INFORMATION							
						RUSH (SURCHARGES APPLY) ___ 1 day ___ 2 day ___ 3 day ___ 4 day ___ 5 day REQUESTED REPORT DATE _____			I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data Edate ___ Yes ___ No			PO # _____ BILL TO: _____							
See OAPP <input type="checkbox"/>																			
STATE WHERE SAMPLES WERE COLLECTED																			
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY	
<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>	
<u>Paul Hedcock</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>		<u>[Signature]</u>	
Firm <u>8.19.14 1500</u>		Firm <u>1430</u>		Firm <u>8.19.14 1300</u>		Firm <u>1430</u>		Firm <u>8.19.14 1300</u>		Firm <u>1430</u>		Firm <u>8.19.14 1300</u>		Firm <u>1430</u>		Firm <u>8.19.14 1300</u>		Firm <u>1430</u>	
Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time	

**R1406468 7 Y**  
 CBI Environmental & Infrastructure  
 Varian Beverly - Soil



# Cooler Receipt and Preservation Check Form

Project/Client CBFI Folder Number R1406468

Cooler received on 8/20 by: JFS COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<input checked="" type="radio"/> Y	<input type="radio"/> N
2	Custody papers properly completed (ink, signed)?	<input checked="" type="radio"/> Y	<input type="radio"/> N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="radio"/> Y	<input type="radio"/> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<input checked="" type="radio"/> Y	<input type="radio"/> N

5a	Perchlorate samples have required headspace?	<input type="radio"/> Y	<input type="radio"/> N	<input checked="" type="radio"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	<input type="radio"/> Y	<input checked="" type="radio"/> N	<input type="radio"/> NA
6	Where did the bottles originate?	<u>ALS/ROC</u>	CLIENT	
7	Soil VOA received as:	Bulk	Encore	<u>5035set</u> NA

8. Temperature Readings Date: 8/20 Time: 1005 ID: IR#3 IR#4 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>3.9</u>							
Correction Factor (°C)	<u>-</u>							
Corrected Temp (°C)	<u>3.9</u>							
Within 0-6°C?	<input checked="" type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> Y	<input type="radio"/> N

If out of Temperature, note packing/ice condition: Ice melted Poorly Packed Same Day Rule

& Client Approval to Run Samples: Standing Approval Client aware at drop-off Client notified by:                     

All samples held in storage location: room by JFS on 8/20 at 1005  
5035 samples placed in storage location: F-05 by JFS on 8/20 at 1005

PC Secondary Review: JMS 8/20/14

Cooler Breakdown: Date: 8/20/14 Time: 13:00 by: JFS

- Were all bottle labels complete (i.e. analysis, preservation, etc.)?  YES  NO
- Did all bottle labels and tags agree with custody papers?  YES  NO
- Were correct containers used for the tests indicated?  YES  NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated  N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	
≥12	NaOH									Yes=All samples OK
≤2	HNO <sub>3</sub>									No=Samples were preserved at
≤2	H <sub>2</sub> SO <sub>4</sub>									The lab as listed
<4	NaHSO <sub>4</sub>									
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> (CN), ascorbic (phenol).						PM OK to Adjust:
	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	-	-							
	ZnAcetate	-	-							
	HCl	**	**	<u>4113070</u>	<u>07/13</u>					**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: 031714-1BNS, 4-086-003  
Other Comments:

PC Secondary Review: JMS 8/22/14 \*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

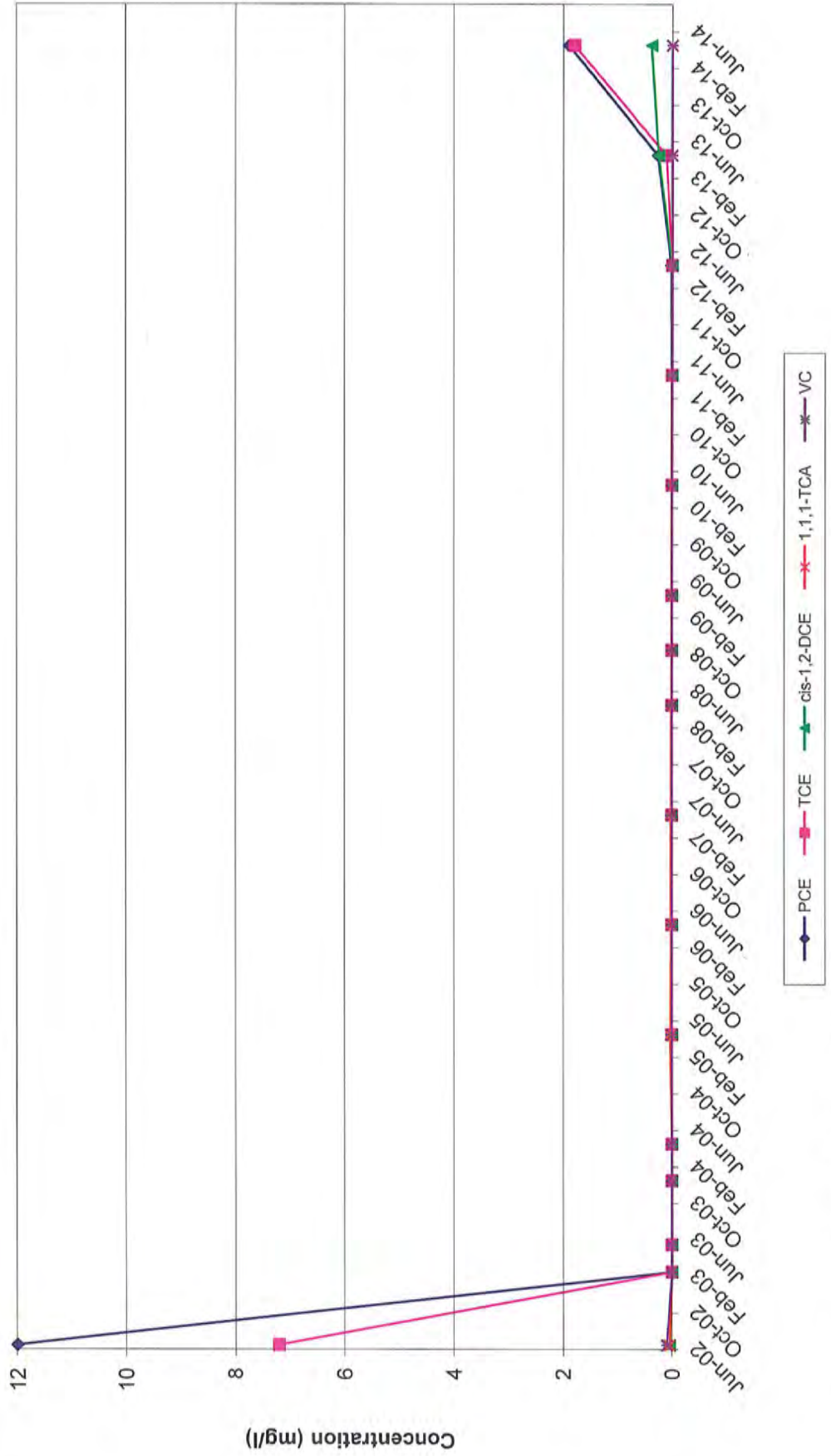


**APPENDIX G**

**GROUNDWATER VOC CONCENTRATION TREND GRAPHS**

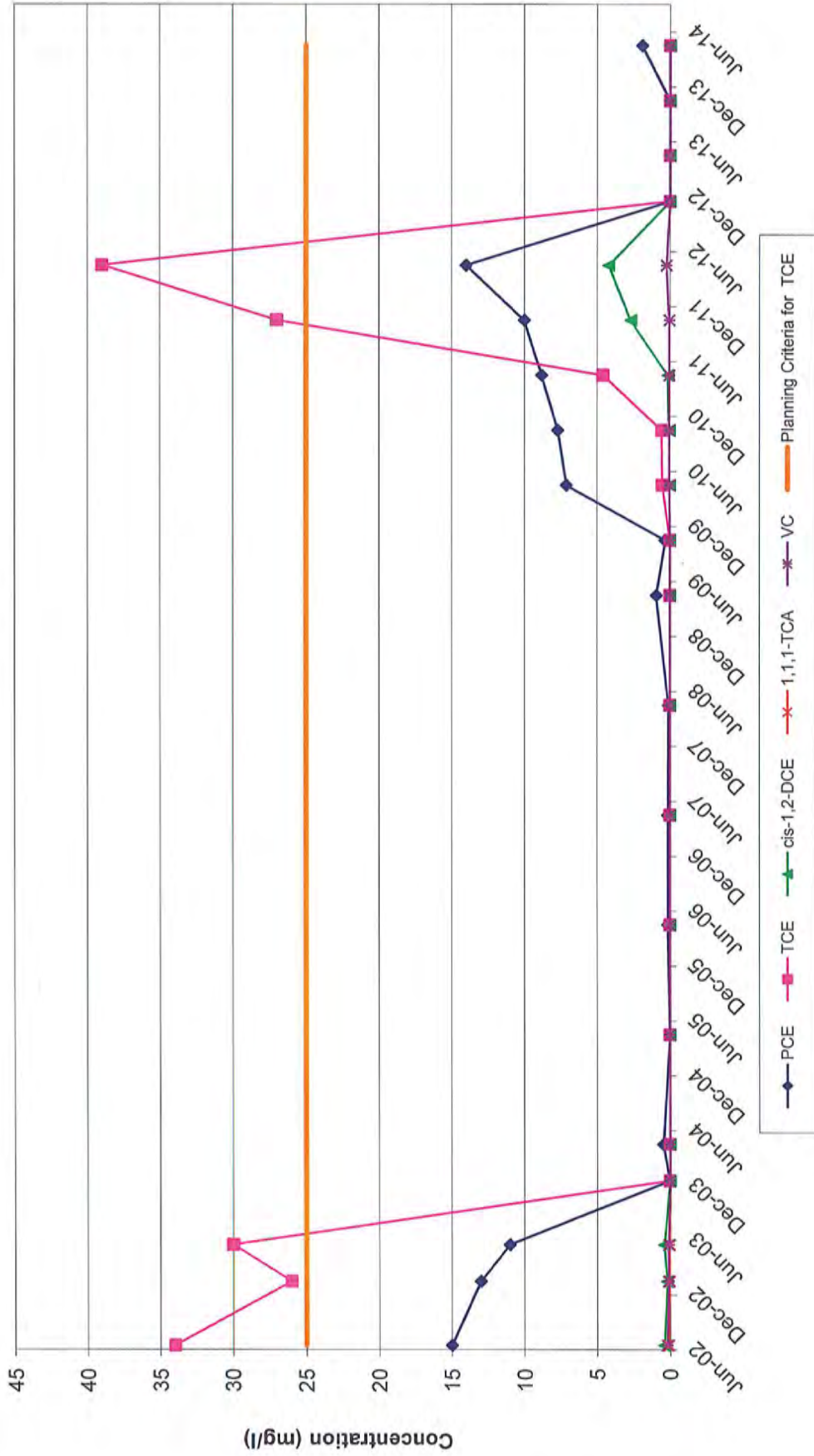
**BUILDING 3/6 TREATMENT AREA**

VOC Trends in Well AP-12-S  
Former Varian Facility Site  
Beverly, Massachusetts



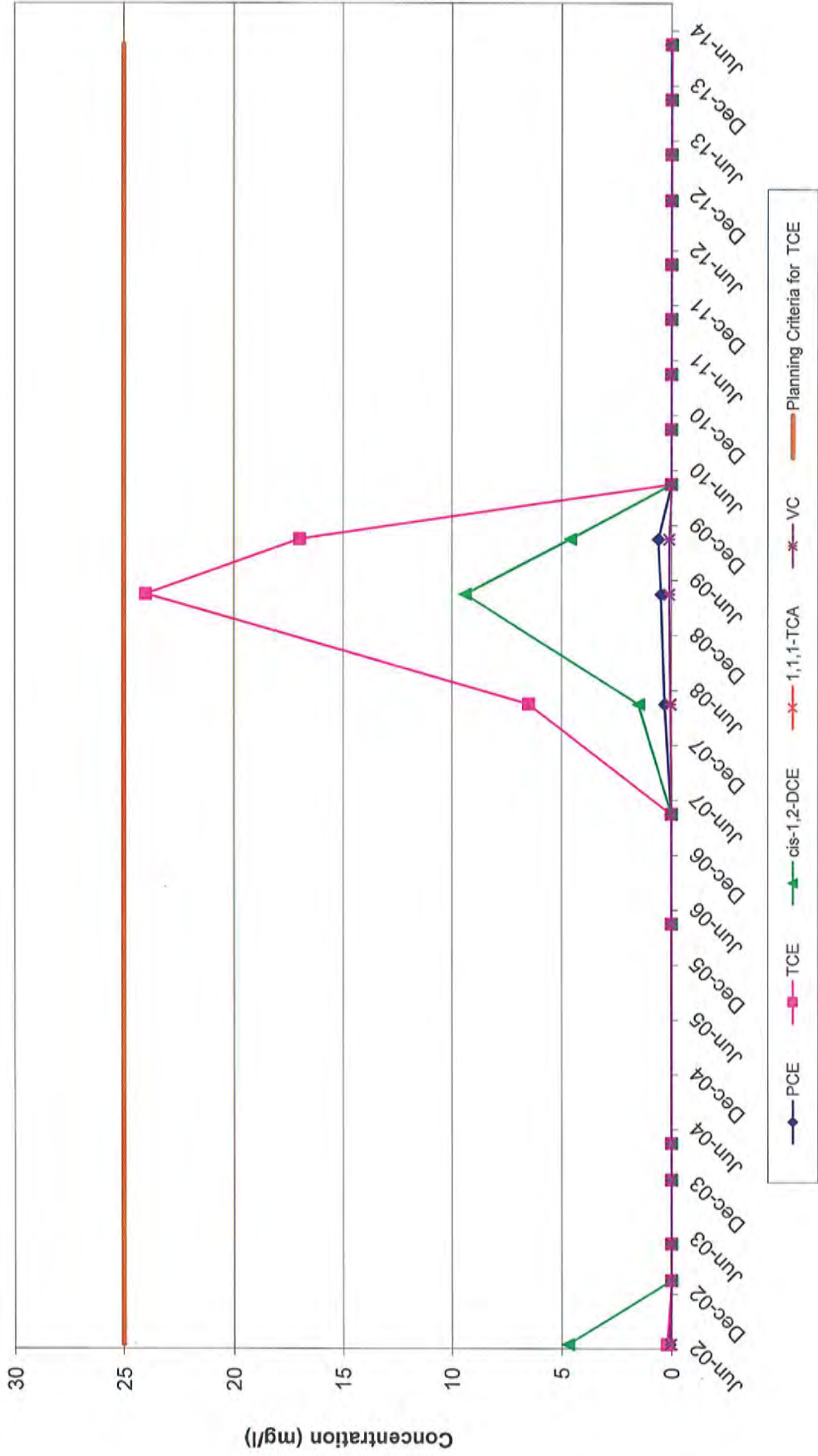
Notes: AP-12-S is a shallow well adjacent to Building 6 where permanganate injection has been completed in 2002 and 2003. See end of appendix for additional notes.

VOC Trends in Well AP-12-DO  
 Former Varian Facility Site  
 Beverly, Massachusetts



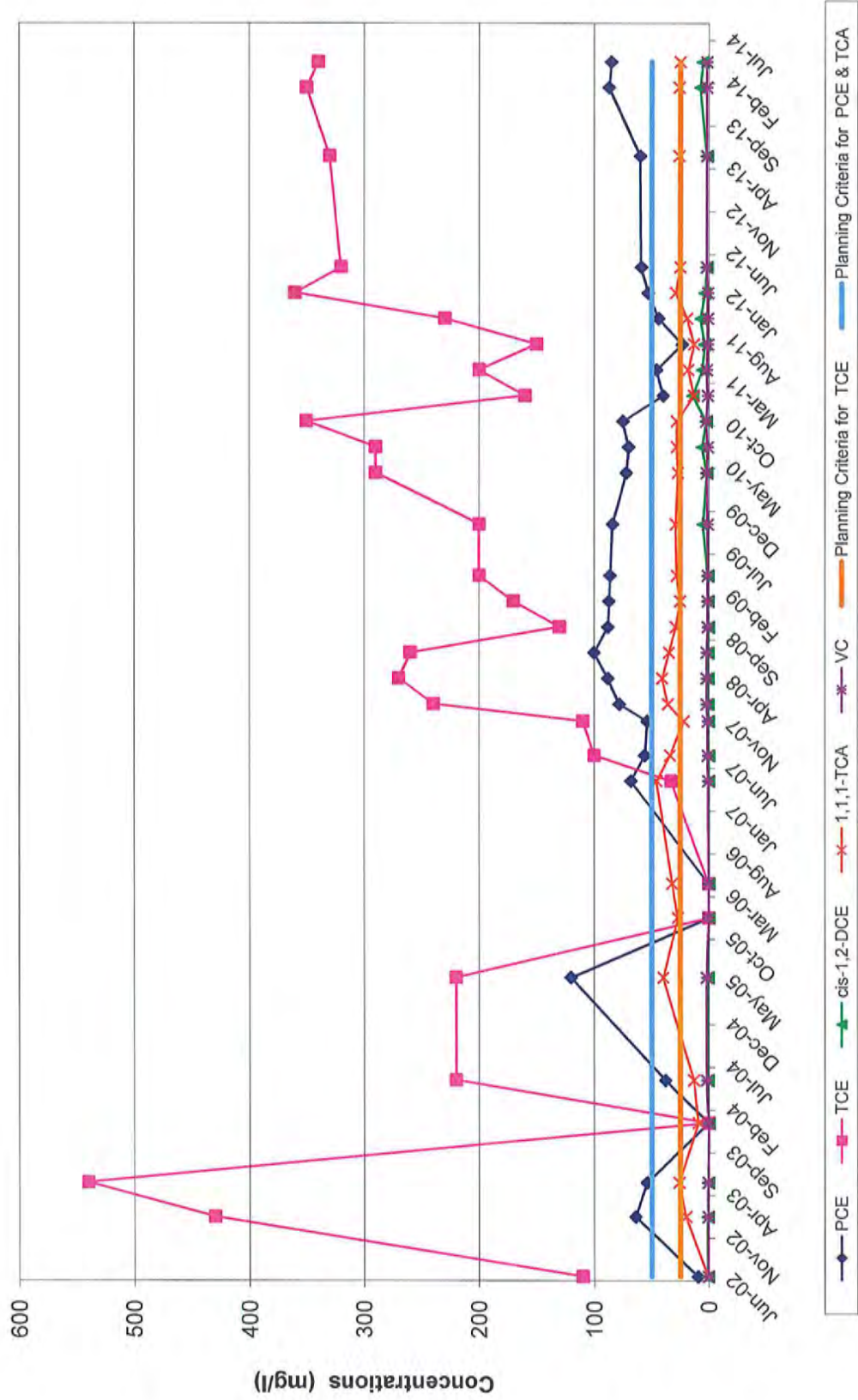
Notes: AP-12-DO is a deep overburden well adjacent to Building 6 where permanganate injection was conducted in 2002, 2003, 2004, and 2012. See end of appendix for additional notes.

VOC Trends in Well AP-12-BR  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: AP-12-DO is a deep overburden well adjacent to Building 6 where permanganate injection was conducted in 2002, 2003, 2004 and 2010. See end of appendix for additional notes.

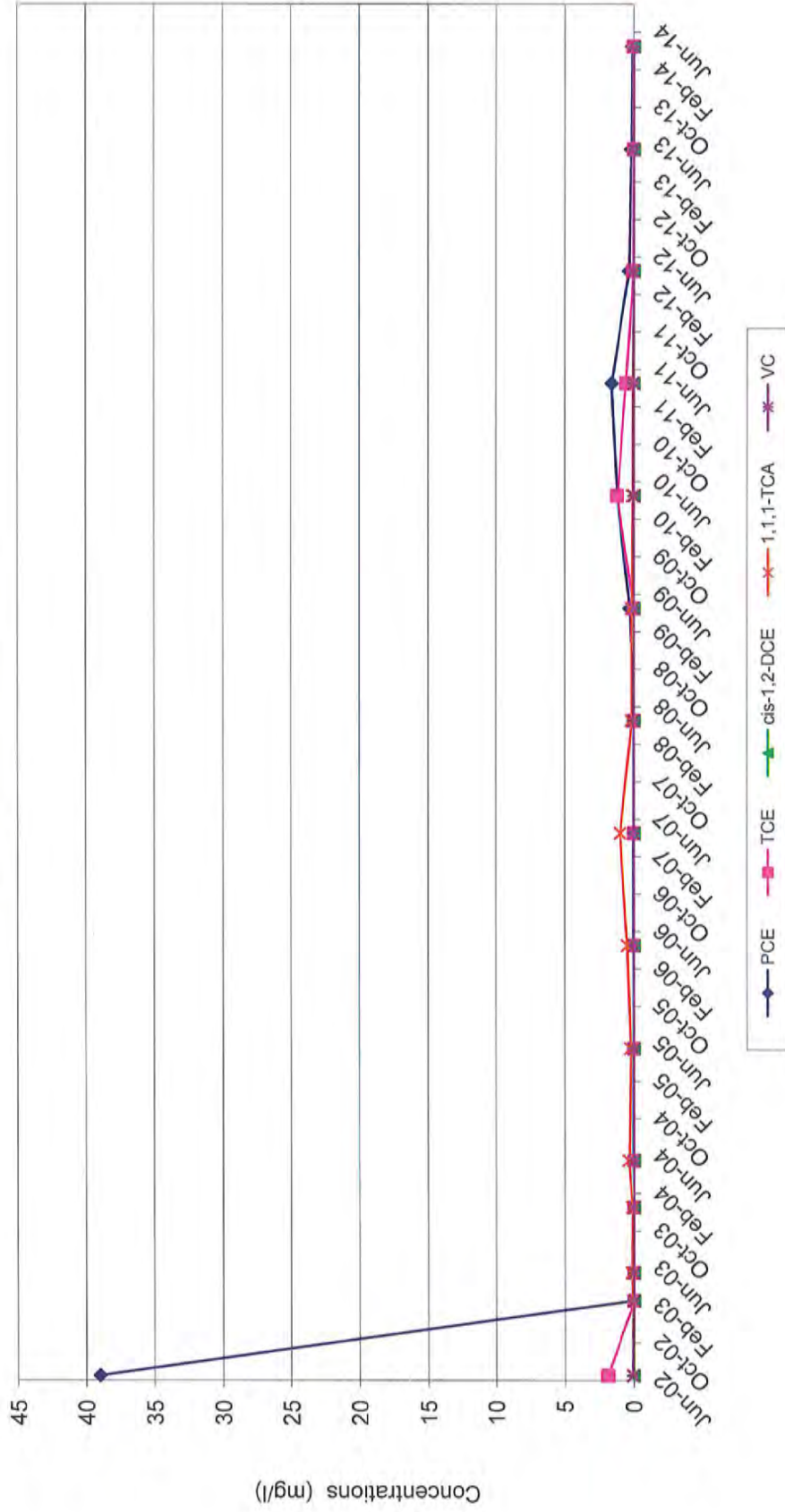
VOC Trends in Well AP-13-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: AP-13-DO is a deep overburden well adjacent to Building 3 where permanganate injection was conducted in 2002-2005 and bio-injection occurred in 2007, 2008, 2010, 2011 and in 2013. See end of appendix for additional notes.

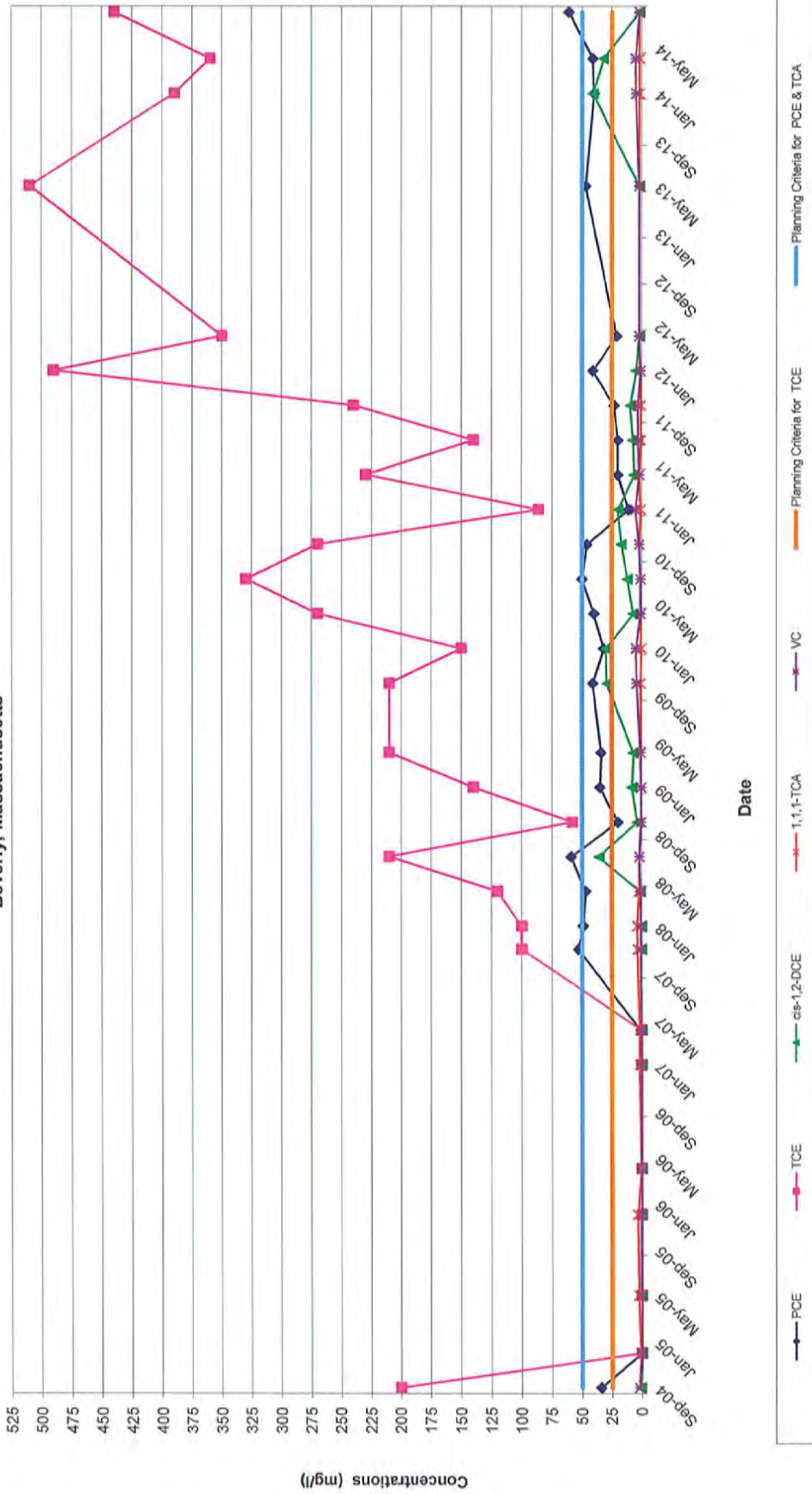


VOC Trends in Well AP-14S  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: AP-14S is a shallow overburden well adjacent to (north of) Building 3 where permanganate injection was conducted in 2002. See end of appendix for additional notes.

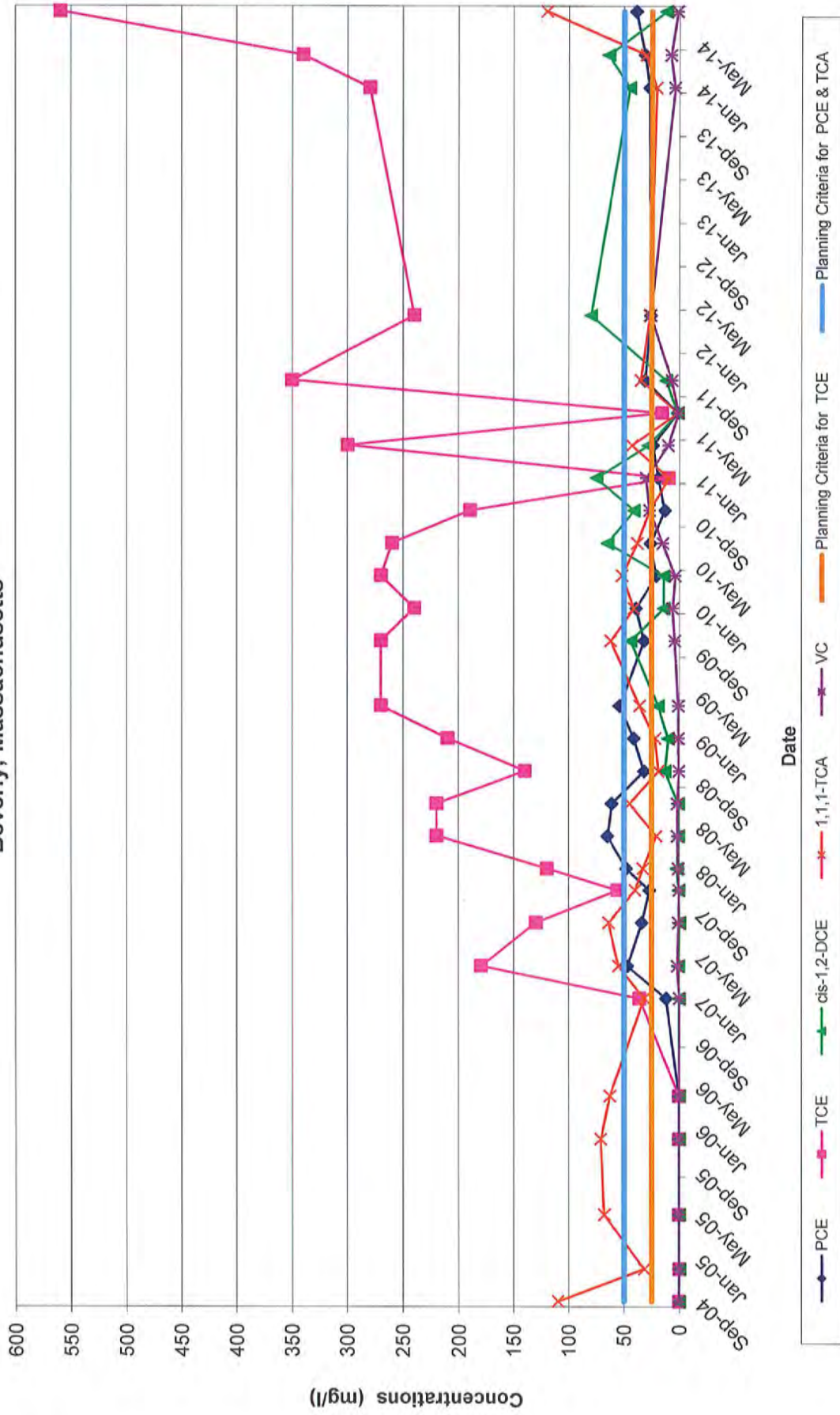
VOC Trends in Well AP-23-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: AP23-DO is a deep overburden well NE of Bid 3 where permanganate injection was conducted in 2003-2004 and bio-injection occurred in 2007-2008, 2010-2011 and 2013. See end of appendix for additional notes.

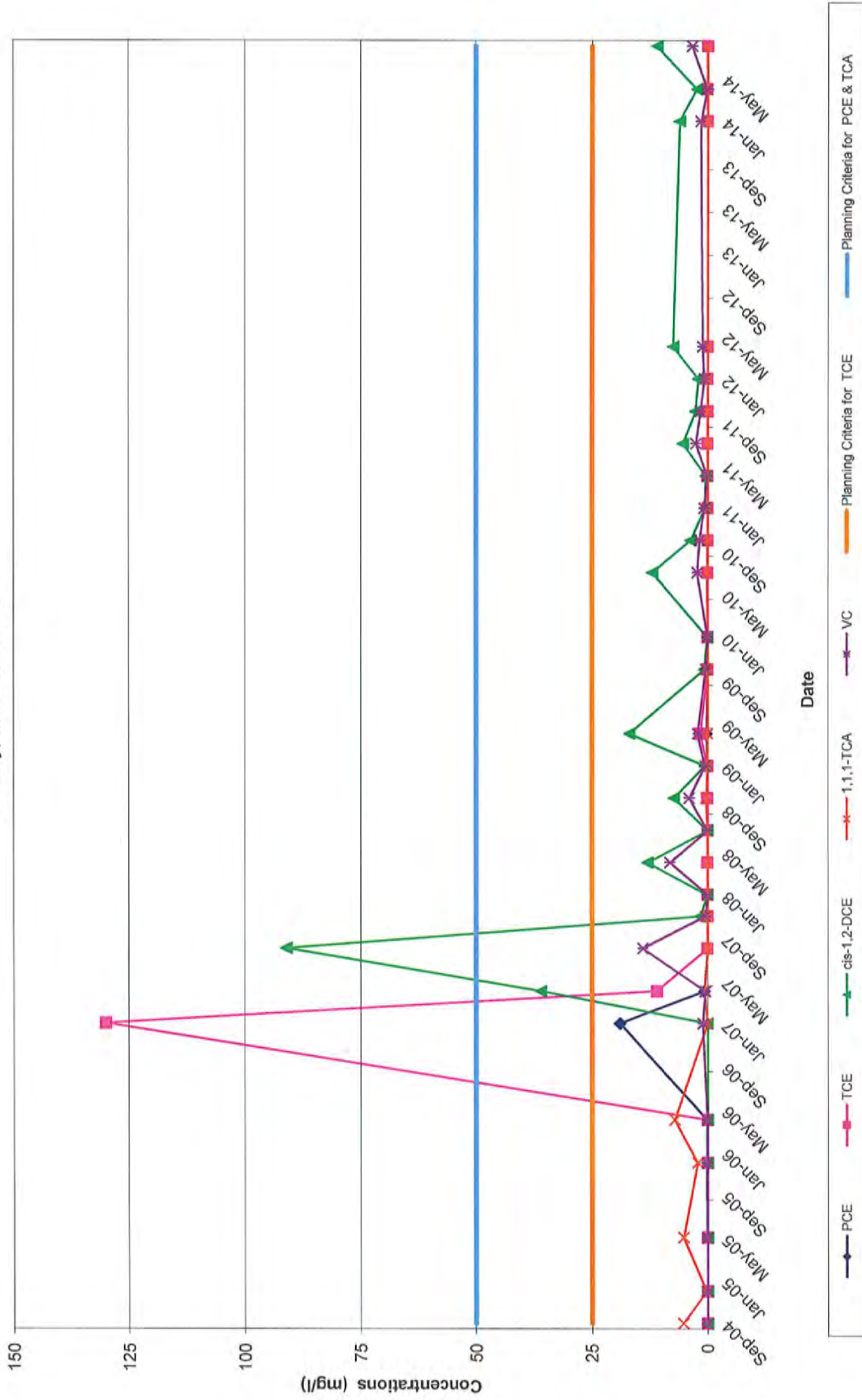


VOC Trends in Well AP-24-DO  
Former Varian Facility Site  
Beverly, Massachusetts



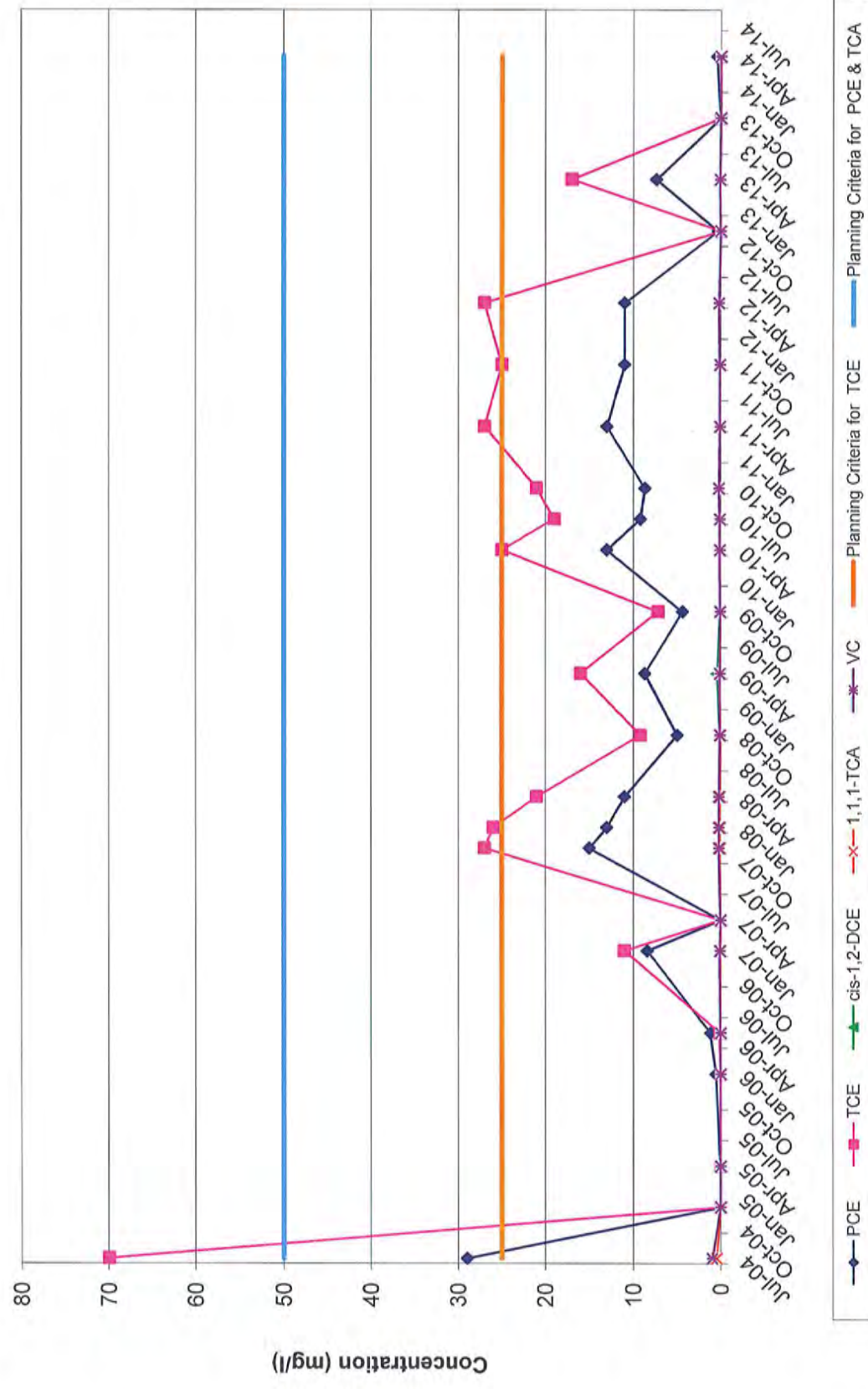
Notes: AP24-DO is a deep overburden well northeast of Building 3 where permanganate injection was conducted in 2003-2004 and bio-injection occurred in 2006-2008, 2010-2011 and 2013. See end of appendix for additional notes.

VOC Trends in Well AP-25-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: AP25-DO is a deep overburden well east of Building 3 where permanganate injection was conducted in 2004 and bio-injection occurred in 2007. See end of appendix for additional notes.

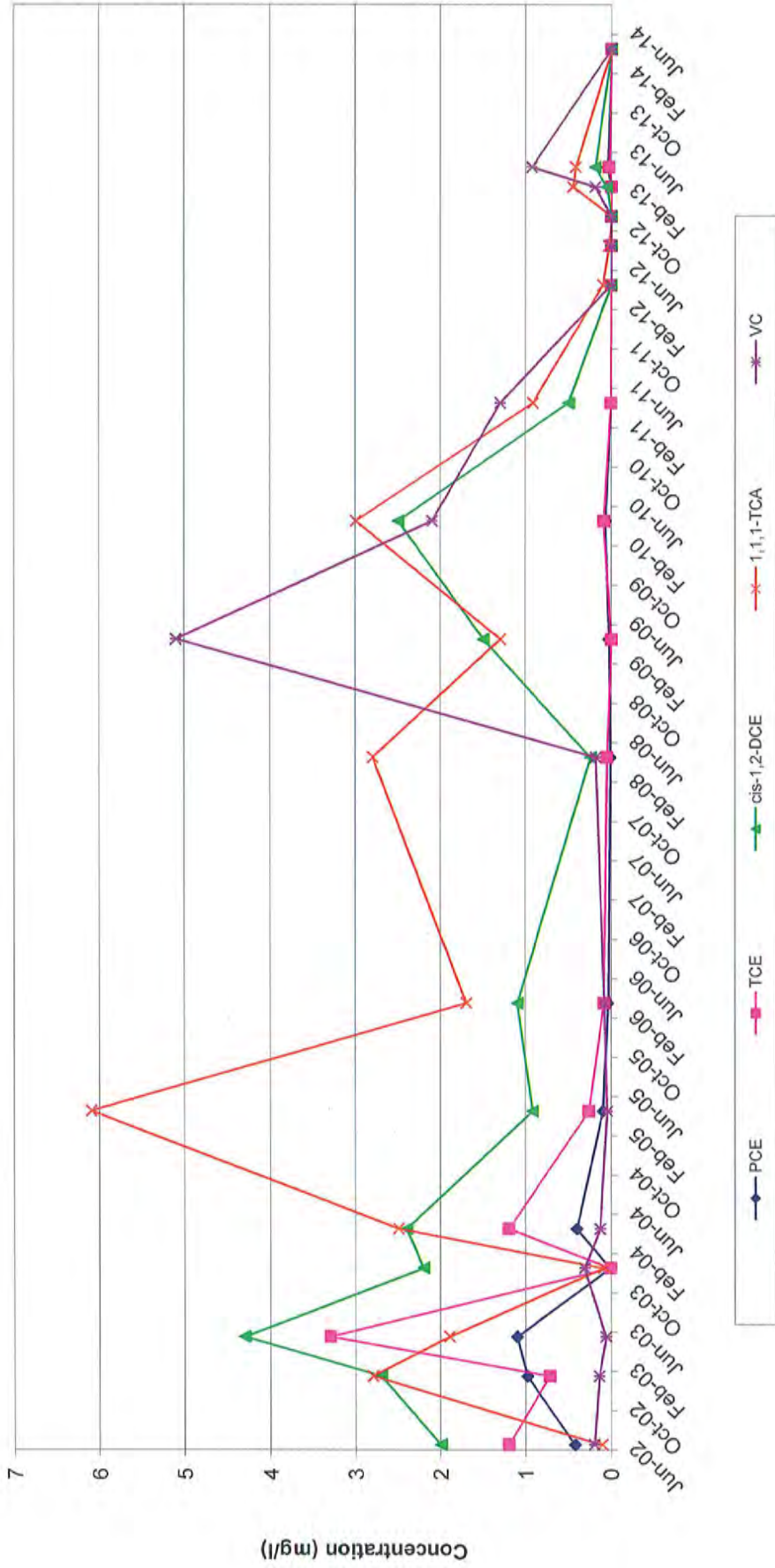
VOC Trends in Well AP-26-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: AP-26-DO is a deep overburden well just west of Building 1 where permanganate injection was conducted in 2004, 2012 and 2013. See end of appendix for additional notes.

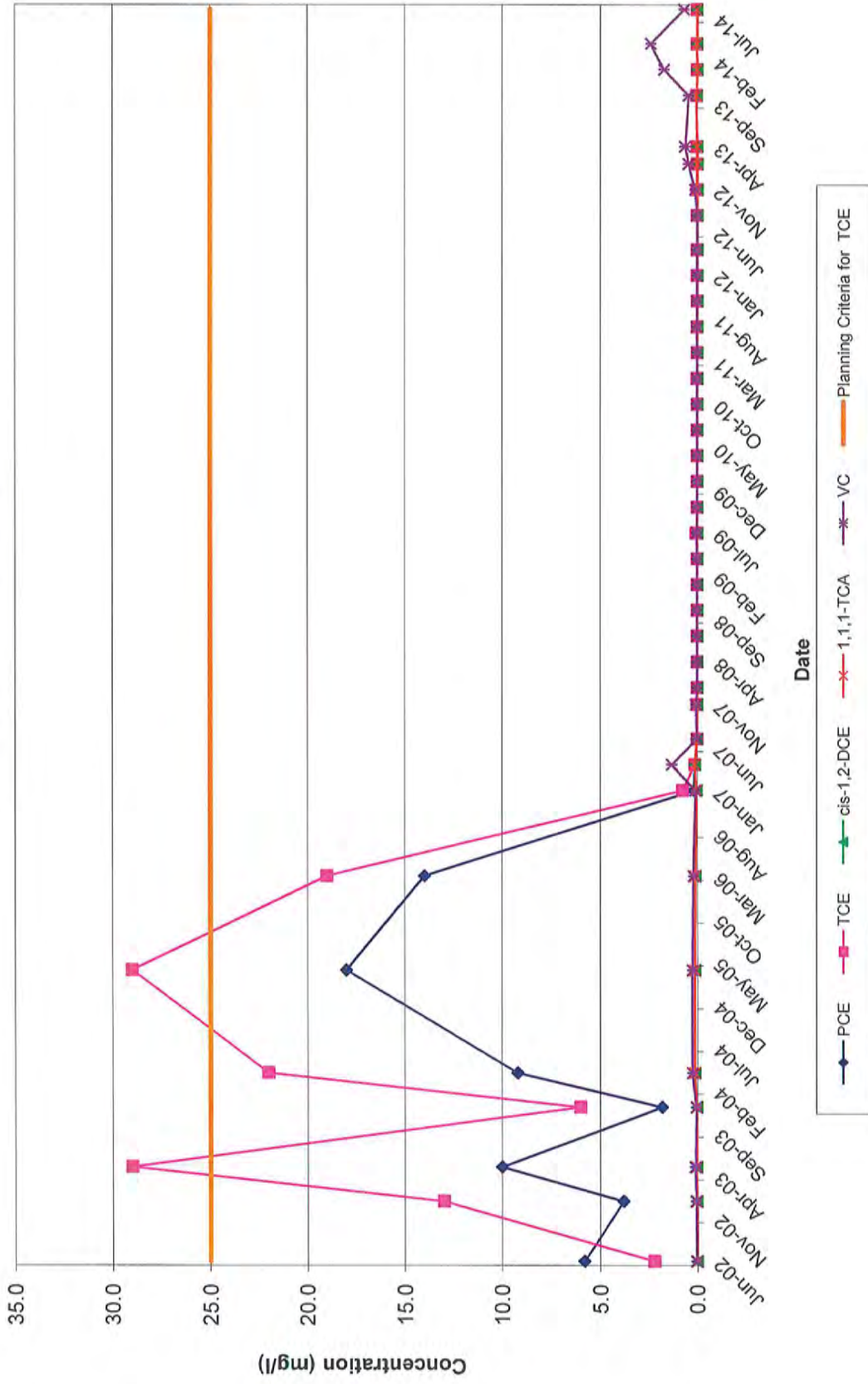


VOC Trends in Well MW-008  
Former Varian Facility Site  
Beverly, Massachusetts



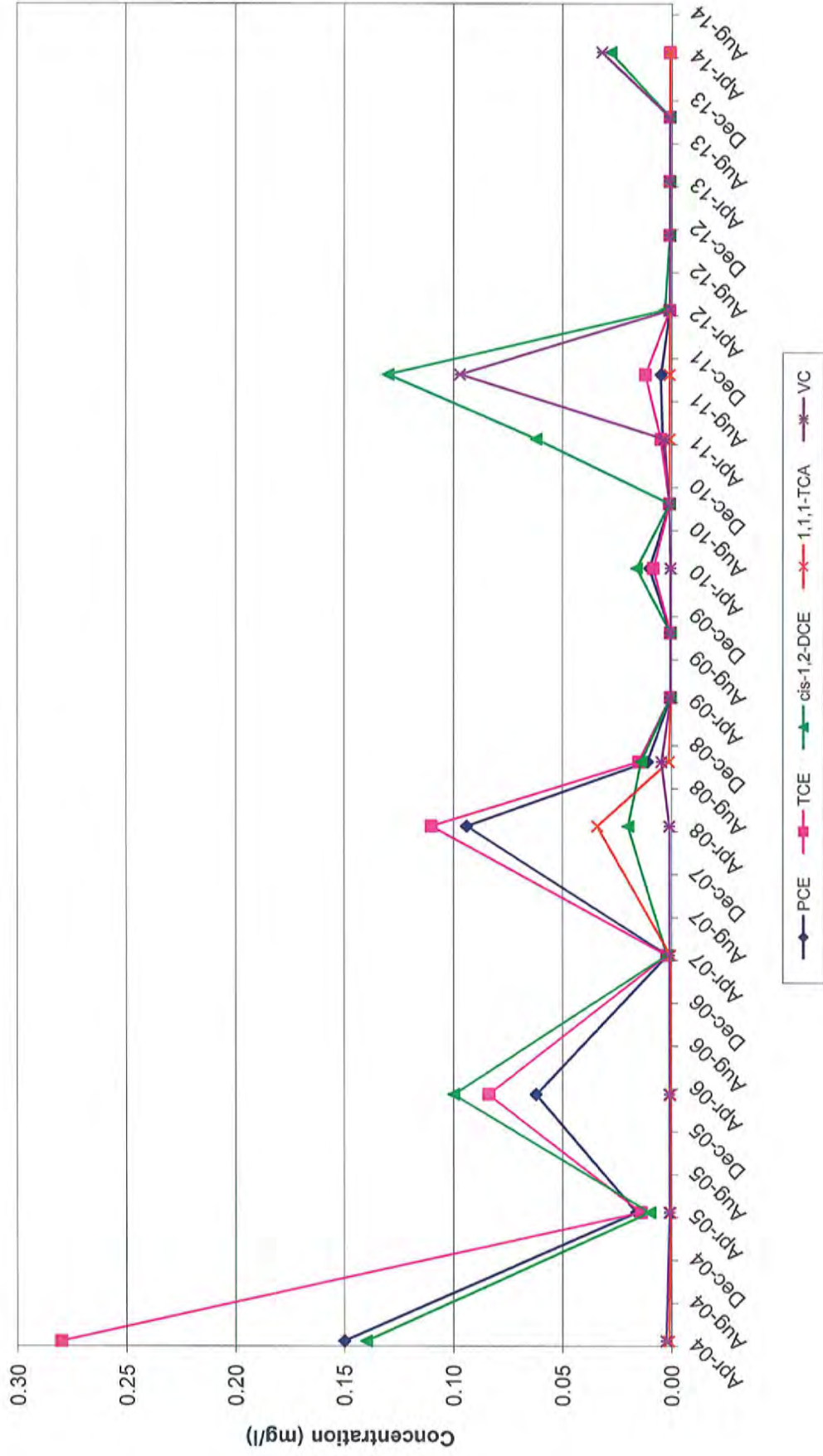
Notes: MW-8 is a shallow overbuden well located in the parking lot east of Buildings 6 and 9.  
See end of appendix for additional notes.

VOC Trends in Well MW-009  
Former Varian Facility Site  
Beverly, Massachusetts



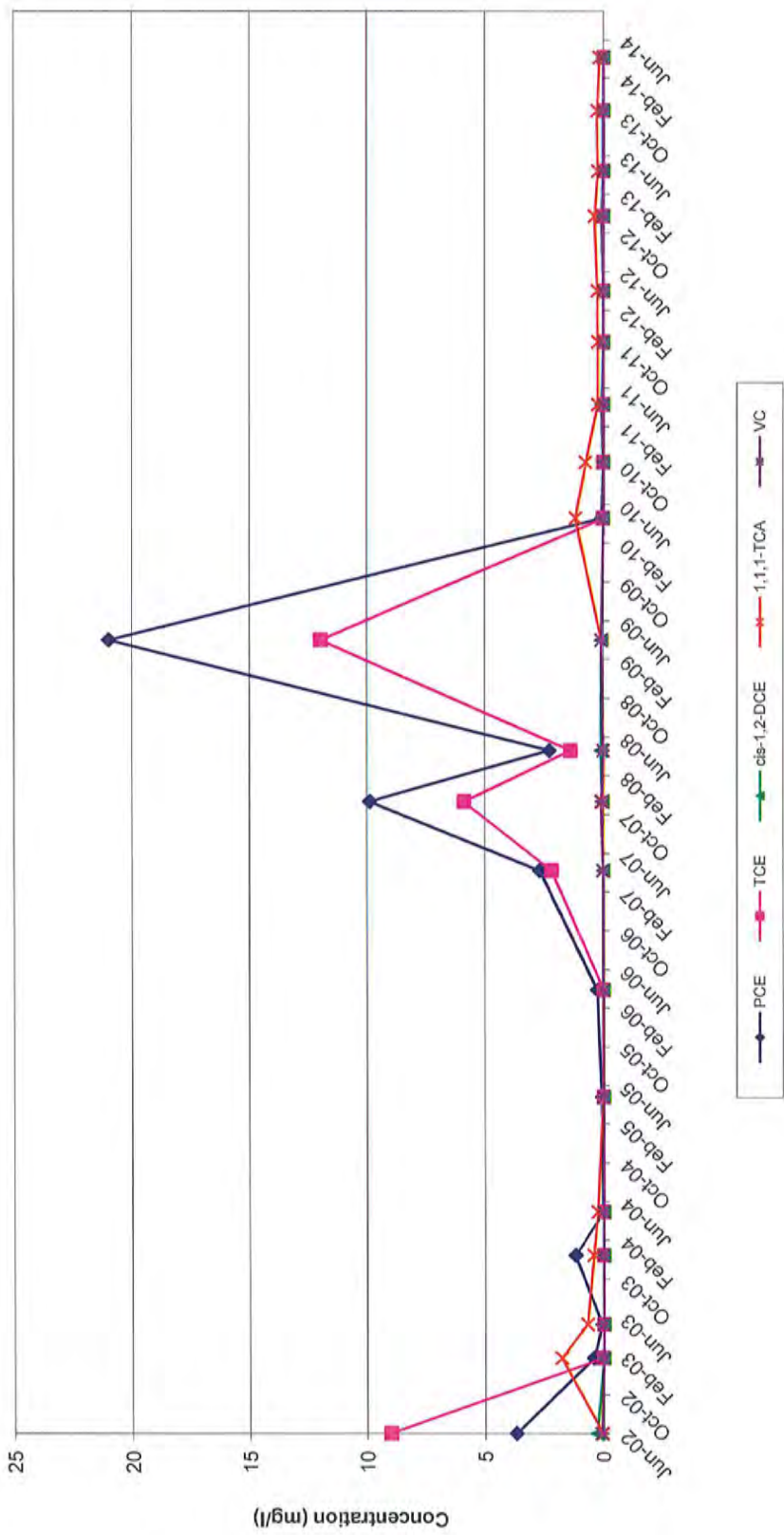
Notes: MW-9 is a shallow overburden well adjacent to Building 9 where bio-injection was conducted in 2006, 2007, 2009, and 2012. See end of appendix for additional notes.

VOC Trends in Well MW-009A  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: MW-9A is a shallow overburden well adjacent to Building 9.  
See end of appendix for additional notes.

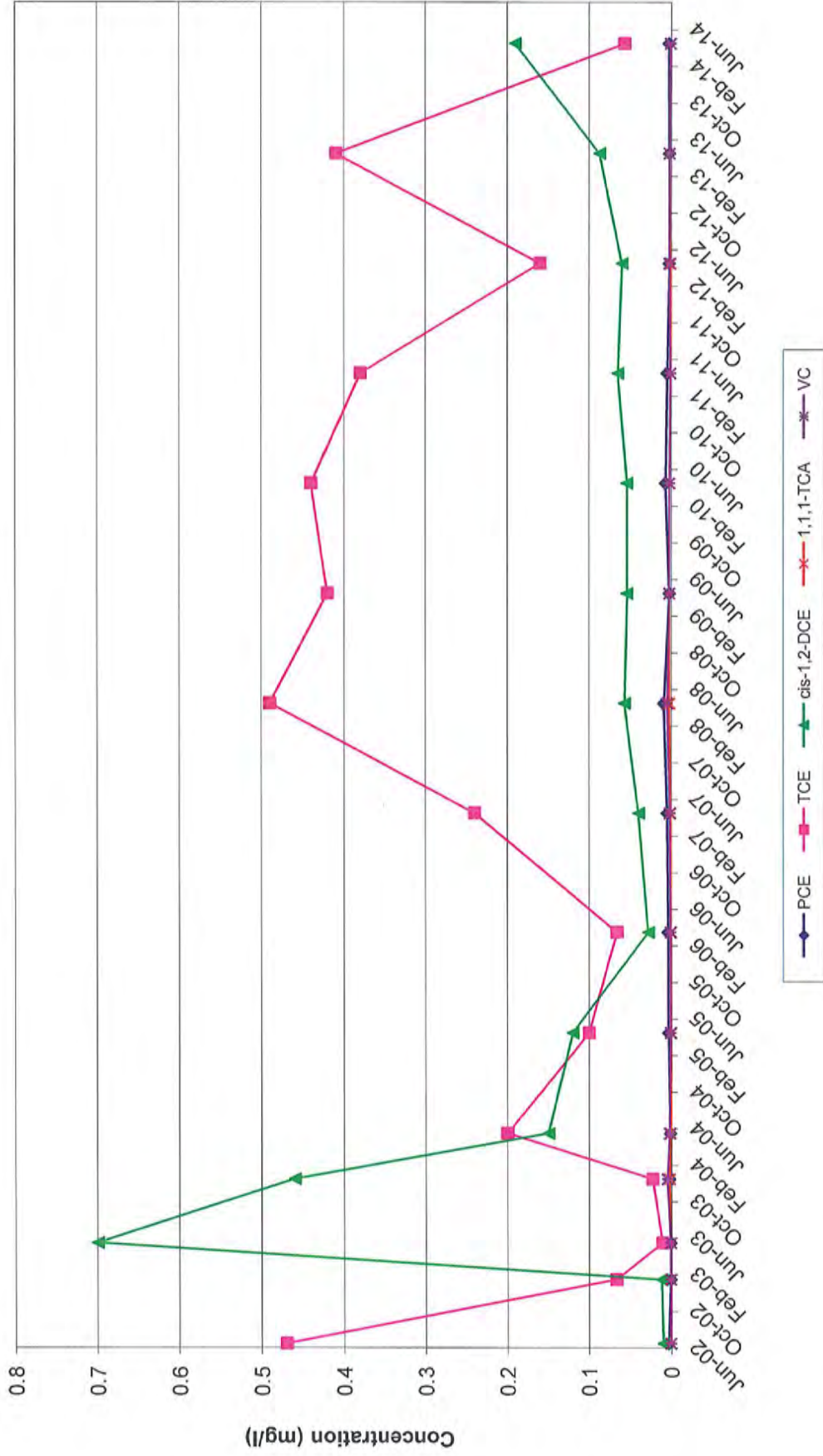
VOC Trends in Well MW-013  
Former Varian Facility Site  
Beverly, Massachusetts



Note: MW-13 is a deep overburden well located to the northeast of Building 3 where permanganate injection was conducted in 2002 and 2010-2011. See end of appendix for additional notes.



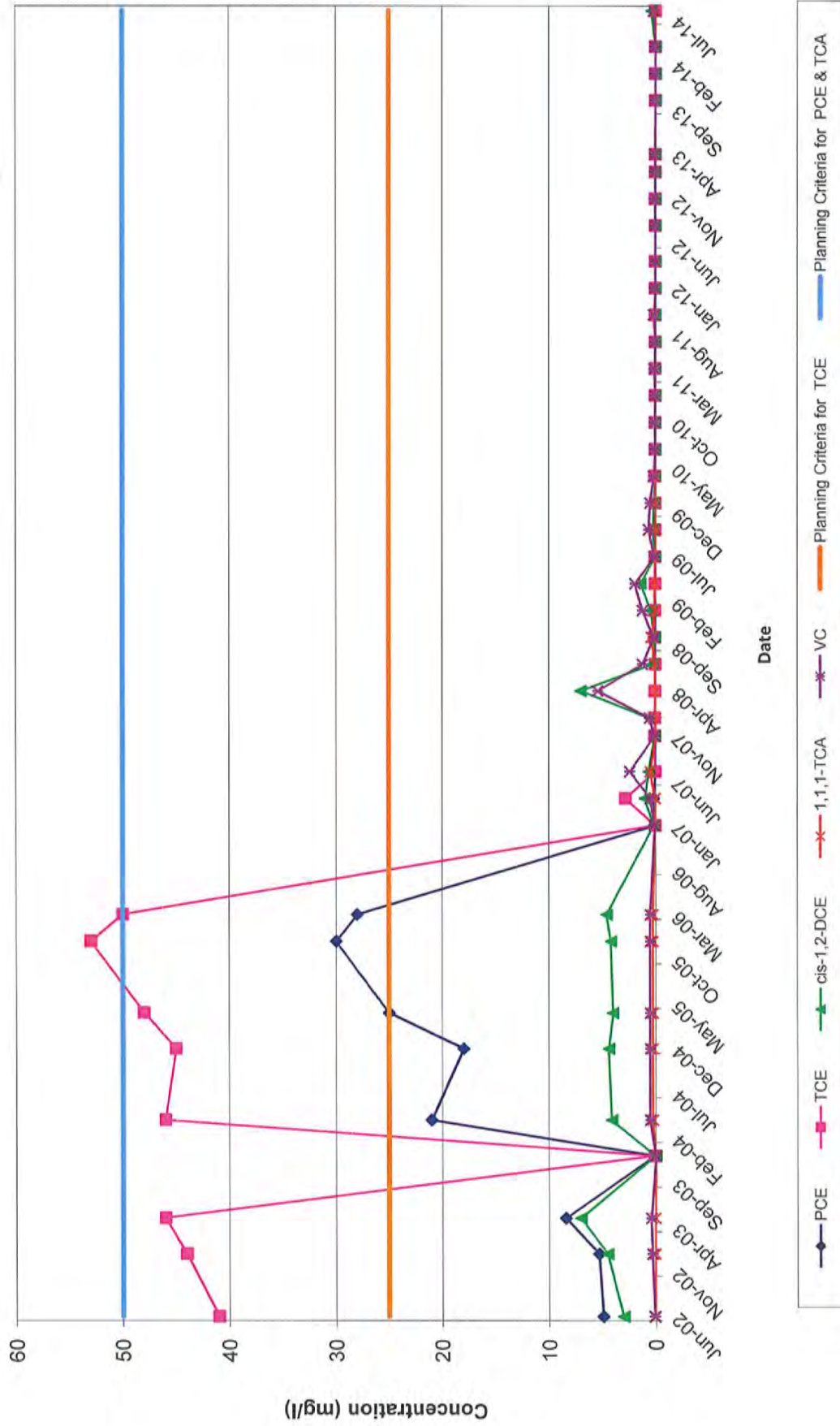
VOC Trends in Well MW-014A  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: MW-14A is a deep overburden well north of Building 1.  
See end of appendix for additional notes.

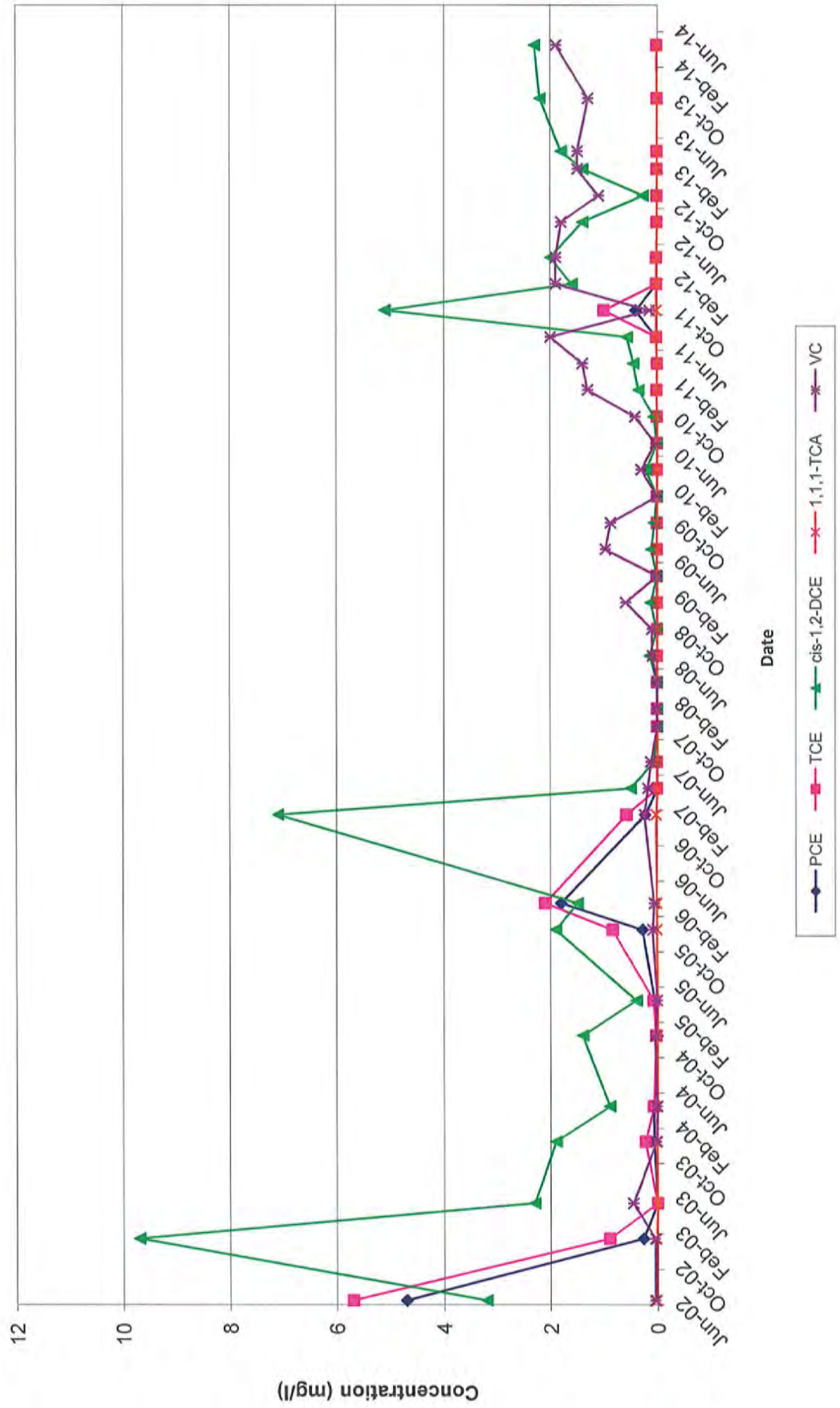


VOC Trends in Well OB-09-S  
Former Varian Facility Site  
Beverly, Massachusetts



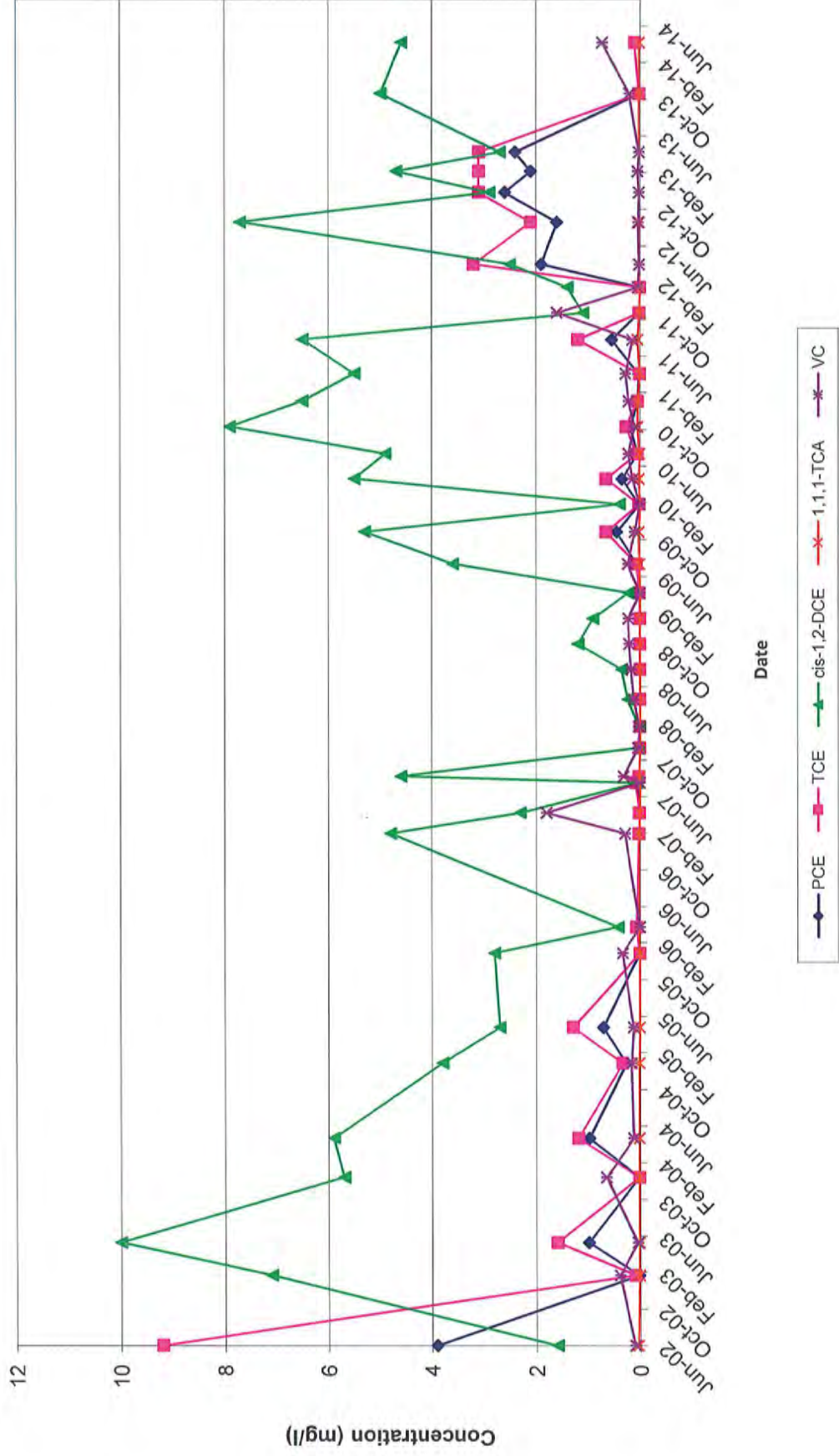
Note: OB-9-S is a shallow well east of Building 9 where bio-injection was completed from 2006 to 2012. See end of appendix for additional notes.

VOC Trends in Well OB-09-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Note: OB-9-DO is a deep overburden well east of Building 9.  
See end of appendix for additional notes.

VOC Trends in Well OB-09-BR  
 Former Varian Facility Site  
 Beverly, Massachusetts

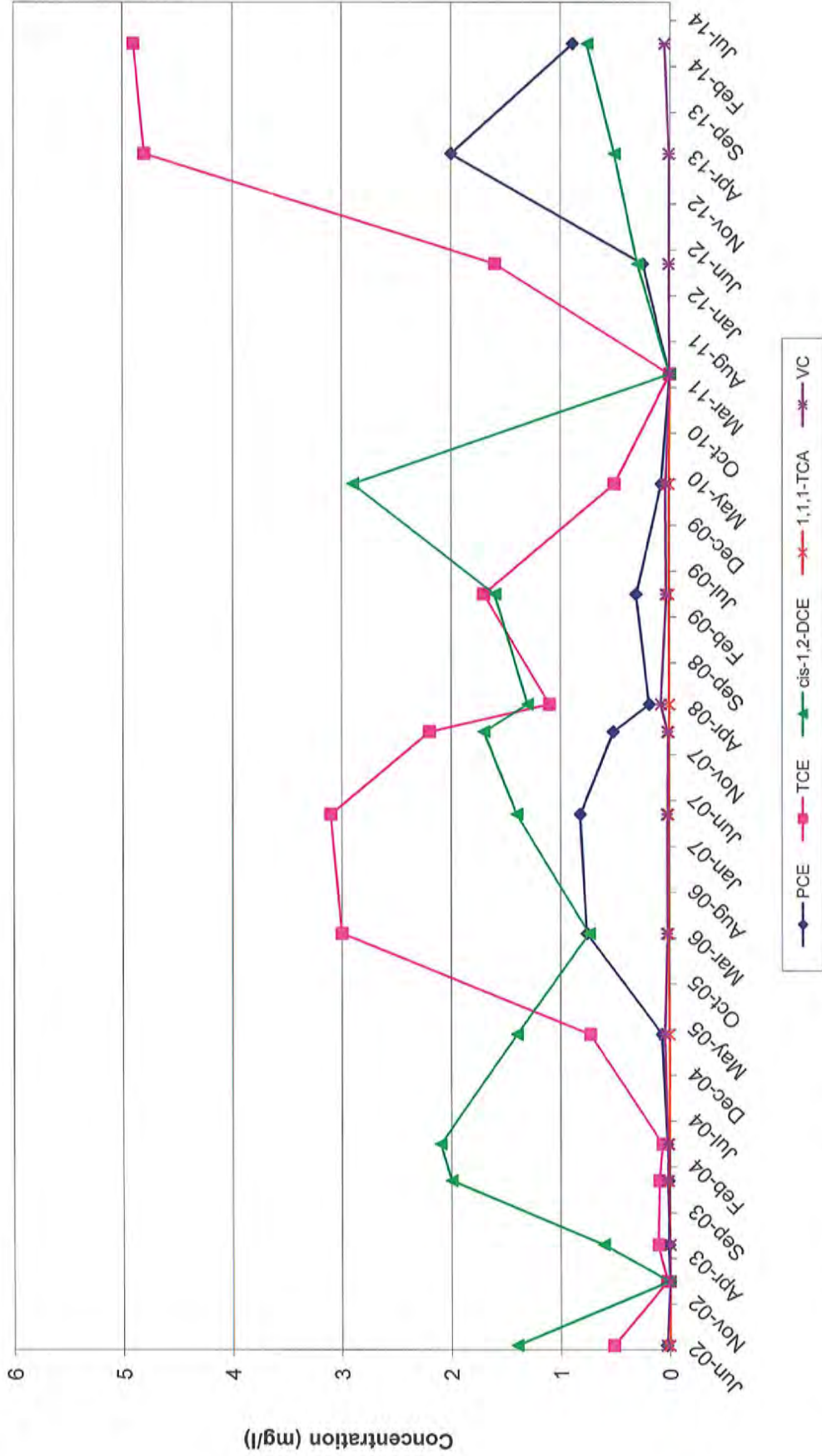


Note: OB-9-BR is a bedrock well east of Building 9.  
 See end of appendix for additional notes.



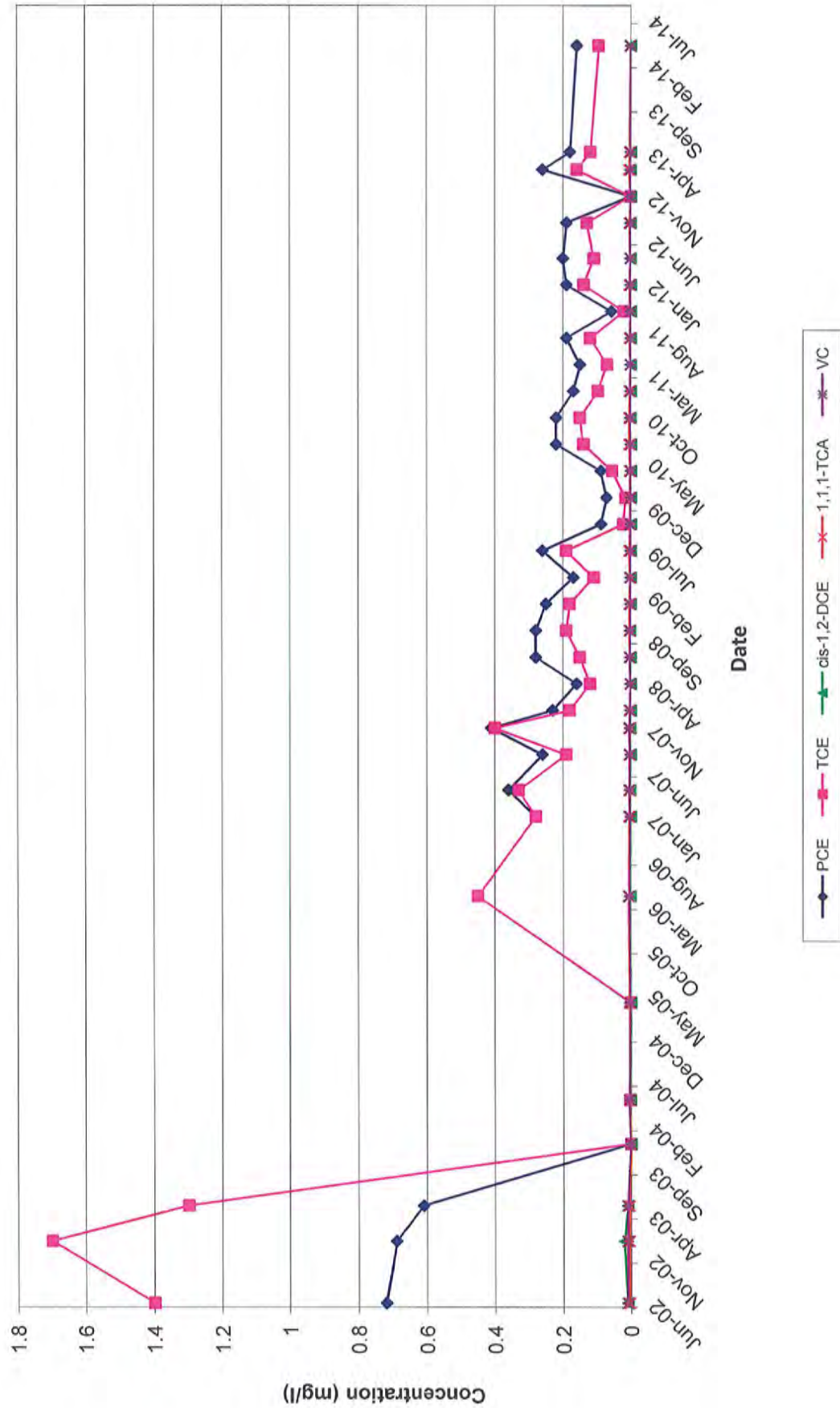


VOC Trends in Well OB-10-BR  
 Former Varian Facility Site  
 Beverly, Massachusetts



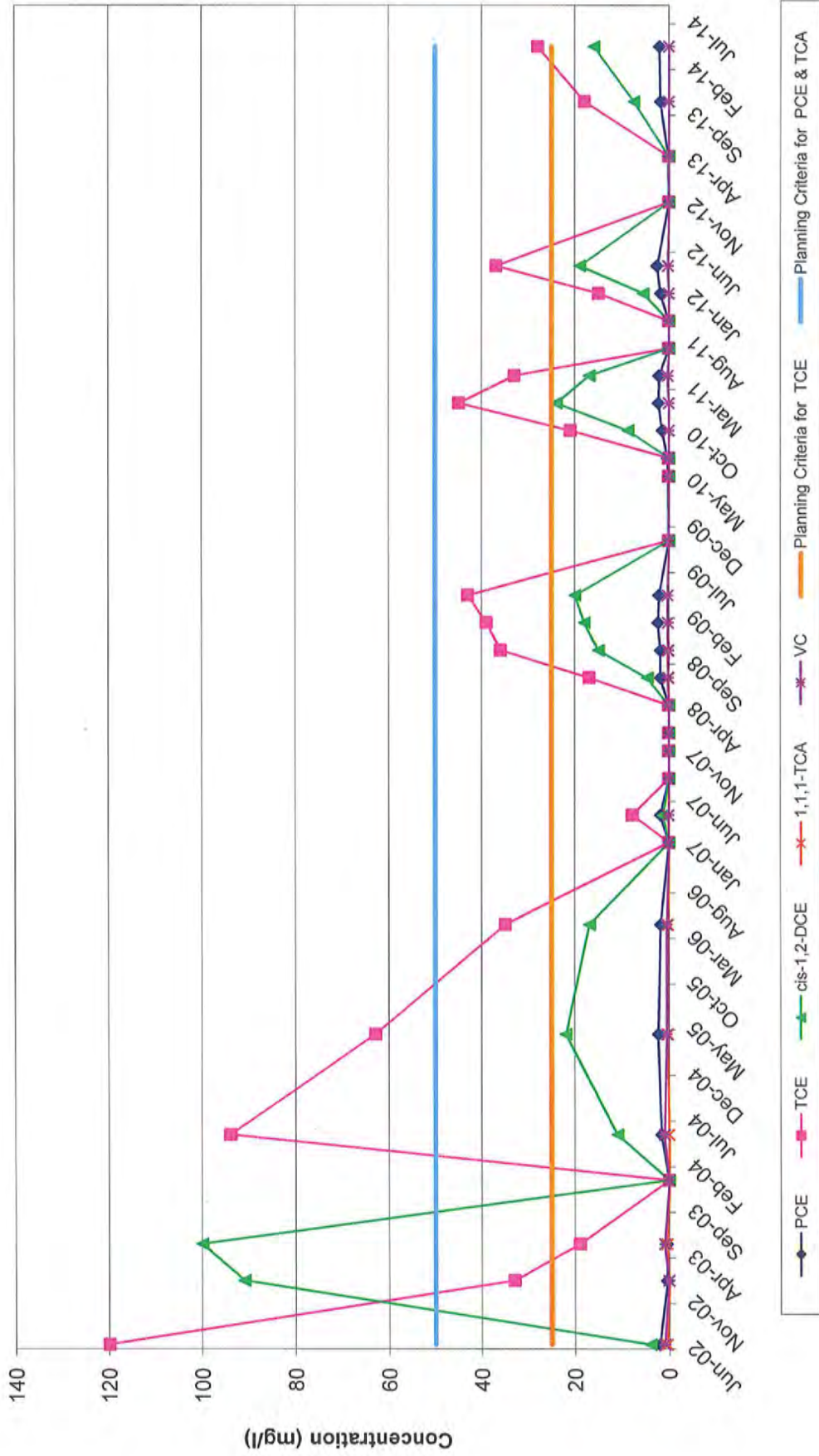
Note: OB-10-BR is a bedrock well adjacent to Building 4 where permanganate injection was completed in 2010. See end of appendix for additional notes.

VOC Trends in Well OB-12-S  
Former Varian Facility Site  
Beverly, Massachusetts



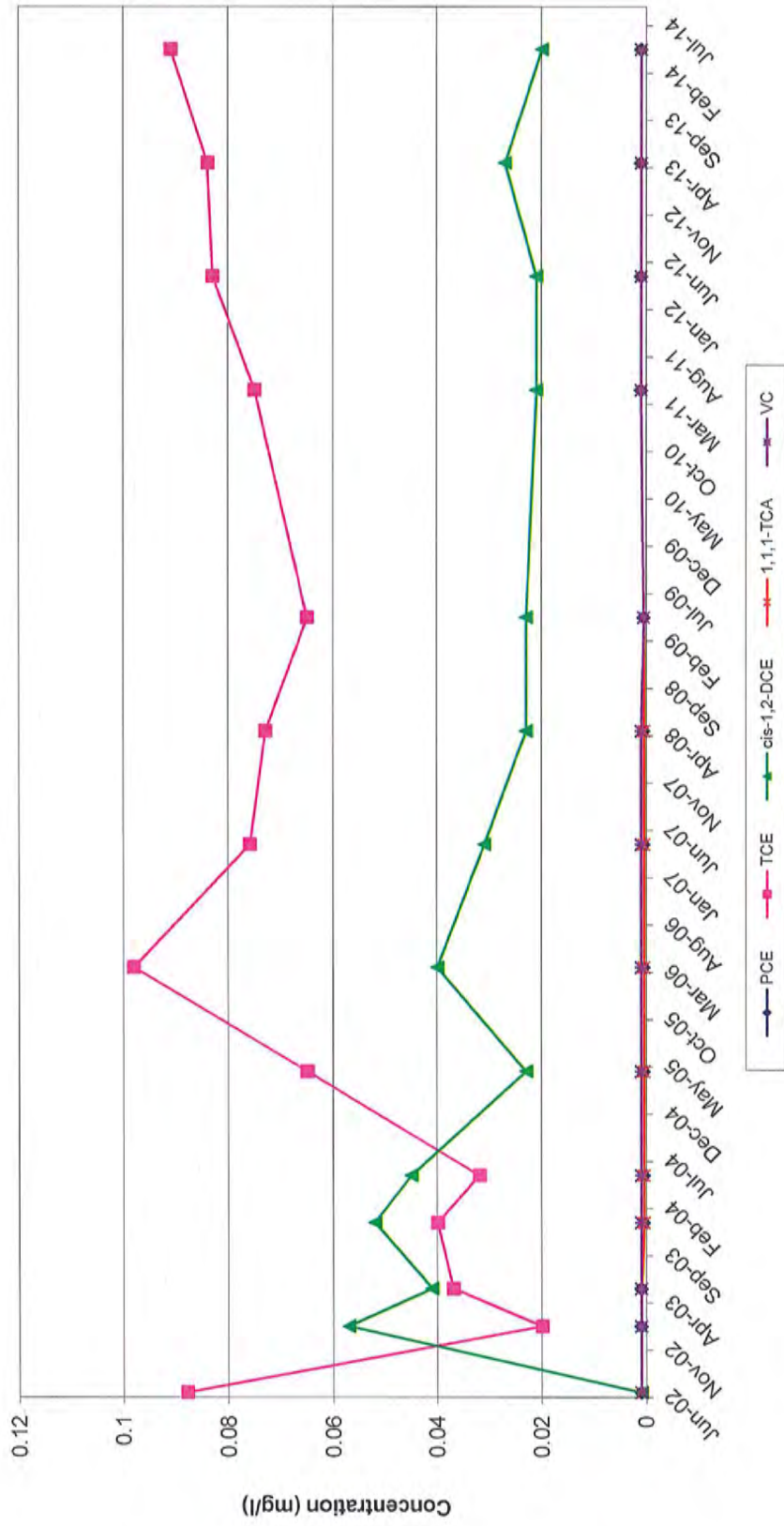
Note: OB-12-S is a shallow overburden well north of Building 3 where permanganate injection was completed in 2003. See end of appendix for additional notes.

VOC Trends in Well OB-12-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Note: OB-12-DO is a deep overburden well north of Building 3 where permanganate injection was completed 2003-2007, 2009, 2011, 2012, and 2014. See end of appendix for additional notes.

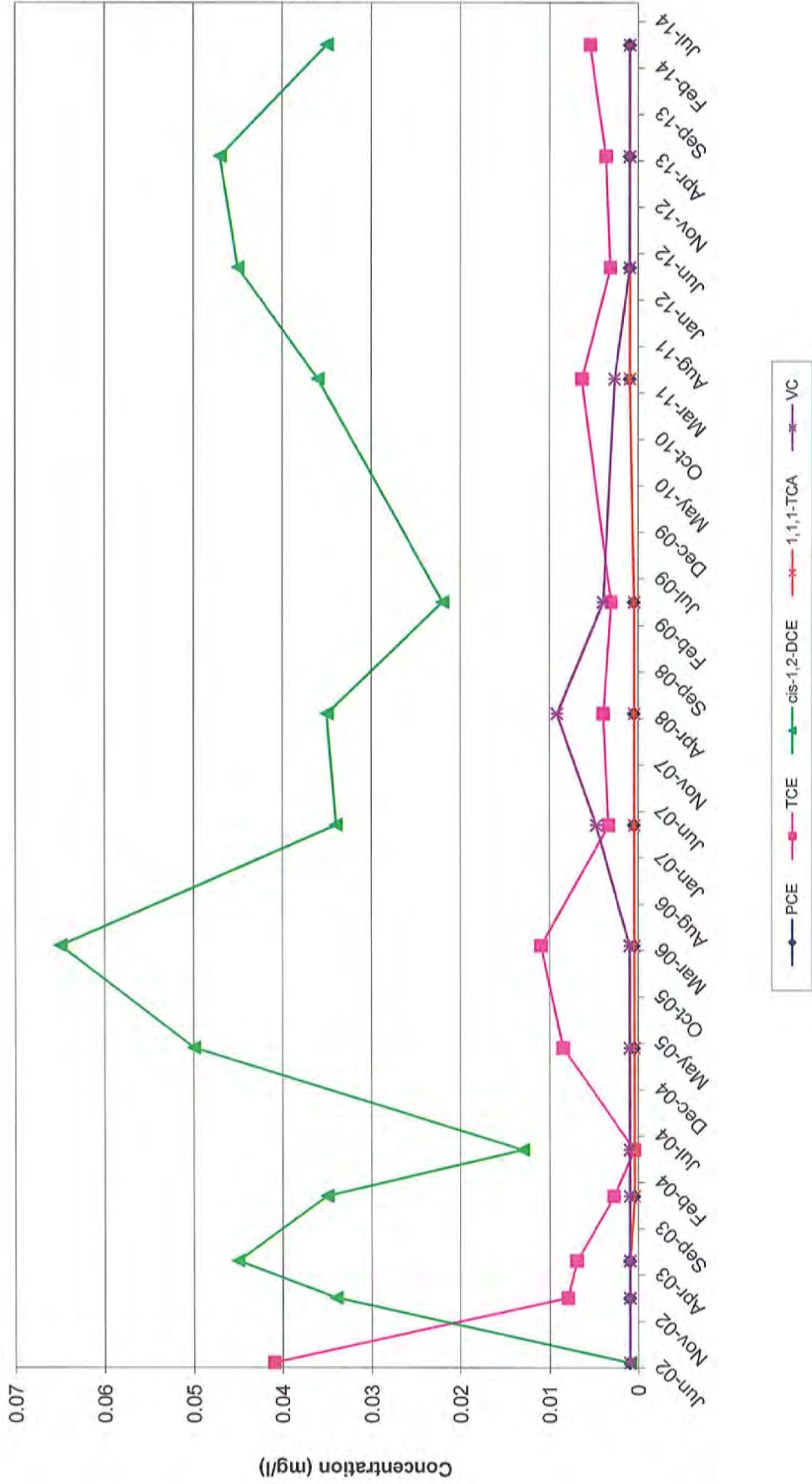
VOC Trends in Well OB-11-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: OB11-DO is a deep overburden well located north of Building 1.  
See end of appendix for additional notes.

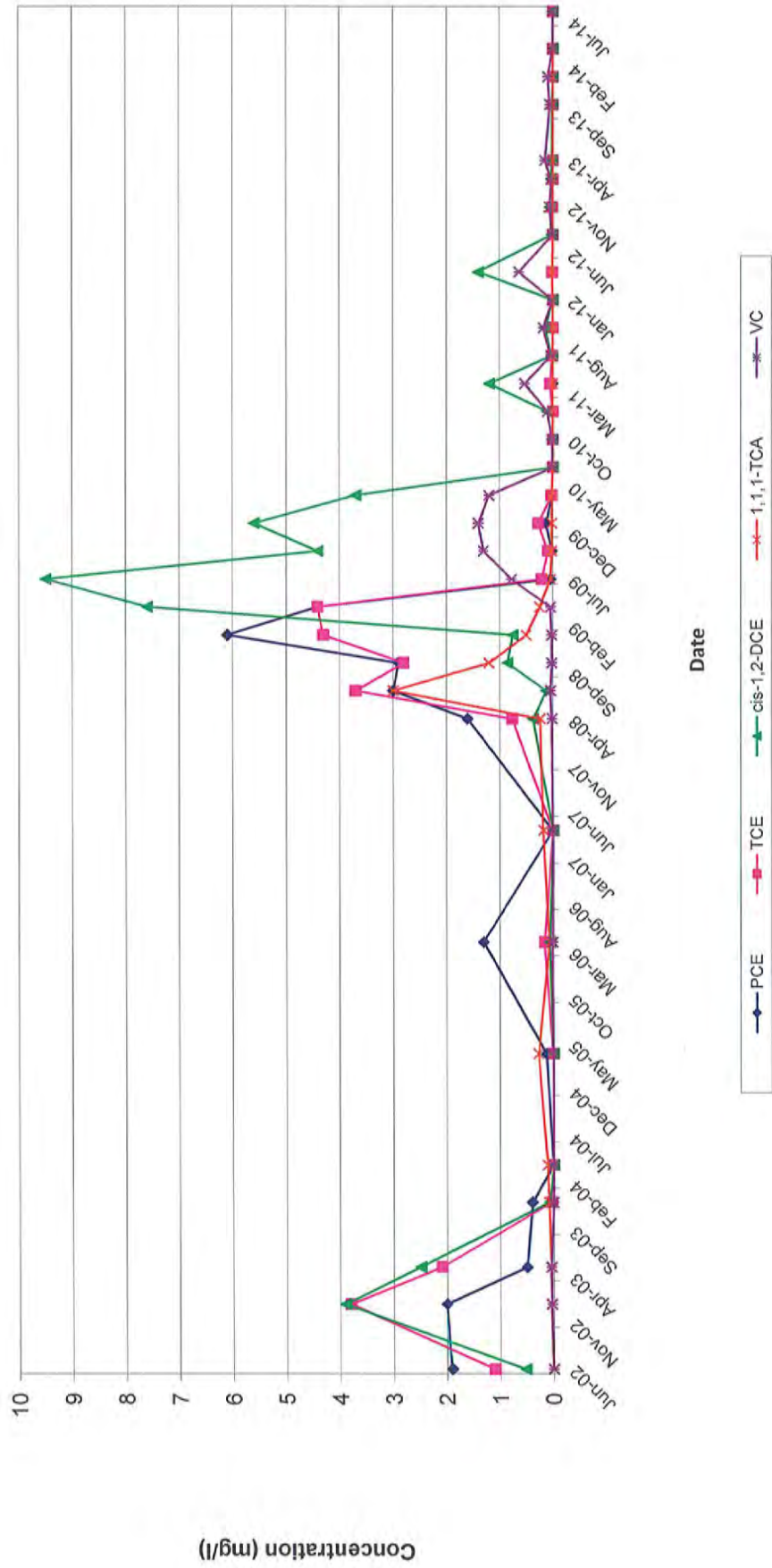


VOC Trends in Well OB-11-BR  
Former Varian Facility Site  
Beverly, Massachusetts



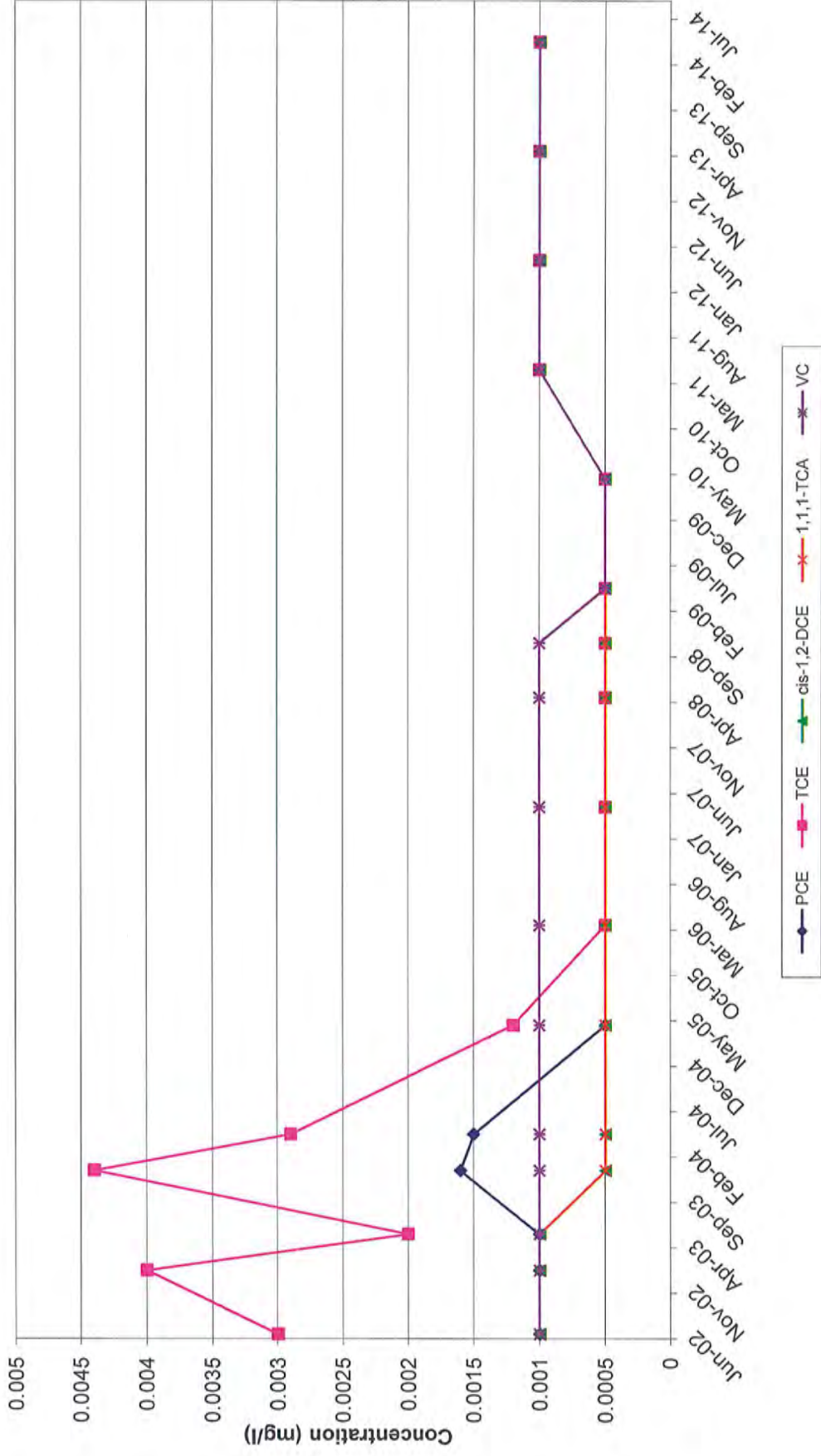
Note: OB-11-BR is a bedrock well north of Building 1.  
See end of appendix for additional notes.

VOC Trends in Well OB-15-S  
Former Varian Facility Site  
Beverly, Massachusetts



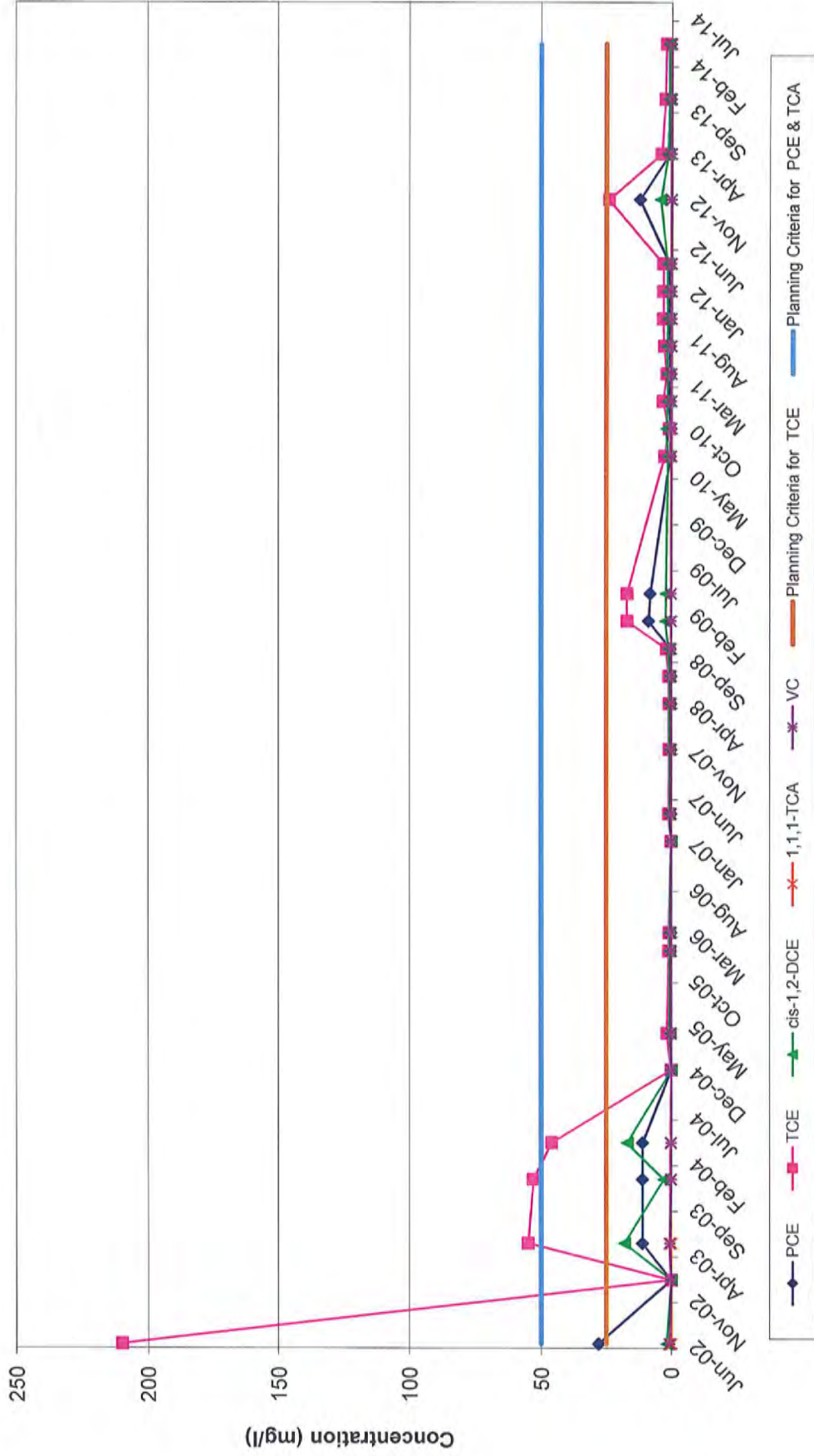
Notes: OB15-S is a shallow well northeast of Building 9 where bio-injection was conducted in 2009 through 2012. See end of appendix for additional notes.

VOC Trends in Well OB-19-S  
Former Varian Facility Site  
Beverly, Massachusetts



Note: OB-19-S is a shallow well west of Building 2.  
See end of appendix for additional notes.

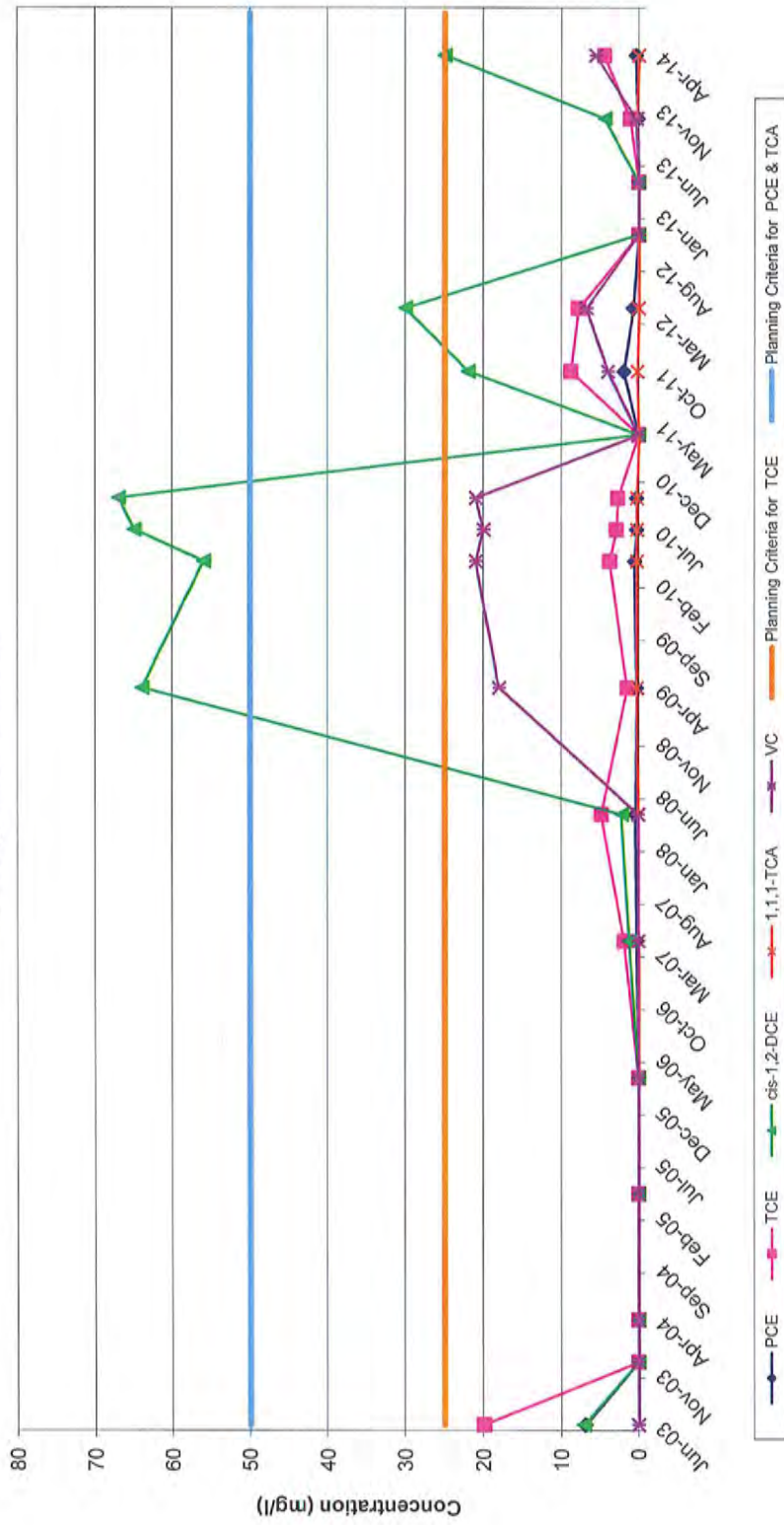
VOC Trends in Well OB-19-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Note: OB-19-DO is a deep overburden well west of Building 2 where permanganate injection was conducted from 2002-2005. See end of appendix for additional notes.



VOC Trends in Well OB-25-BR  
 Former Varian Facility Site  
 Beverly, Massachusetts



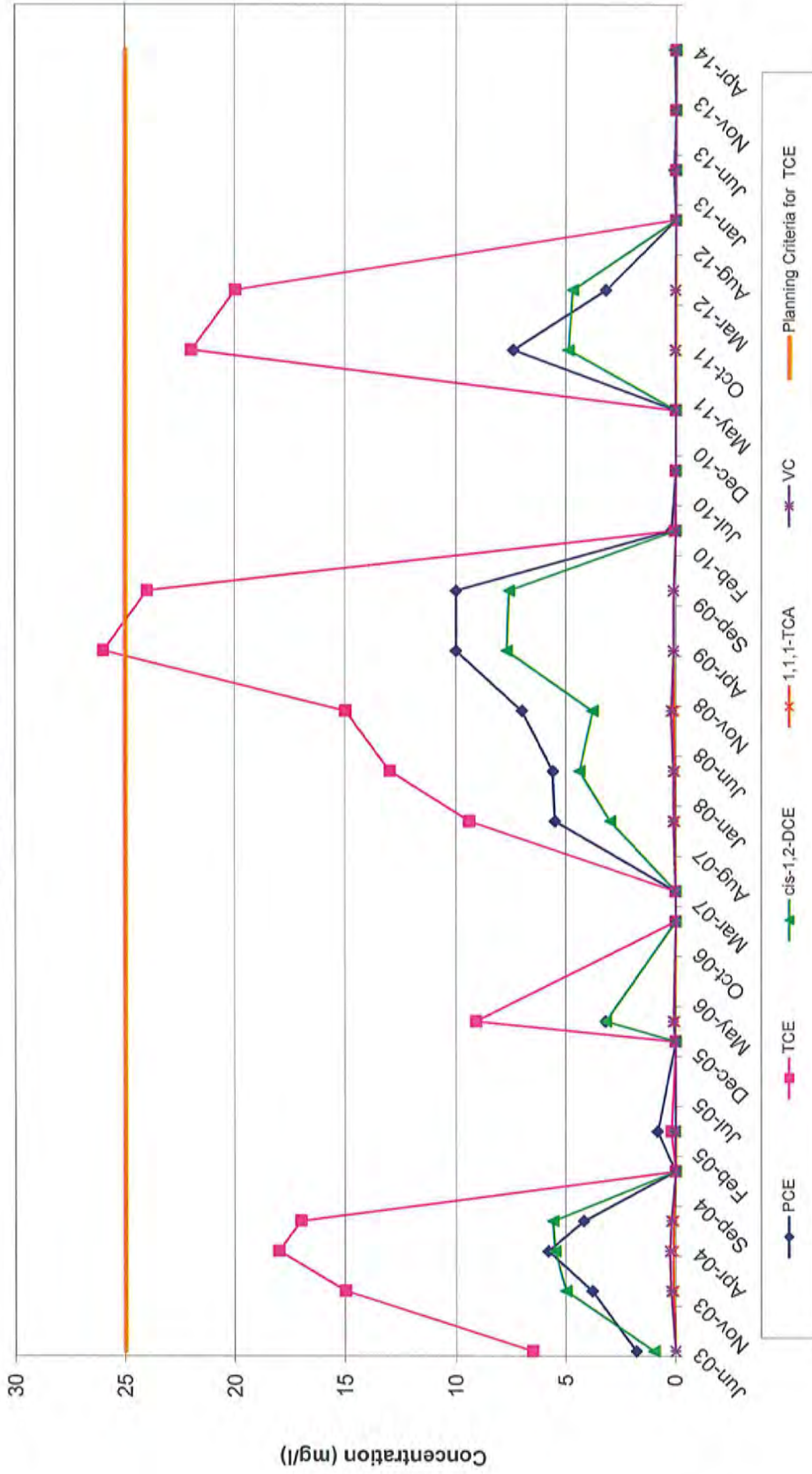
Notes: OB-25-BR is a bedrock well located just west of Building 1 where permanganate injection was conducted in 2003, 2010, 2012, and 2014. See end of appendix for additional notes.

VOC Trends in Well OB-25-DO  
Former Varian Facility Site  
Beverly, Massachusetts



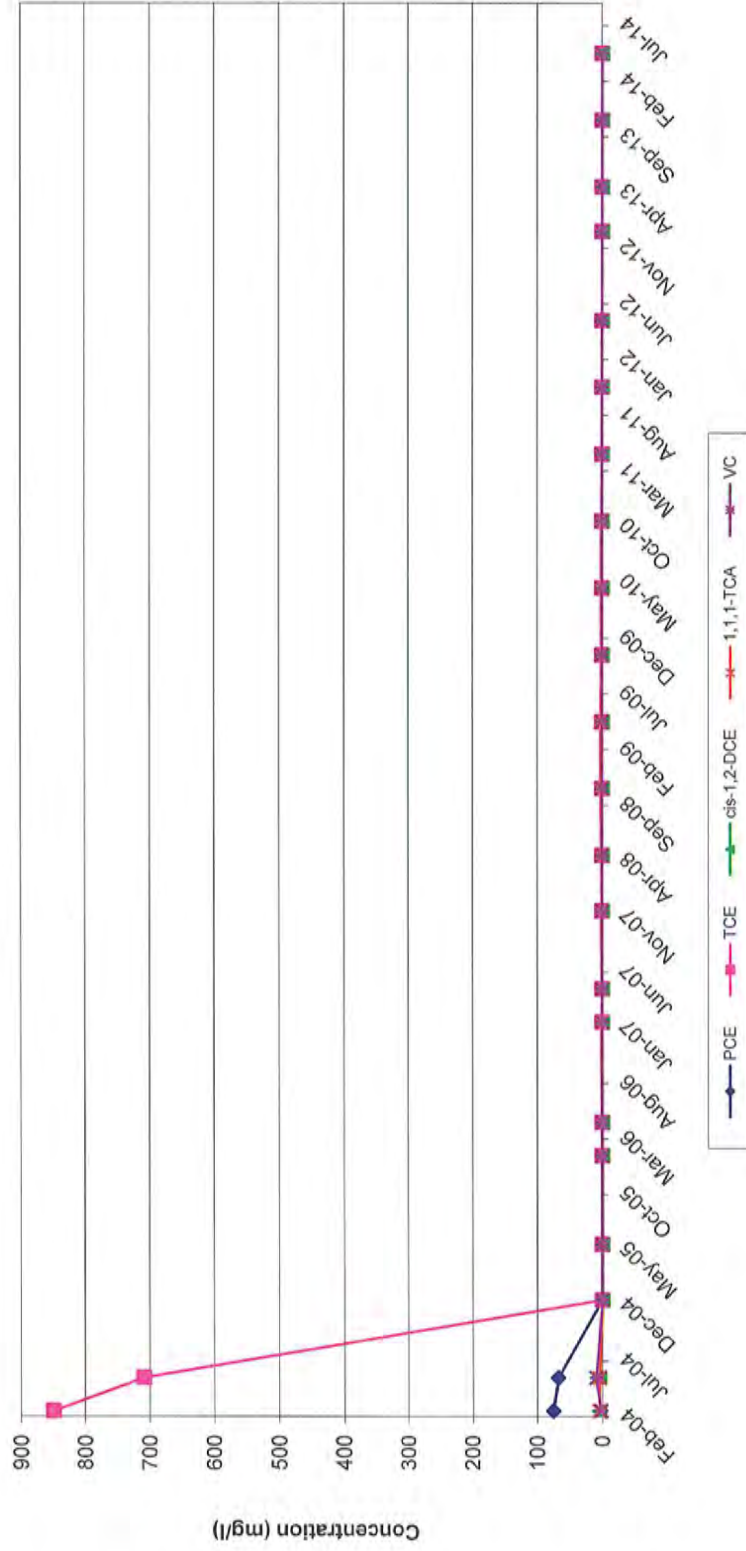
Note: OB-25-DO is a deep overburden well located west of Building 1.  
See end of appendix for additional notes.

VOC Trends in Well OB-27-BR  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: OB-27-BR is a bedrock well located west of Building 7 where permanganate injection was conducted in 2004-2007 and in 2010-2012. See end of appendix for additional notes.

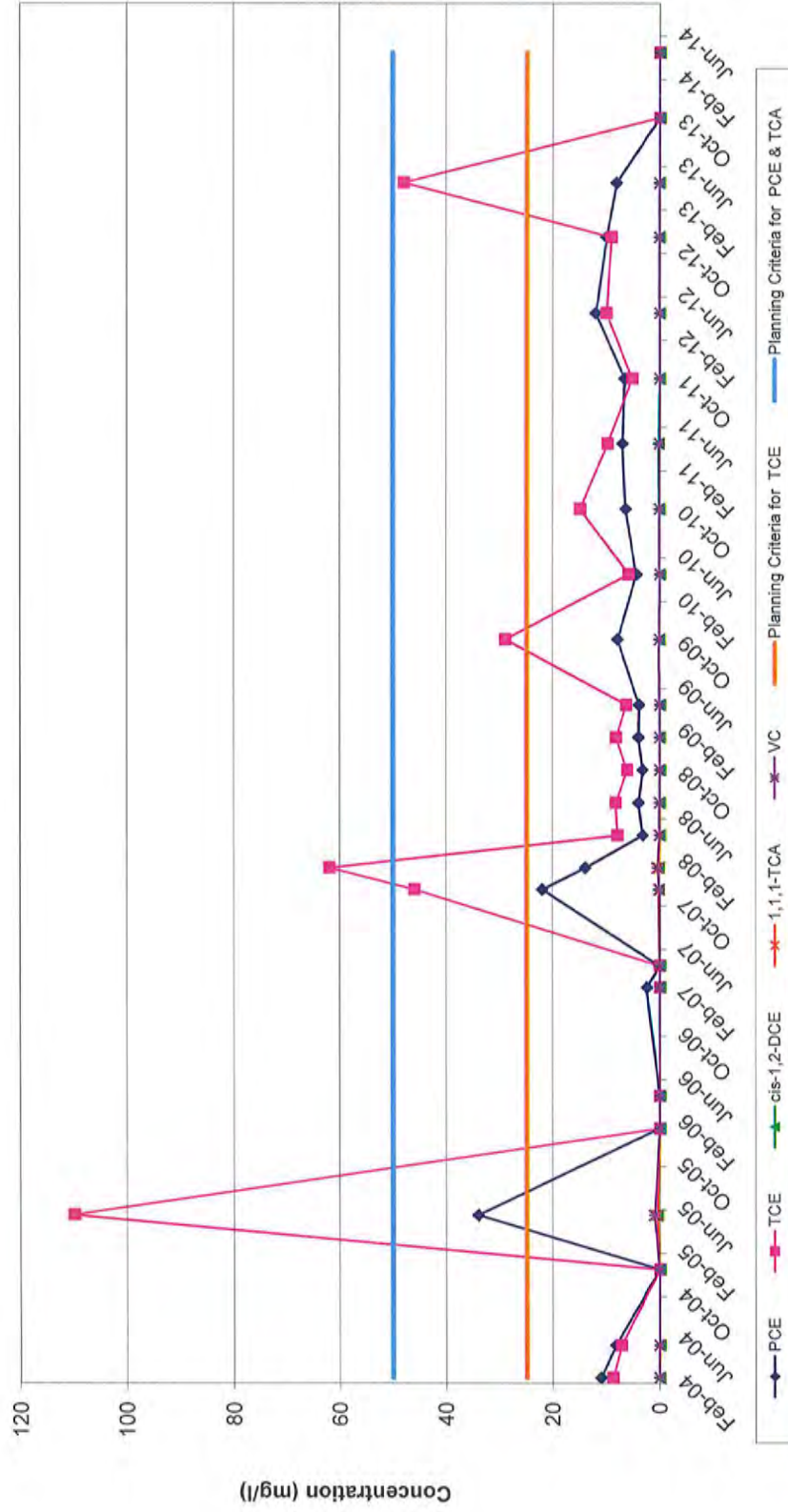
VOC Trends in Well OB-32-DO  
 Former Varian Facility Site  
 Beverly, Massachusetts



Notes: OB32-DO is a deep overburden well just north of Building 3 where injection was conducted in 2004.  
 See end of appendix for additional notes.

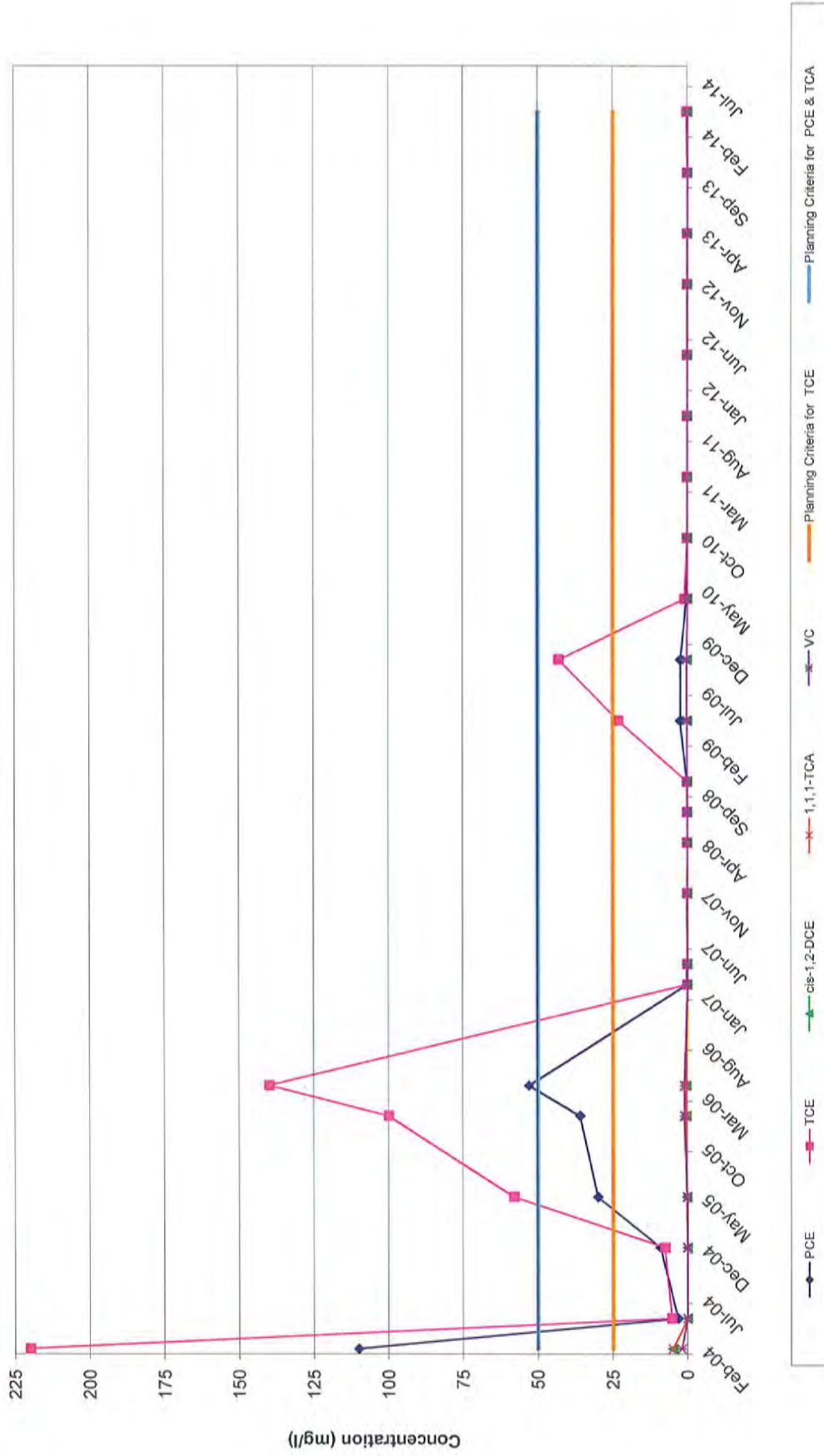


VOC Trends in Well OB-36-DO  
 Former Varian Facility Site  
 Beverly, Massachusetts



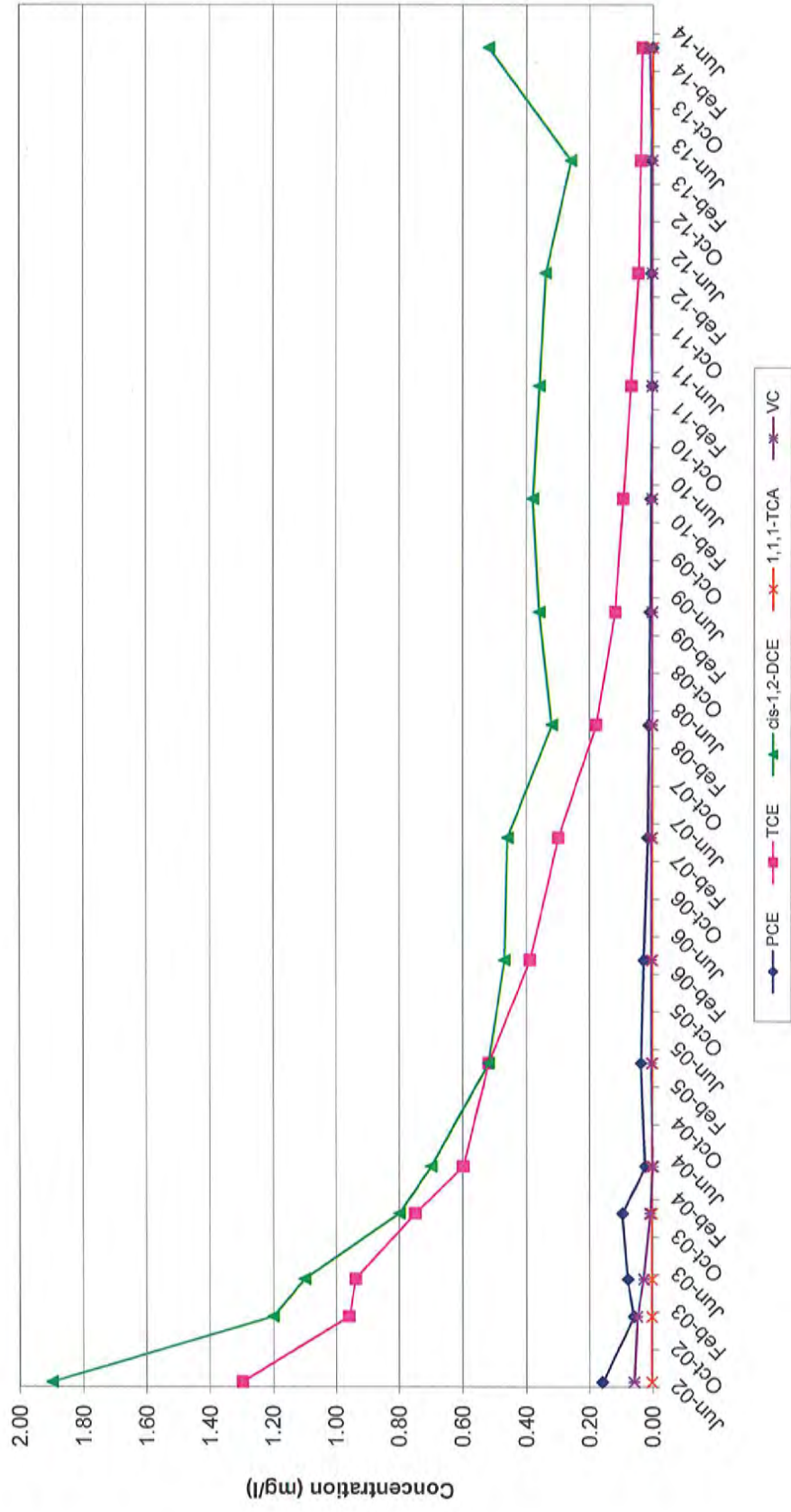
Note: OB-36-DO is a deep overburden well inside the Building 6 loading dock where permanganate injection was conducted in 2004-2005 and 2013. See end of appendix for additional notes.

VOC Trends in Well OB-37-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: OB37-DO is a deep overburden well inside Building 6. Permanganate injection conducted in 2006, 2007 and 2010-2011. See end of appendix for additional notes.

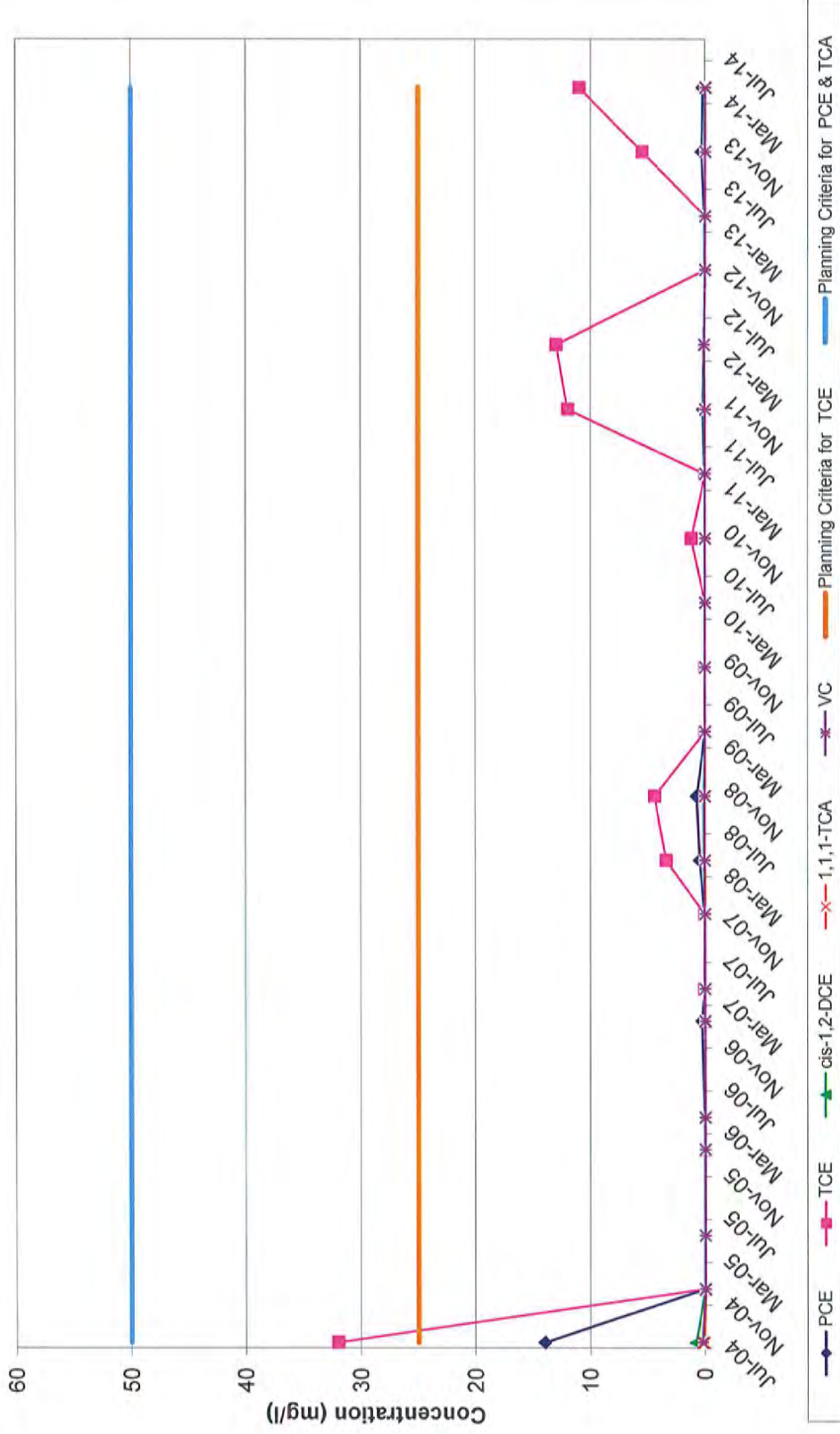
VOC Trends in Well RW-22  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: RW-22 is a bedrock well located north of Building 1.  
See end of appendix for additional notes.

**BUILDING 5 TREATMENT AREA**

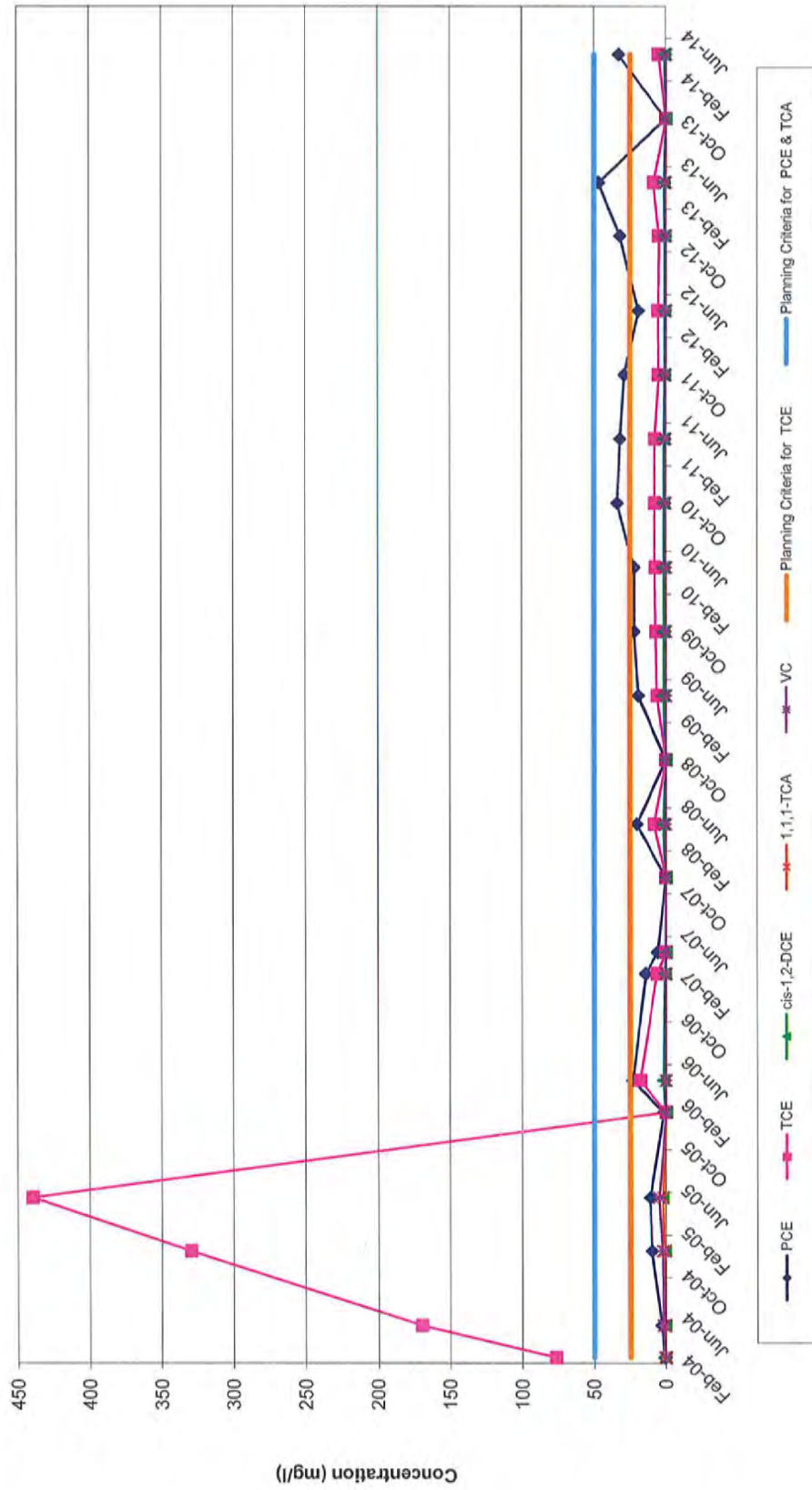
VOC Trends in Well AP-27-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Note: AP-27-DO is a deep overburden well east of Building 5 where permanganate injection was conducted in 2004, 2005 and 2012. See end of appendix for additional notes.



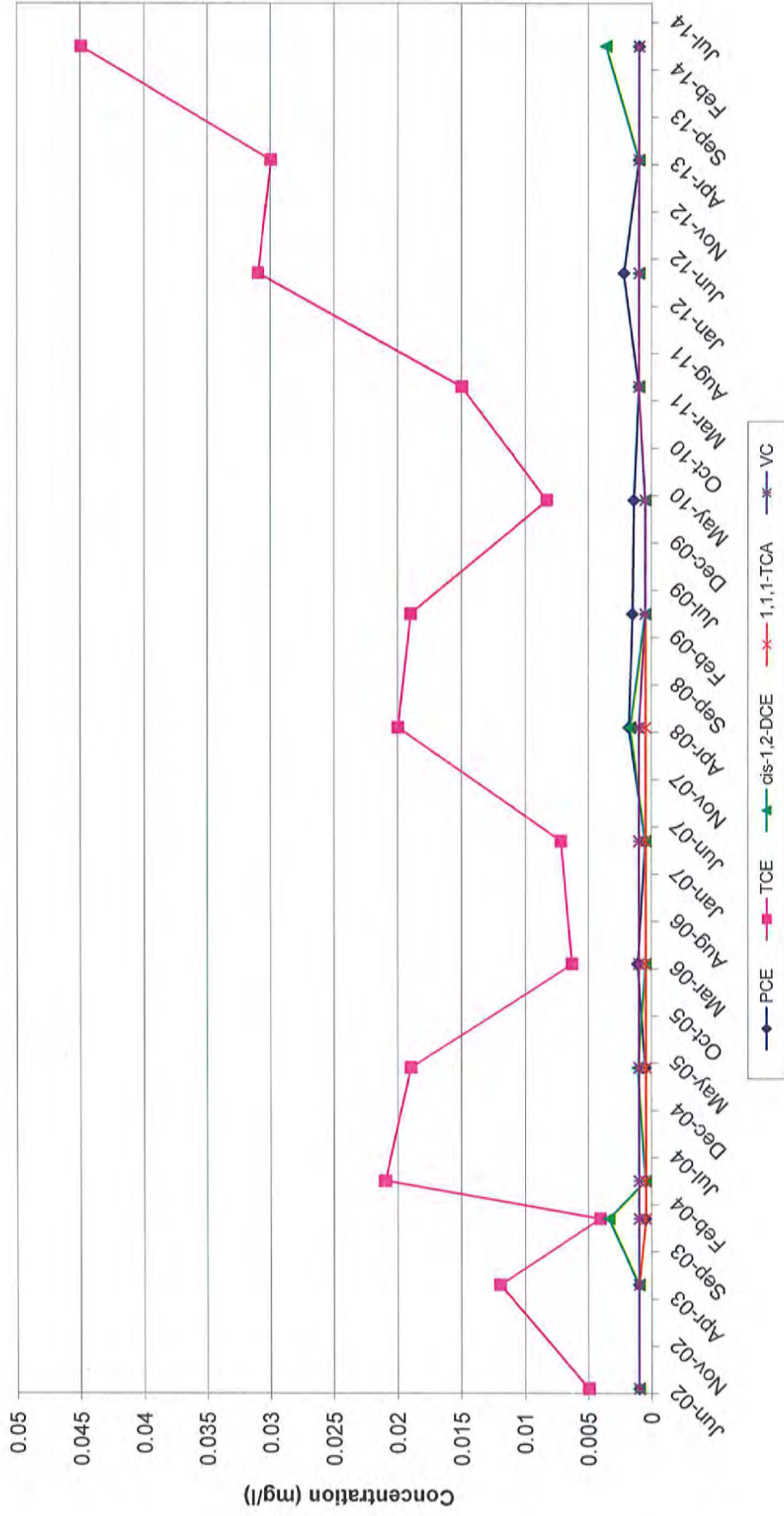
VOC Trends in Well OB-35-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: OB35-DO is a deep overburden well inside Building 5 where permanganate injection was conducted from 2005 to 2008 and 2010 to 2014. See end of appendix for additional notes.

PSL 10 TREATMENT AREA

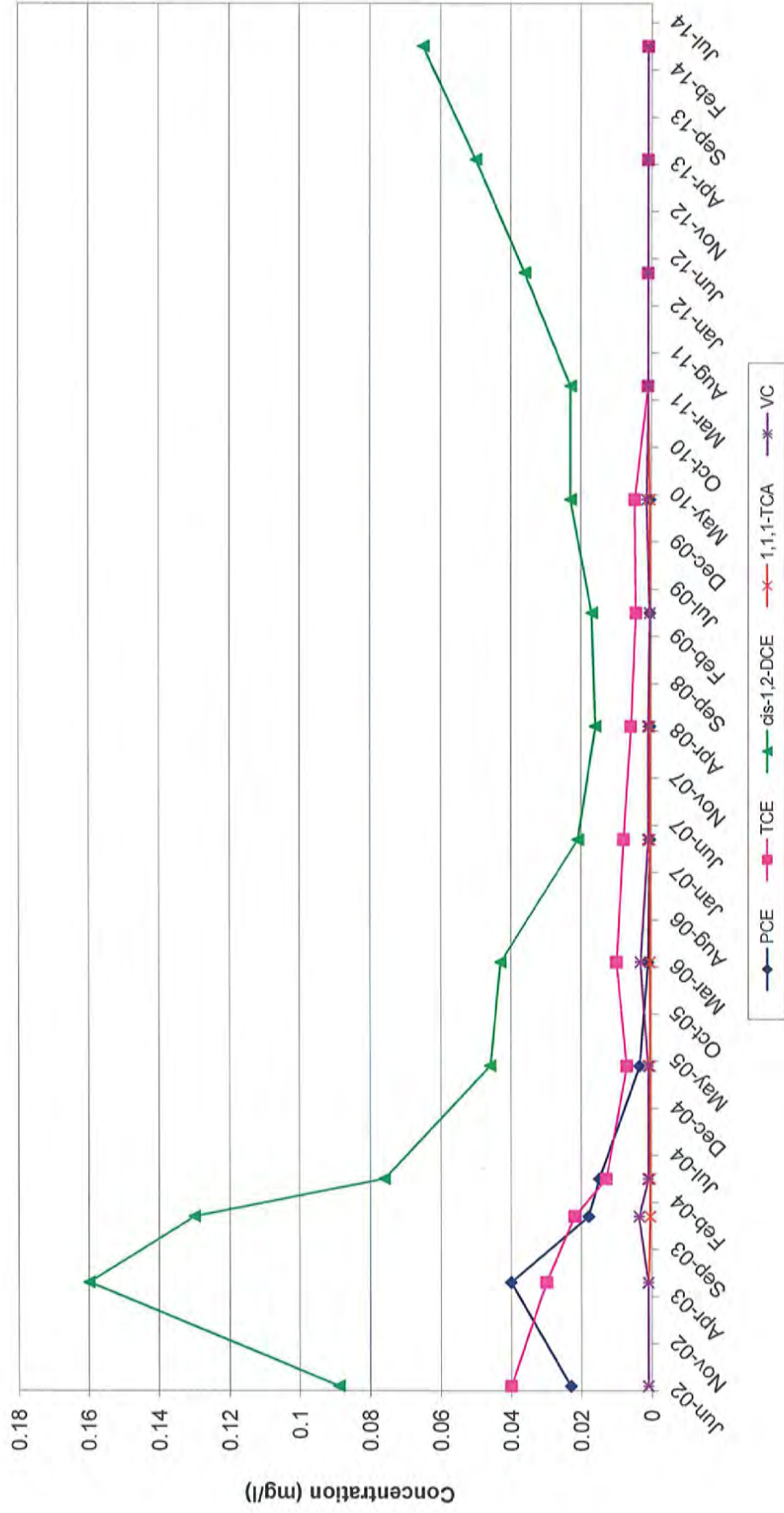
VOC Trends in Well CL04-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: CL4-DO is a deep overburden well located just east of the 31 Tozer Road Treatment Area. See end of appendix for additional notes.

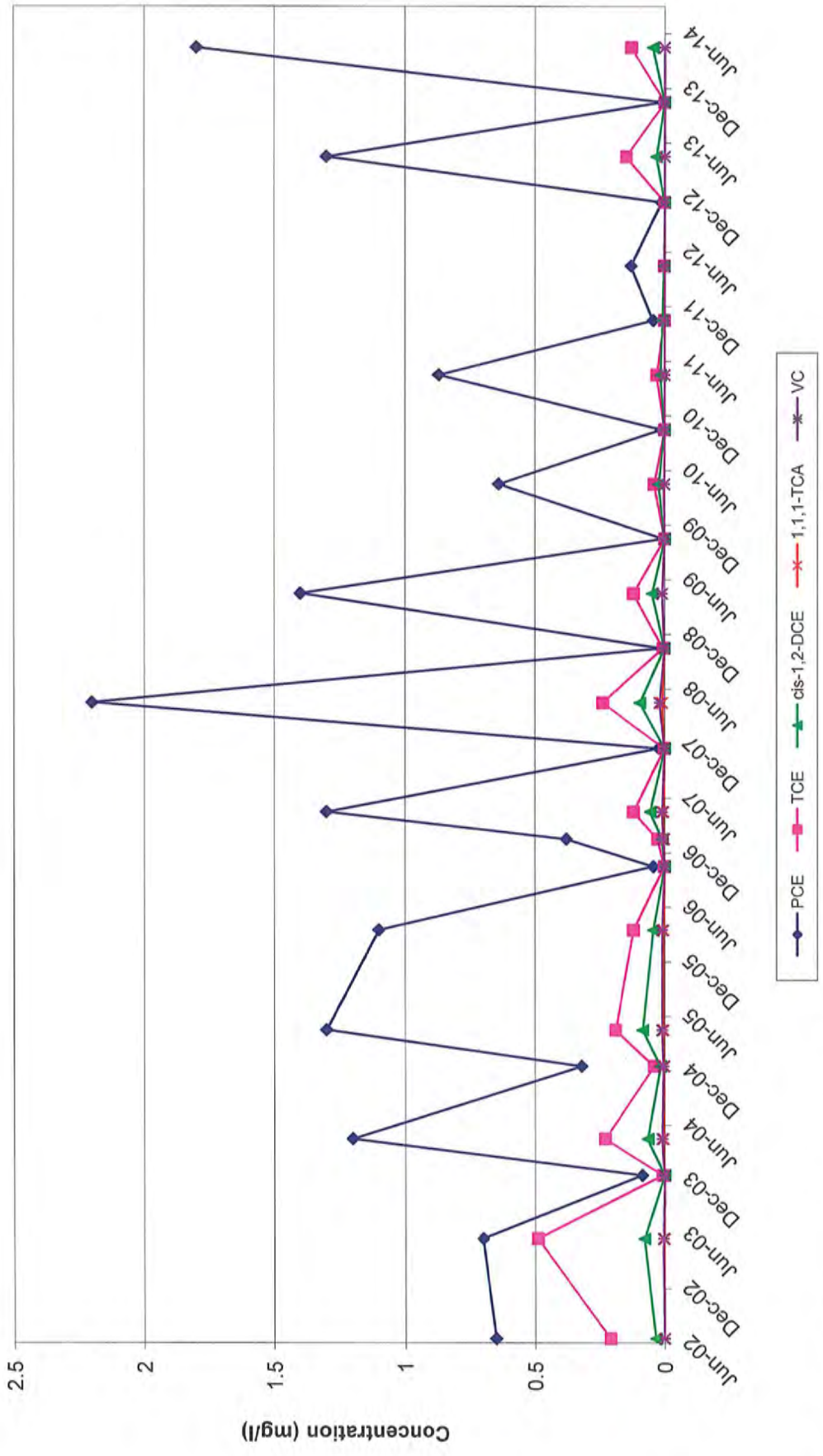


VOC Trends in Well CL04-BR  
Former Varian Facility Site  
Beverly, Massachusetts



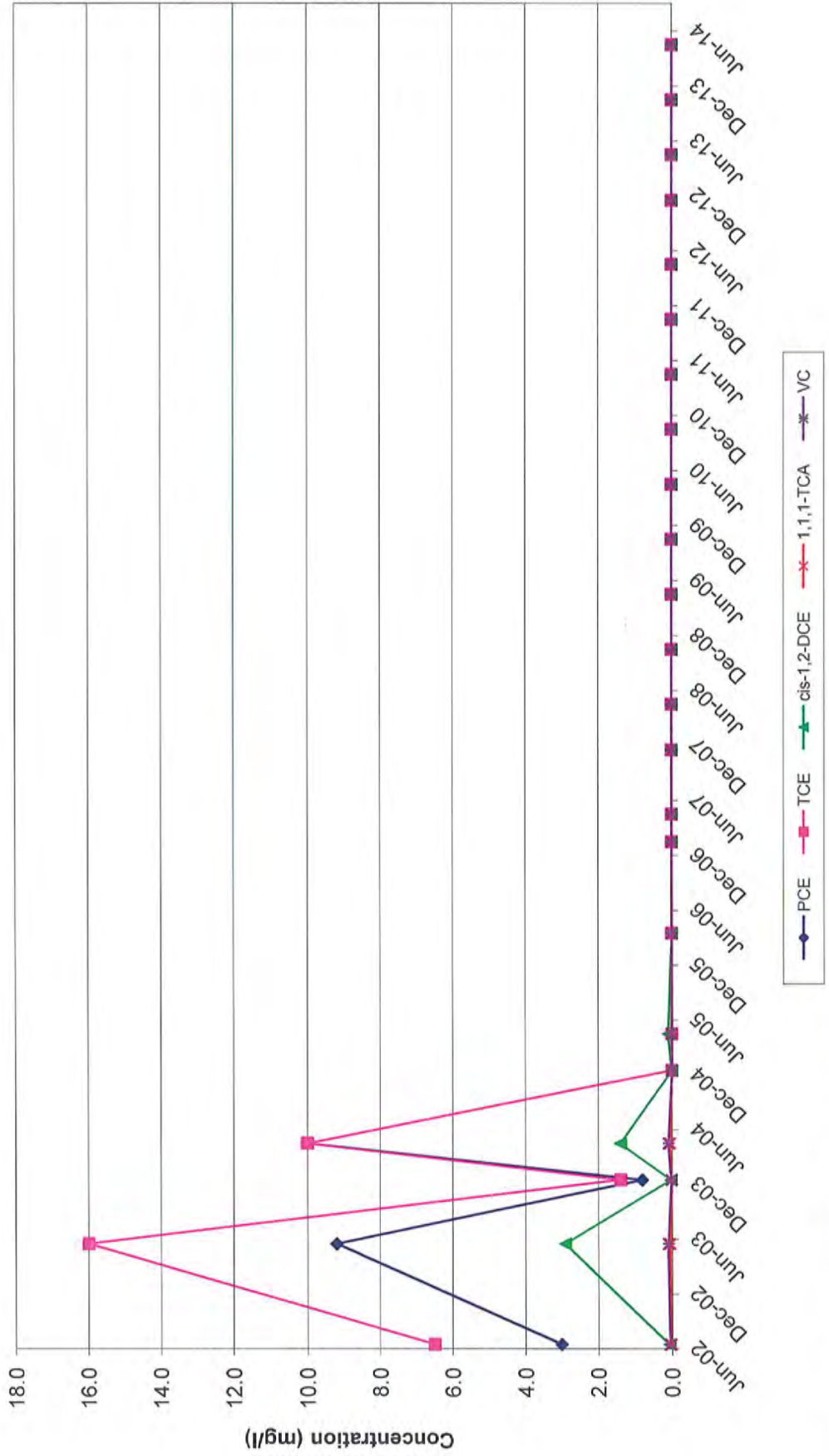
Notes: CL4-BR is a bedrock well located just east of the 31 Tozer Road Treatment Area. See end of appendix for additional notes.

VOC Trends in Well CL10-S  
Former Varian Facility Site  
Beverly, Massachusetts



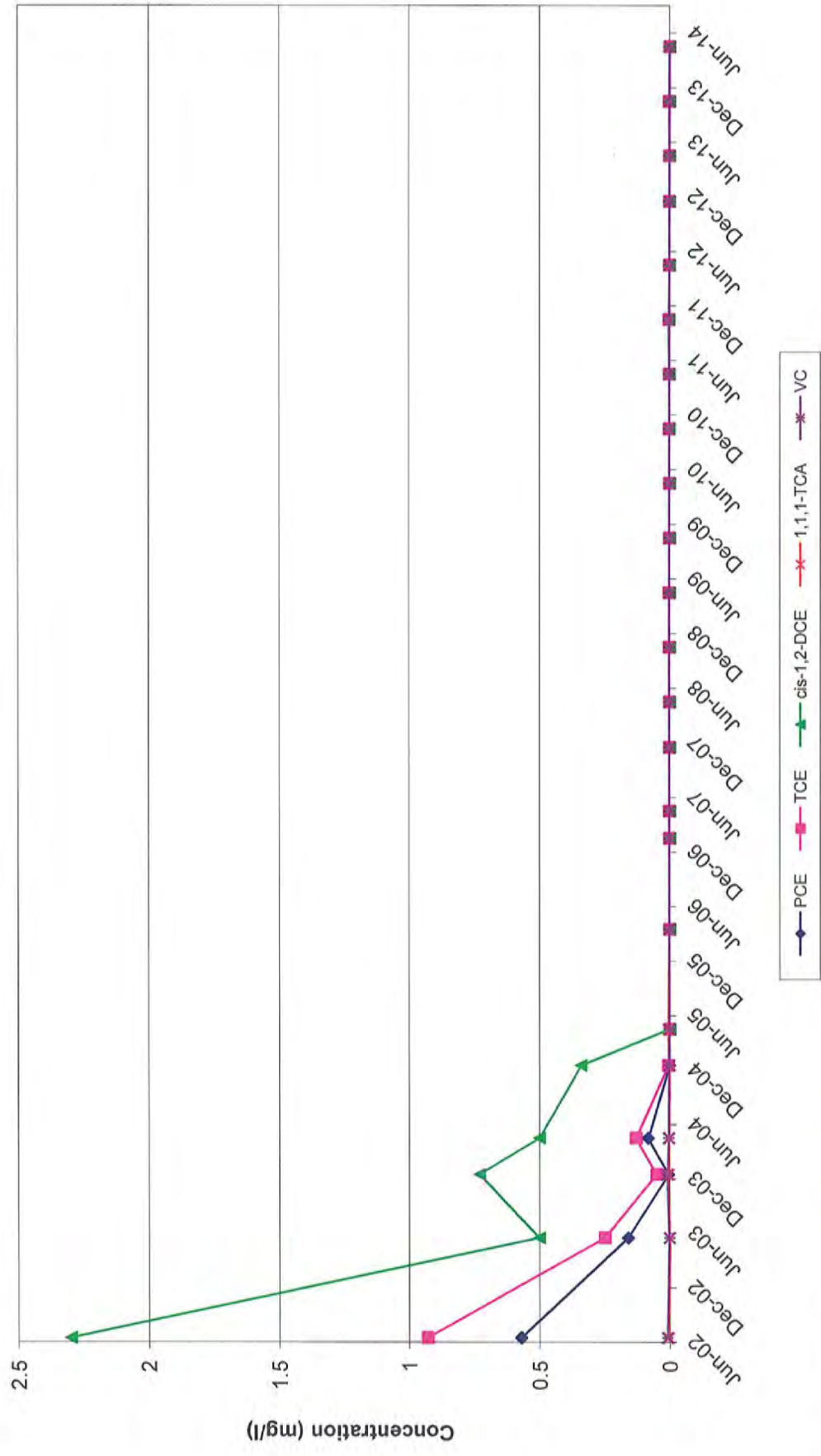
Notes: CL10-S is a shallow overburden well located in the PSL10 treatment area, south of the facility. See end of appendix for additional notes.

VOC Trends in Well CL10-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: CL10-DO is a deep overburden well located in the PSL10 treatment area, south of the facility. See end of appendix for additional notes.

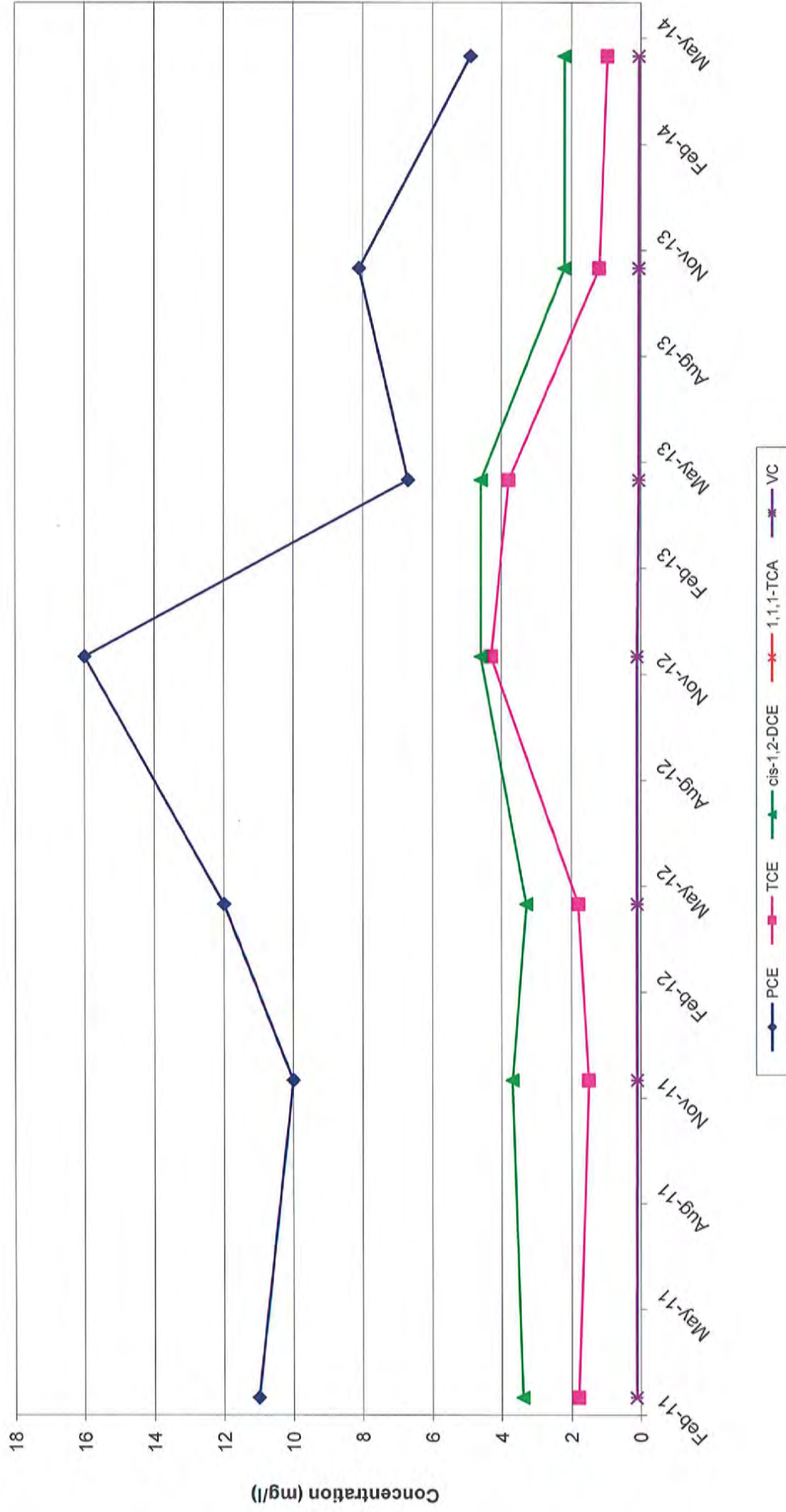
VOC Trends in Well CL10-BR  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: CL10-BR is a bedrock well located in the PSL10 treatment area, south of the facility. See end of appendix for additional notes.

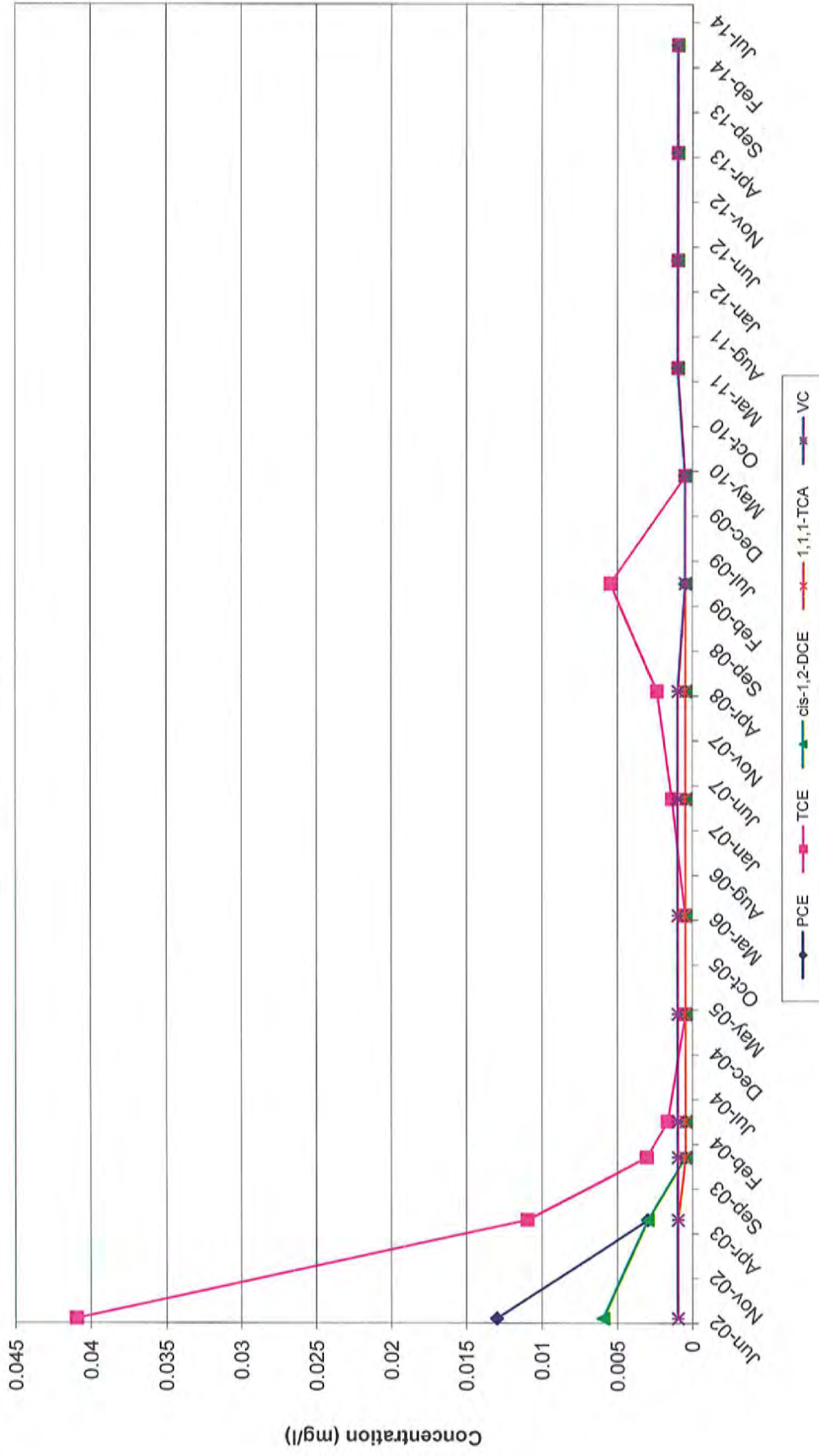


VOC Trends in Well MW-2 32 Tozer  
Former Varian Facility Site  
Beverly, Massachusetts



Note: MW-2 32 Tozer is a deep overburden well located east of the 32 Tozer Road building.  
See end of appendix for additional notes.

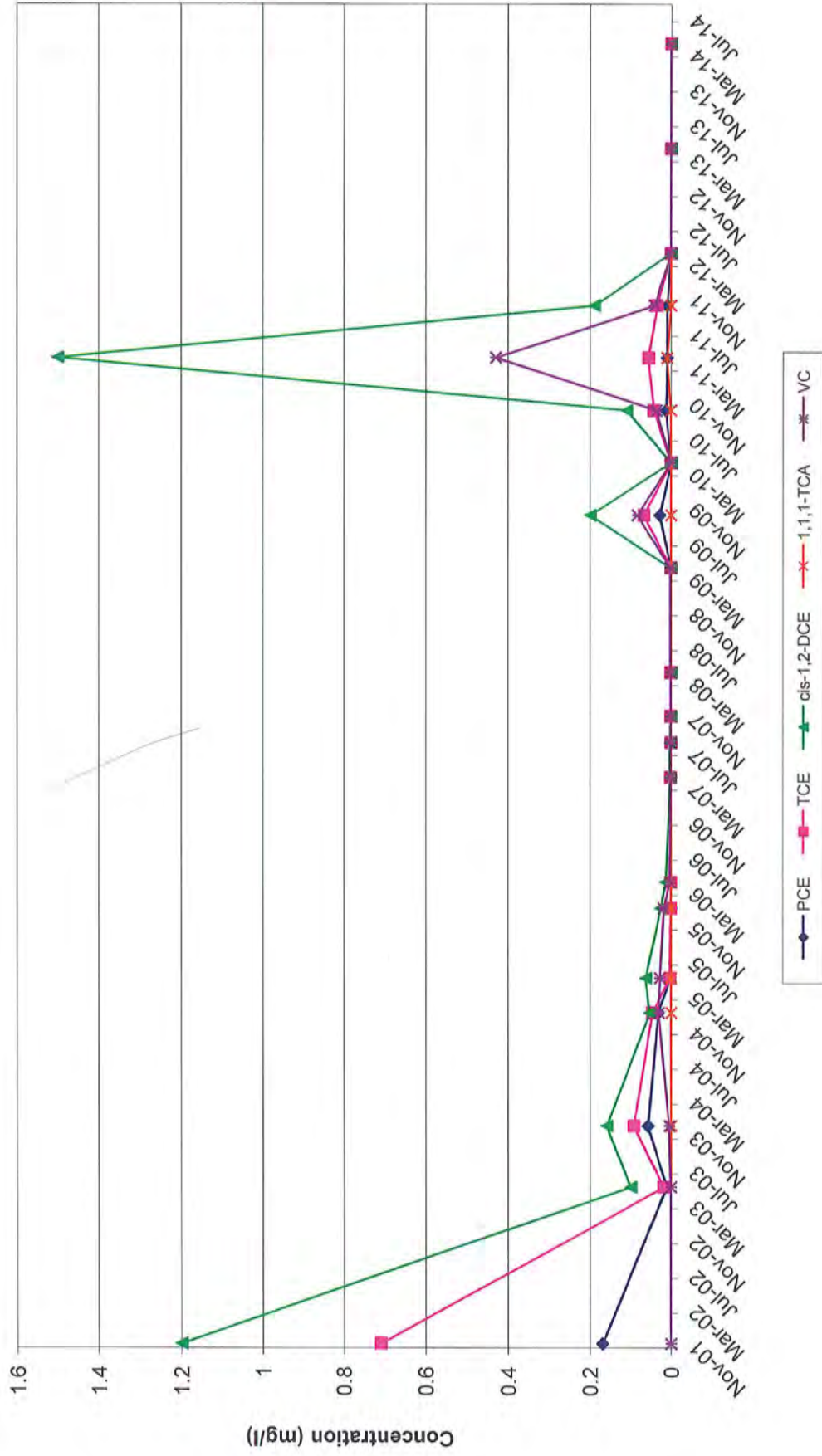
VOC Trends in Well OB-16-BR  
Former Varian Facility Site  
Beverly, Massachusetts



Note: OB-16-BR is a bedrock well at 32 Tozer Road.  
See end of appendix for additional notes.

TOZER ROAD NORTH OF ROUTE 128

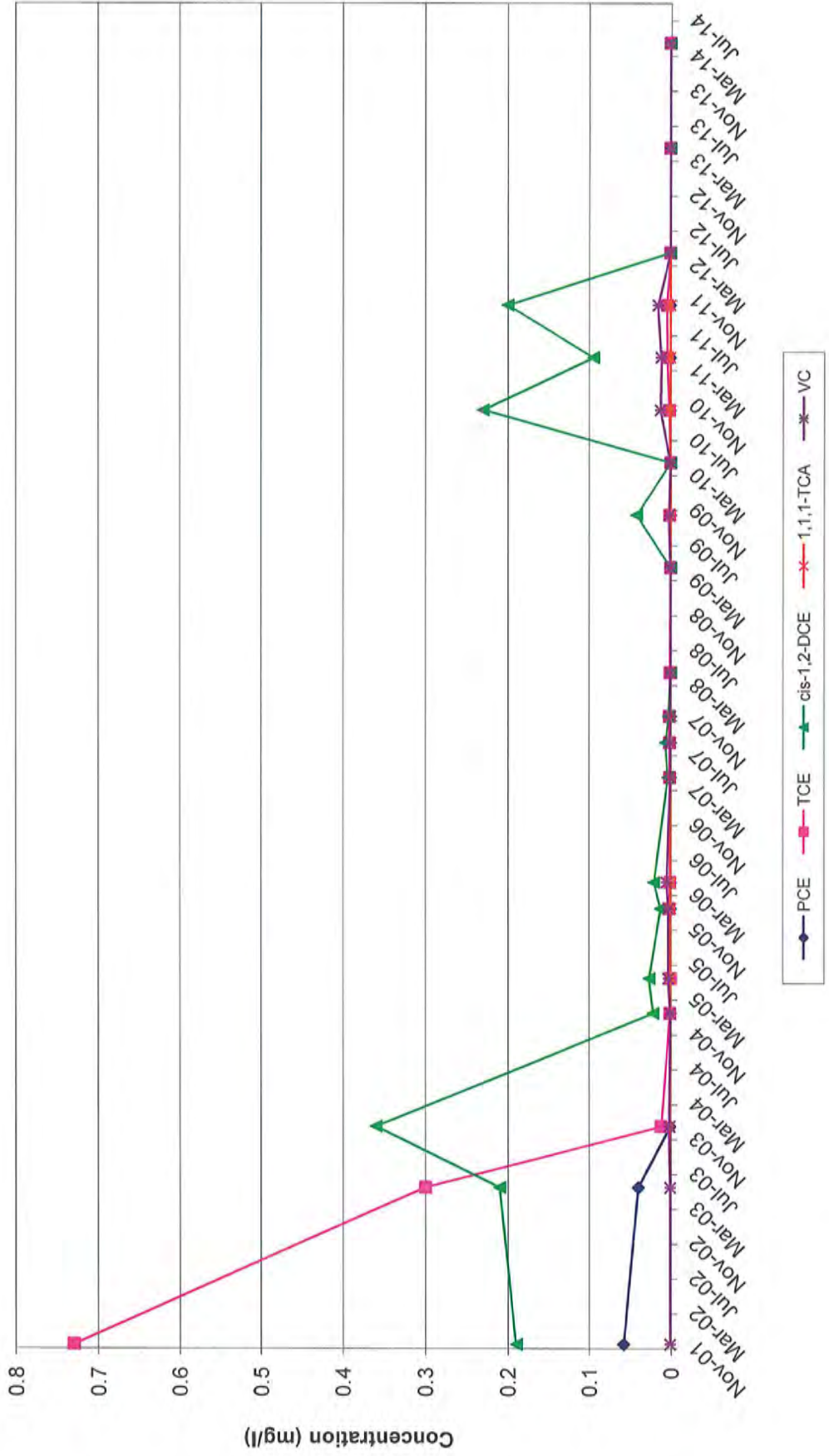
VOC Trends in Well BR-1\_ZONE1  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: BR-1\_ZONE1 is the deepest zone of a bedrock well on Walden Street.  
See end of appendix for additional notes.

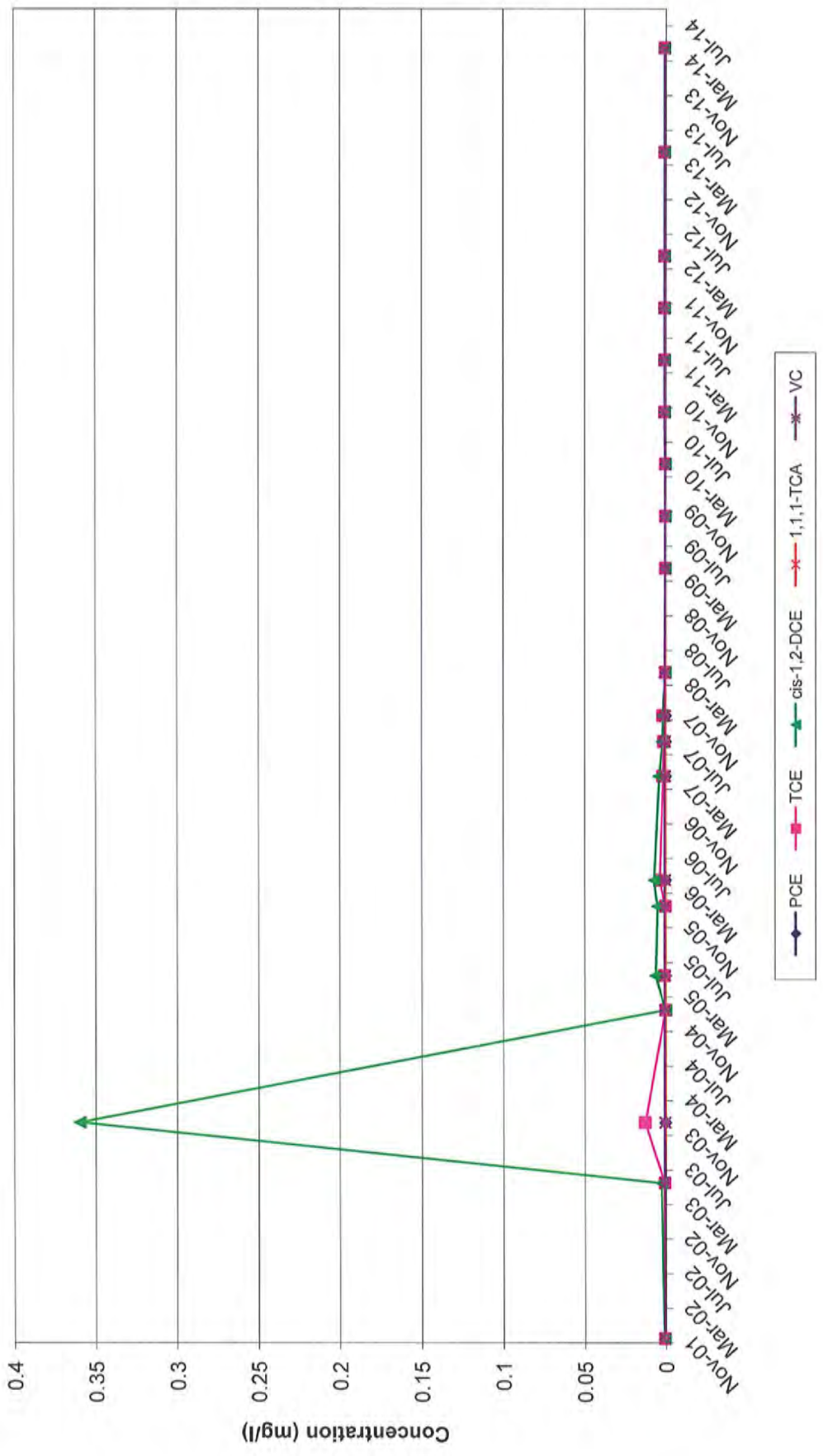


VOC Trends in Well BR-1\_ZONE2  
 Former Varian Facility Site  
 Beverly, Massachusetts



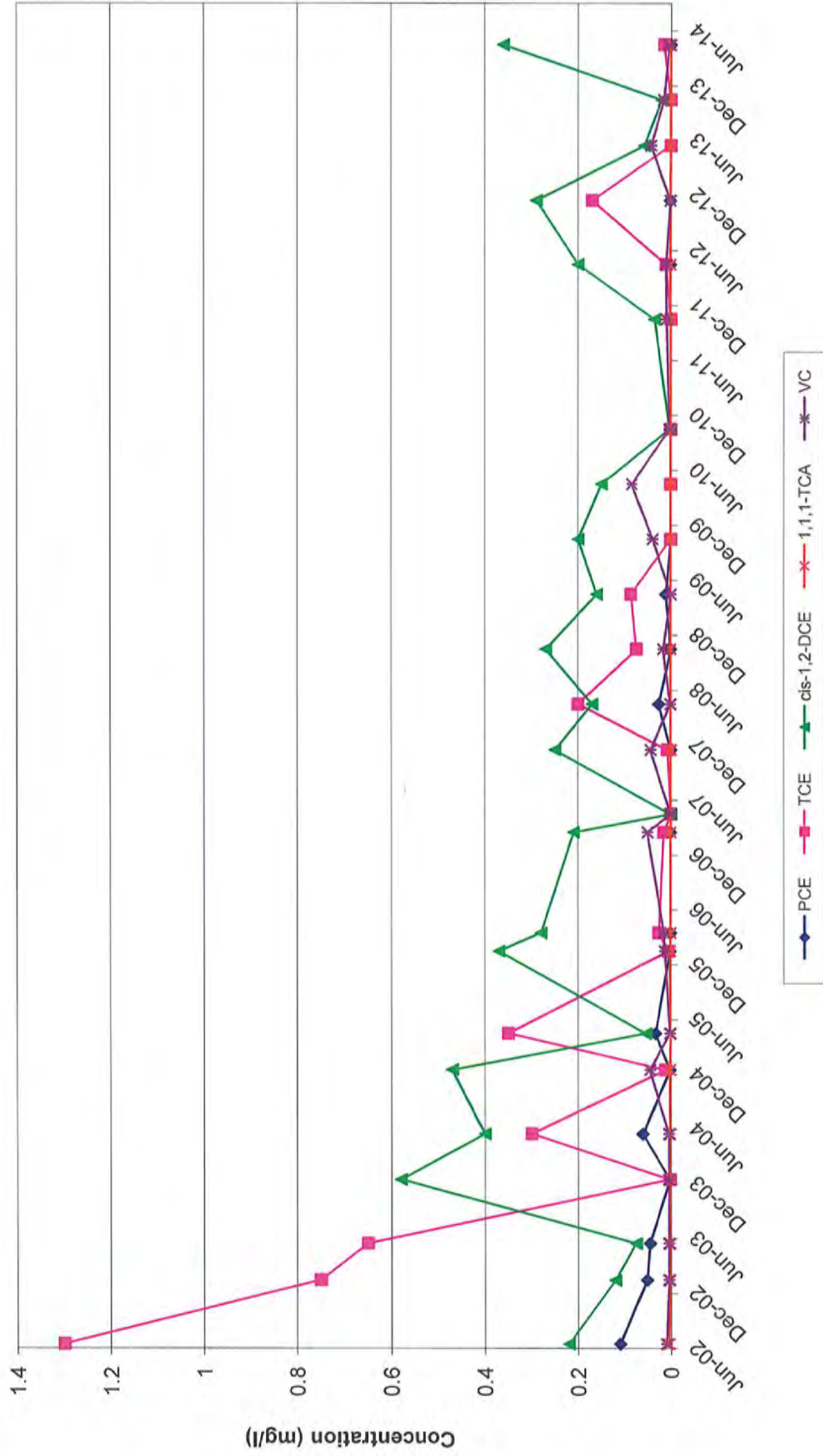
Notes: BR-1\_ZONE2 is the middle depth zone of a bedrock well on Walden Street.  
 See end of appendix for additional notes.

VOC Trends in Well BR-1\_ZONE3  
 Former Varian Facility Site  
 Beverly, Massachusetts



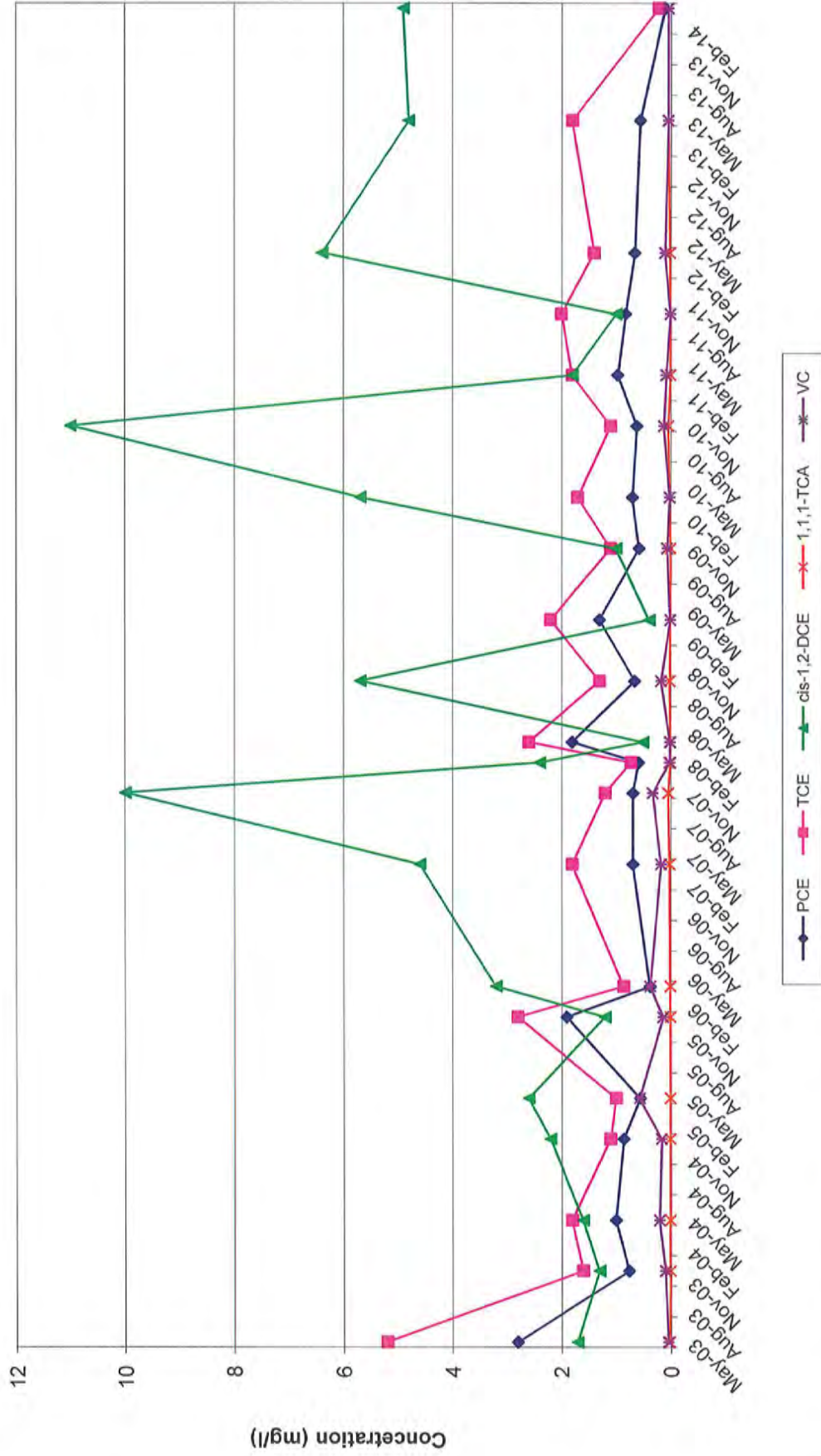
Notes: BR-1\_ZONE3 is the shallowest zone of a bedrock well on Walden Street.  
 See end of appendix for additional notes.

VOC Trends in Well CL02-BR  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: CL02-BR is a bedrock well north of Route 128 at 16 Tozer Road.  
See end of appendix for additional notes.

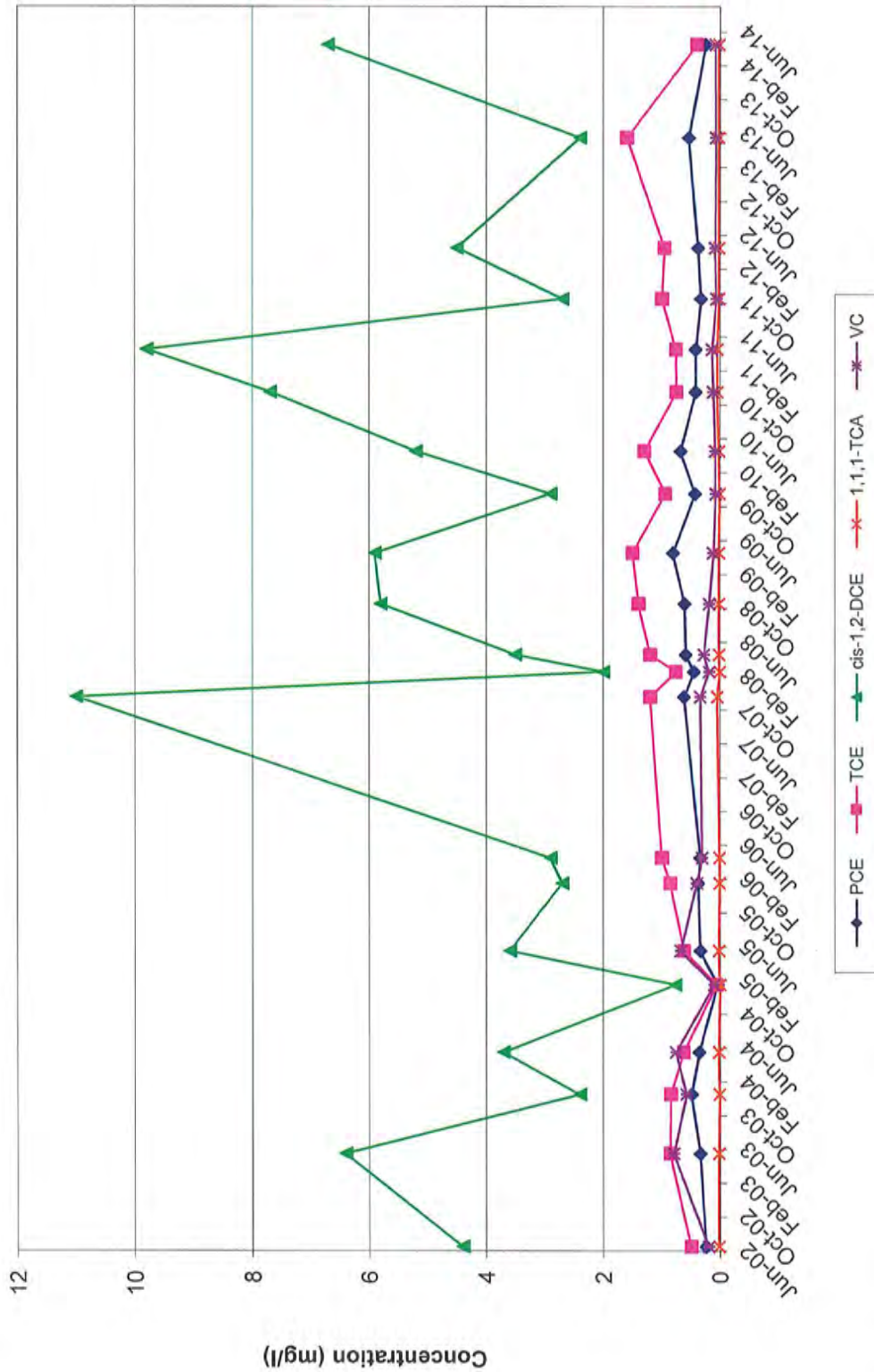
VOCs in Well CL09-BR\_ZONE1  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: CL09-BR\_ZONE1 is the deepest zone of a bedrock well north of Route 128, west of Tozer Road. See end of appendix for additional notes.

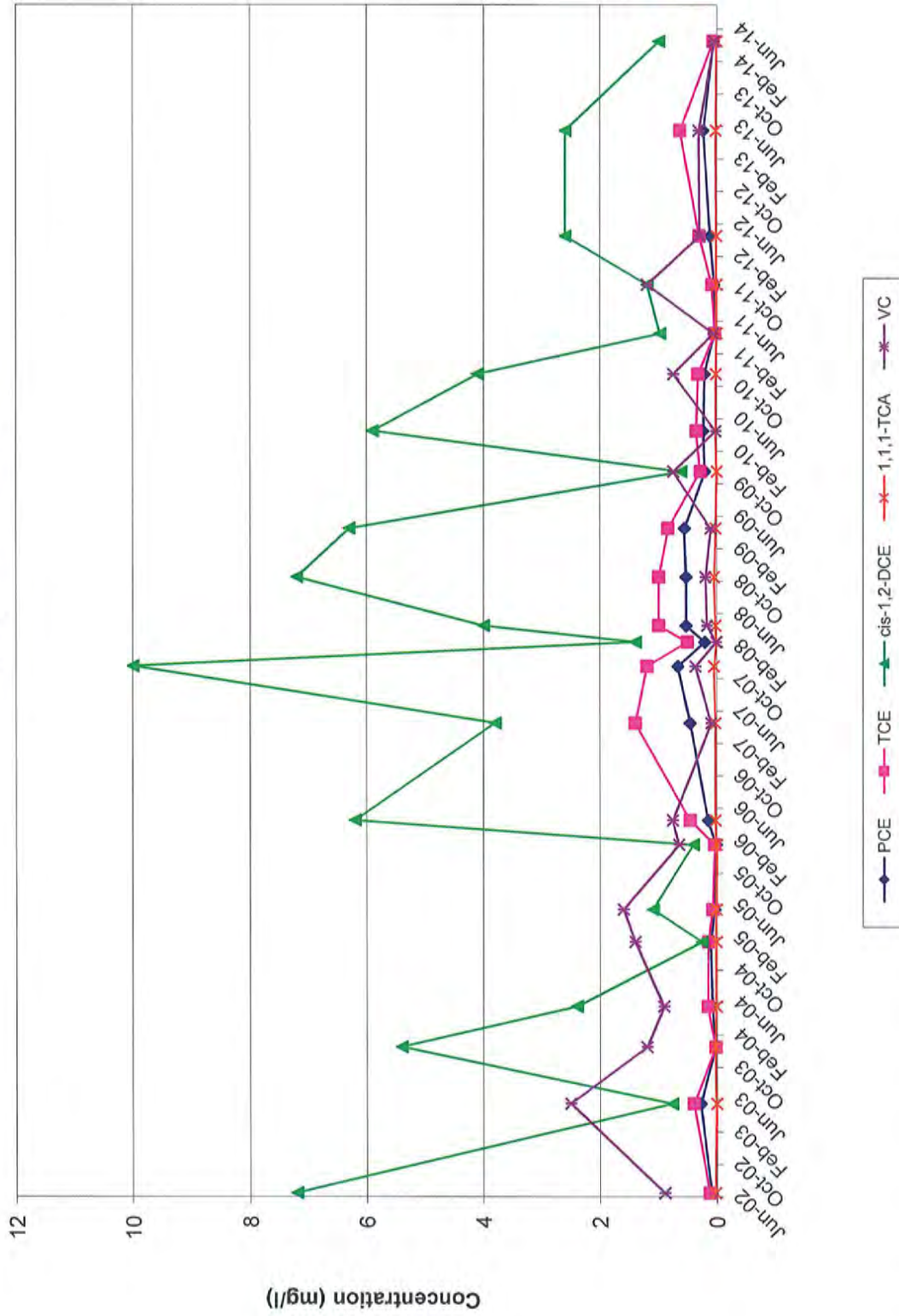


VOC Trends in Well CL09-BR\_ZONE2  
Former Varian Facility Site  
Beverly, Massachusetts



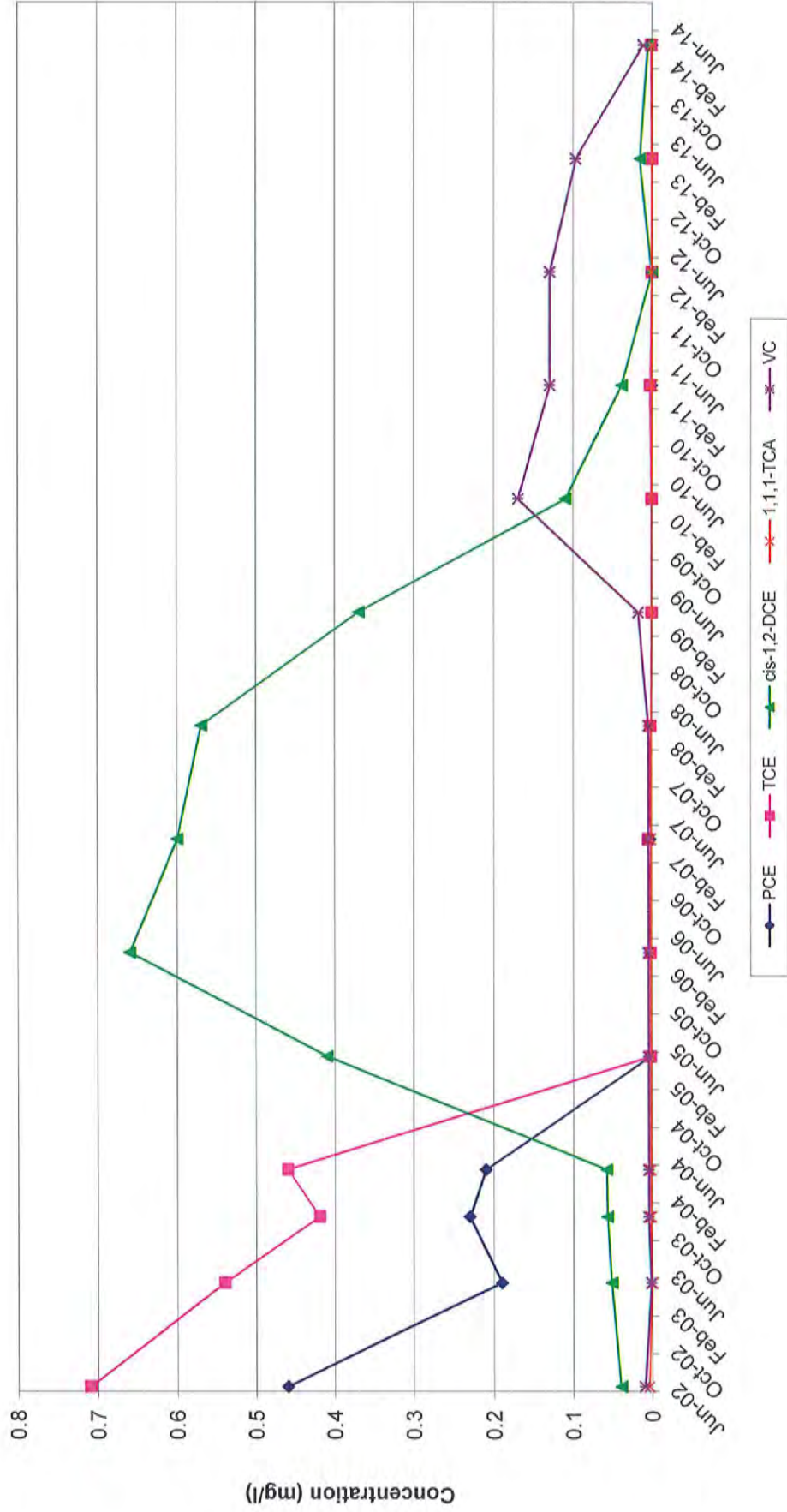
Notes: CL09-BR\_ZONE2 is the middle depth zone of a bedrock well north of Route 128, west of Tozer Road. See end of appendix for additional notes.

VOC Trends in Well CL09-BR\_ZONE3  
Former Varian Facility Site  
Beverly, Massachusetts



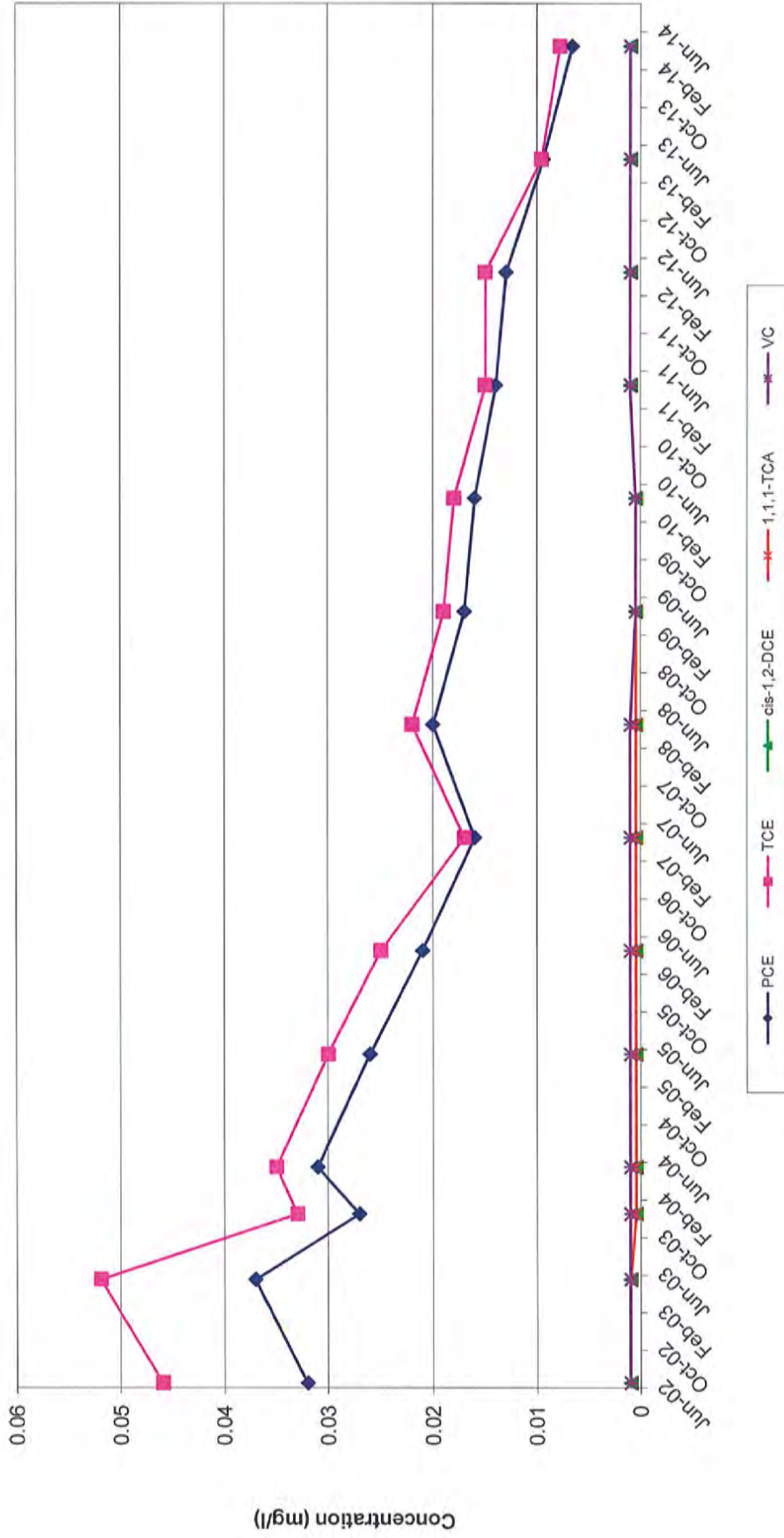
Notes: Notes: CL09-BR\_ZONE3 is the shallowest zone of a bedrock well north of Route 128, west of Tozer Road. See end of appendix for additional notes.

VOC Trends in Well OB-17-BR  
 Former Varian Facility Site  
 Beverly, Massachusetts



Notes: OB17-BR is a bedrock well north of Route 128 on Commons Drive.  
 See end of appendix for additional notes.

VOC Trends in Well OB-17-DO  
Former Varian Facility Site  
Beverly, Massachusetts

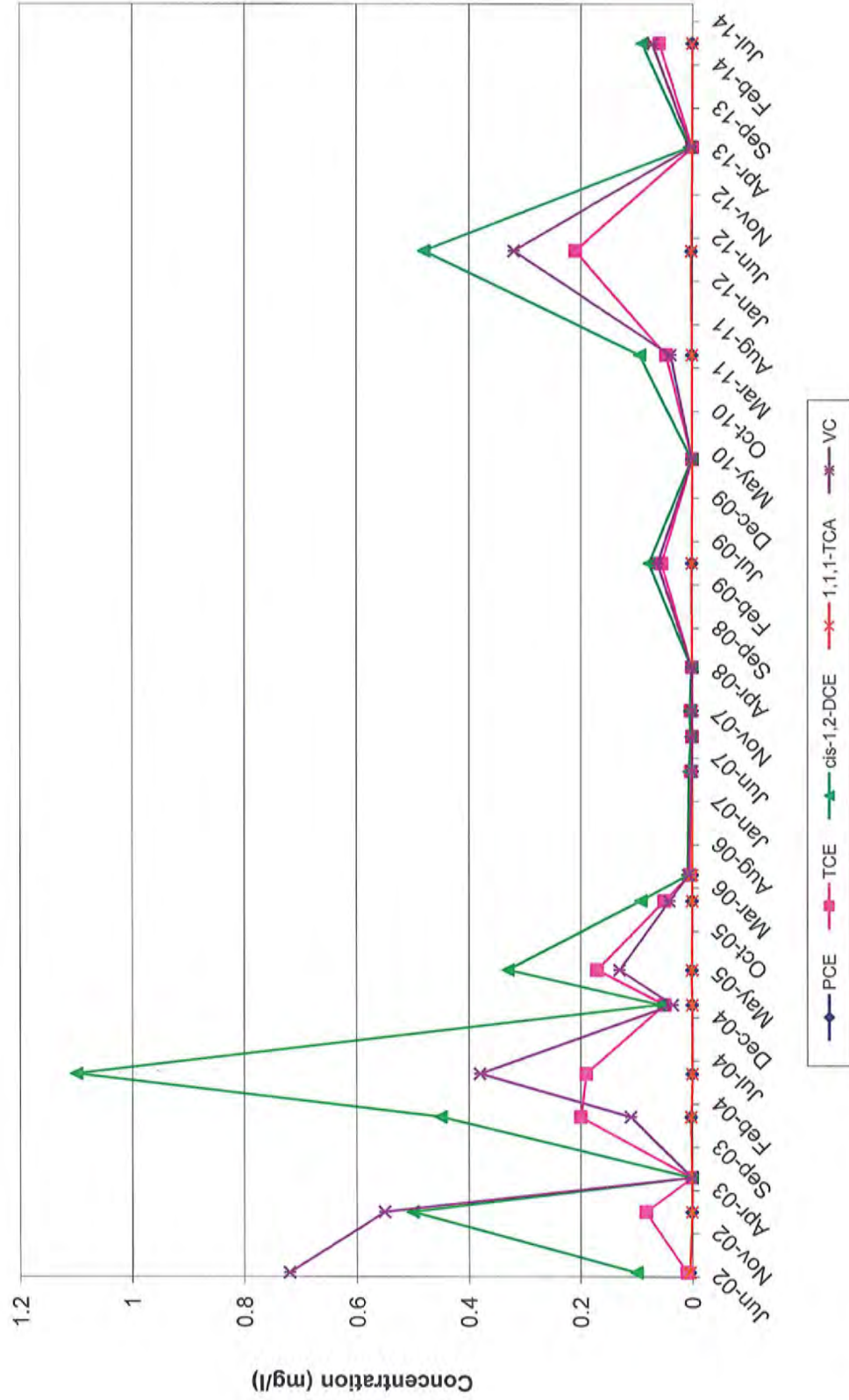


Note: OB-17-DO is a deep overburden well on Commons Drive.  
See end of appendix for additional notes.



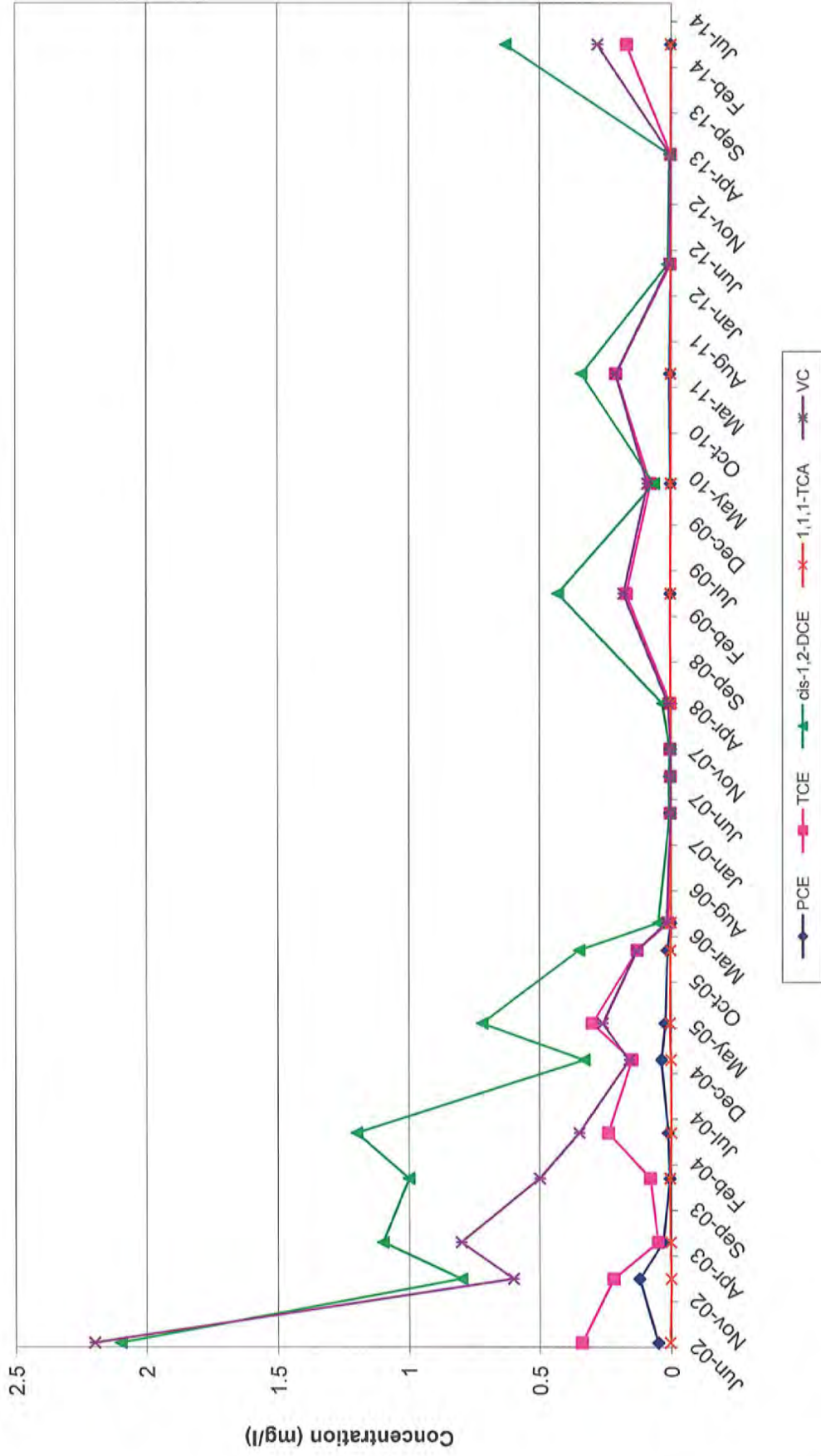
**TOZER ROAD TREATMENT AREA SOUTH OF ROUTE 128**

VOC Trends in Well BR-5\_ZONE1  
Former Varian Facility Site  
Beverly, Massachusetts



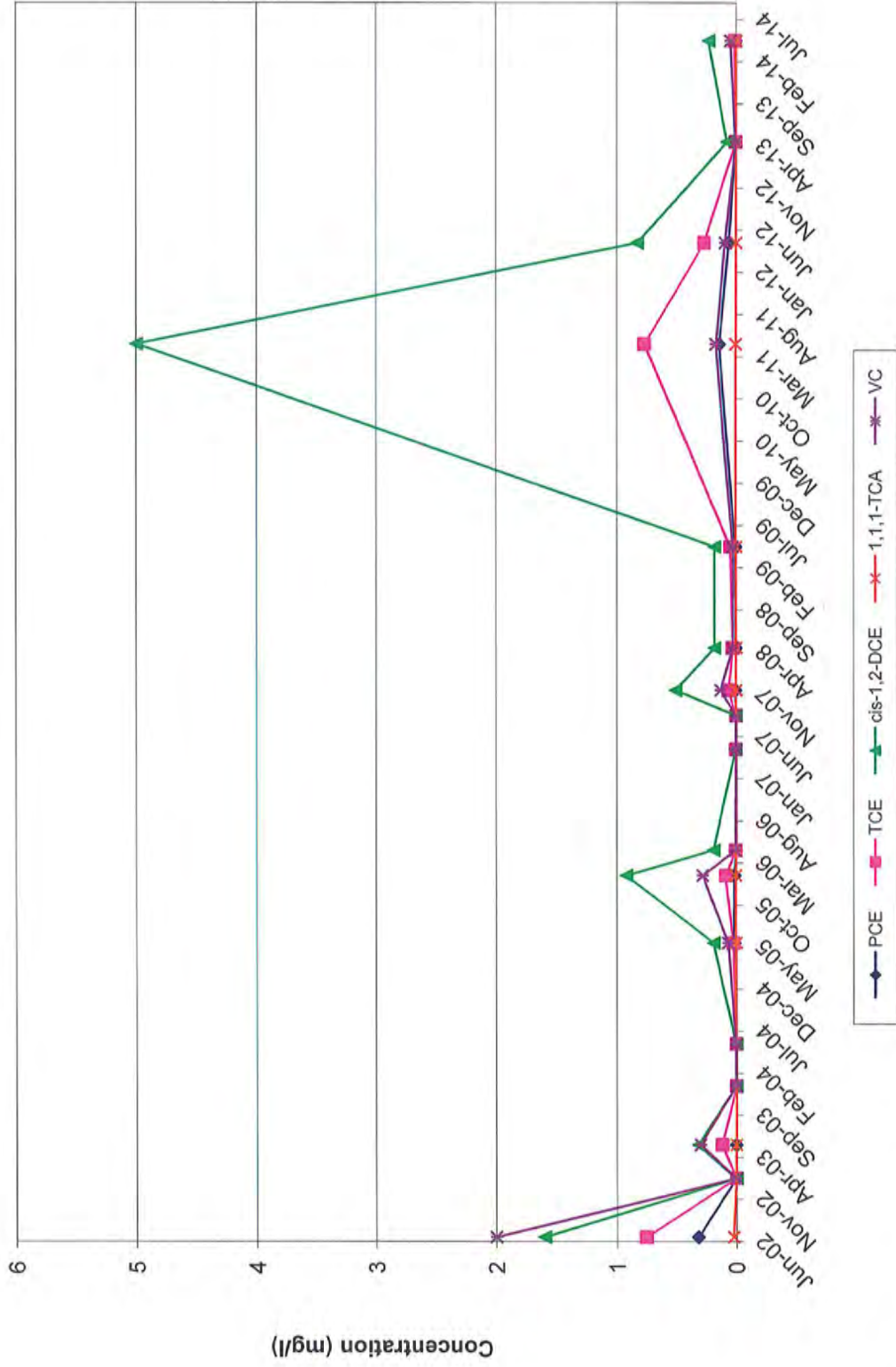
Notes: BR-5\_ZONE1 is a bedrock well at 28 Tozer Road;  
zone 1 is the deepest sampling zone.  
See end of appendix for additional notes.

VOC Trends in Well BR-5\_ZONE2  
Former Varian Facility Site  
Beverly, Massachusetts



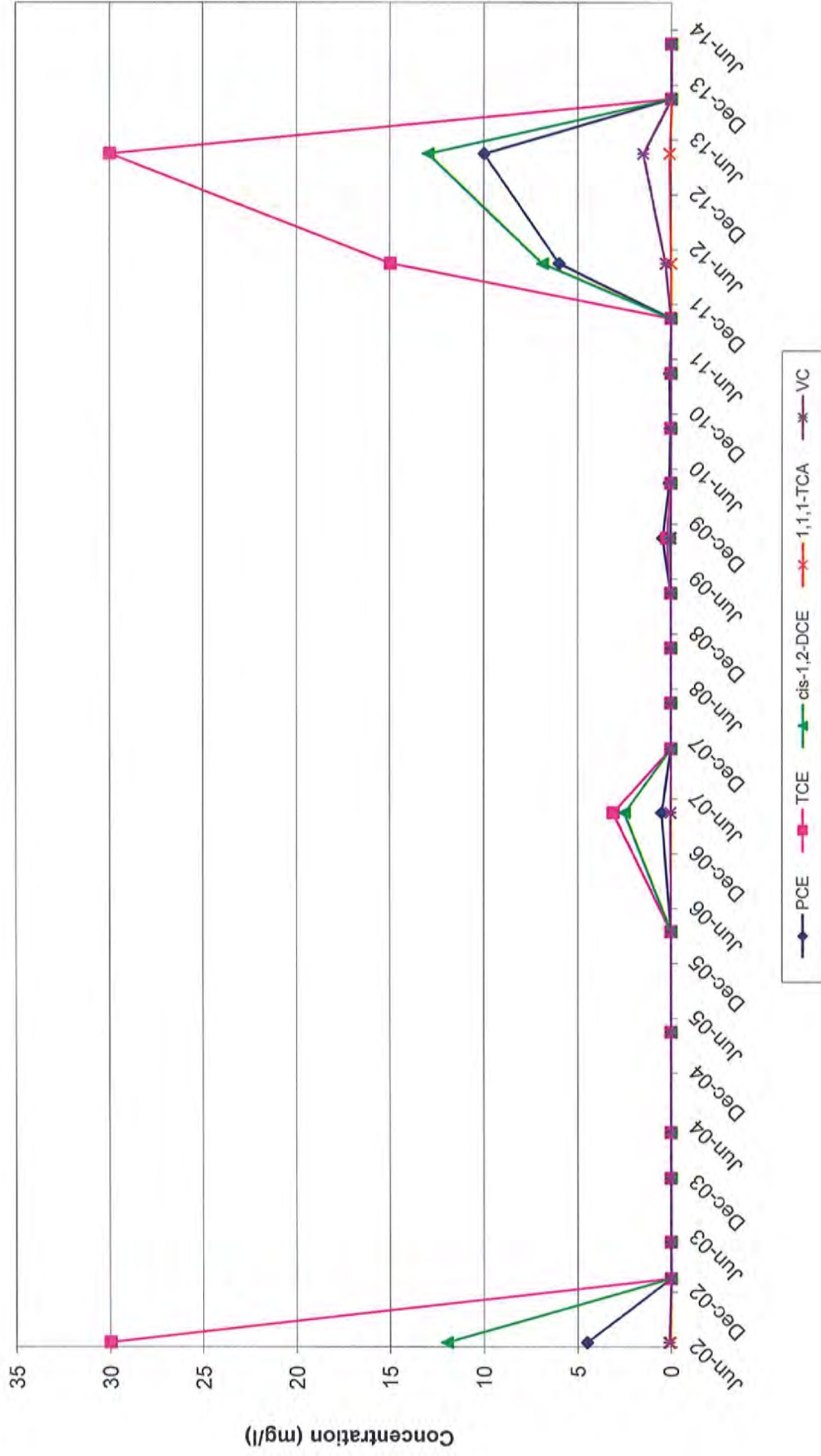
Notes: BR-5\_ZONE2 is a bedrock well at 28 Tozer Road; zone 2 is the middle sampling zone. See end of appendix for additional notes.

VOC Trends in Well BR-5\_ZONE3  
 Former Varian Facility Site  
 Beverly, Massachusetts



Notes: BR-5\_ZONE3 is a bedrock well at 28 Tozer Road;  
 zone 3 is the shallowest sampling zone.  
 See end of appendix for additional notes.

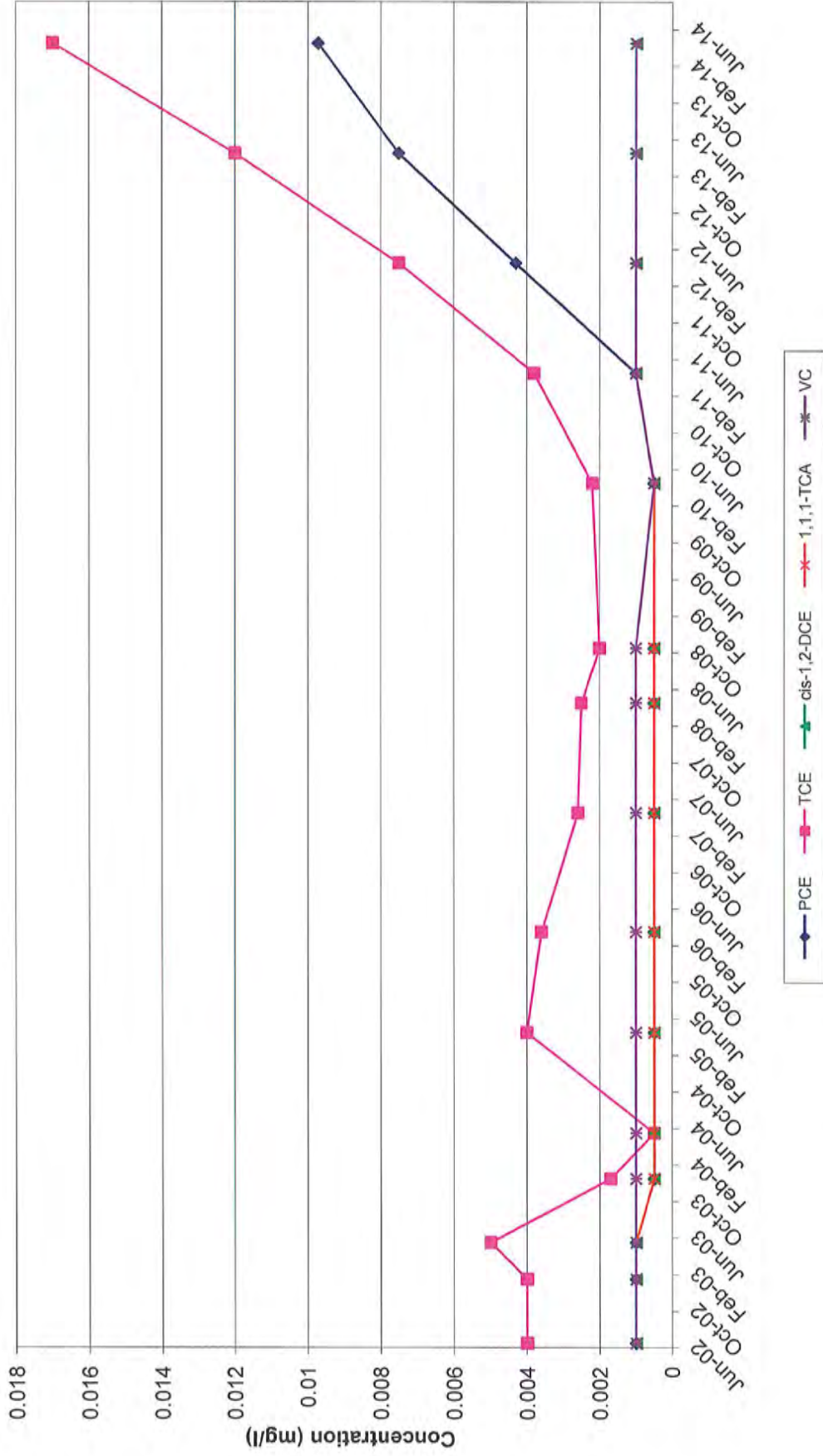
VOC Trends in Well CL03-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: CL3-DO is a deep overburden well located at 28 Tozer Road. Where permanganate injections were conducted in 2002 and 2013. See end of appendix for additional notes.

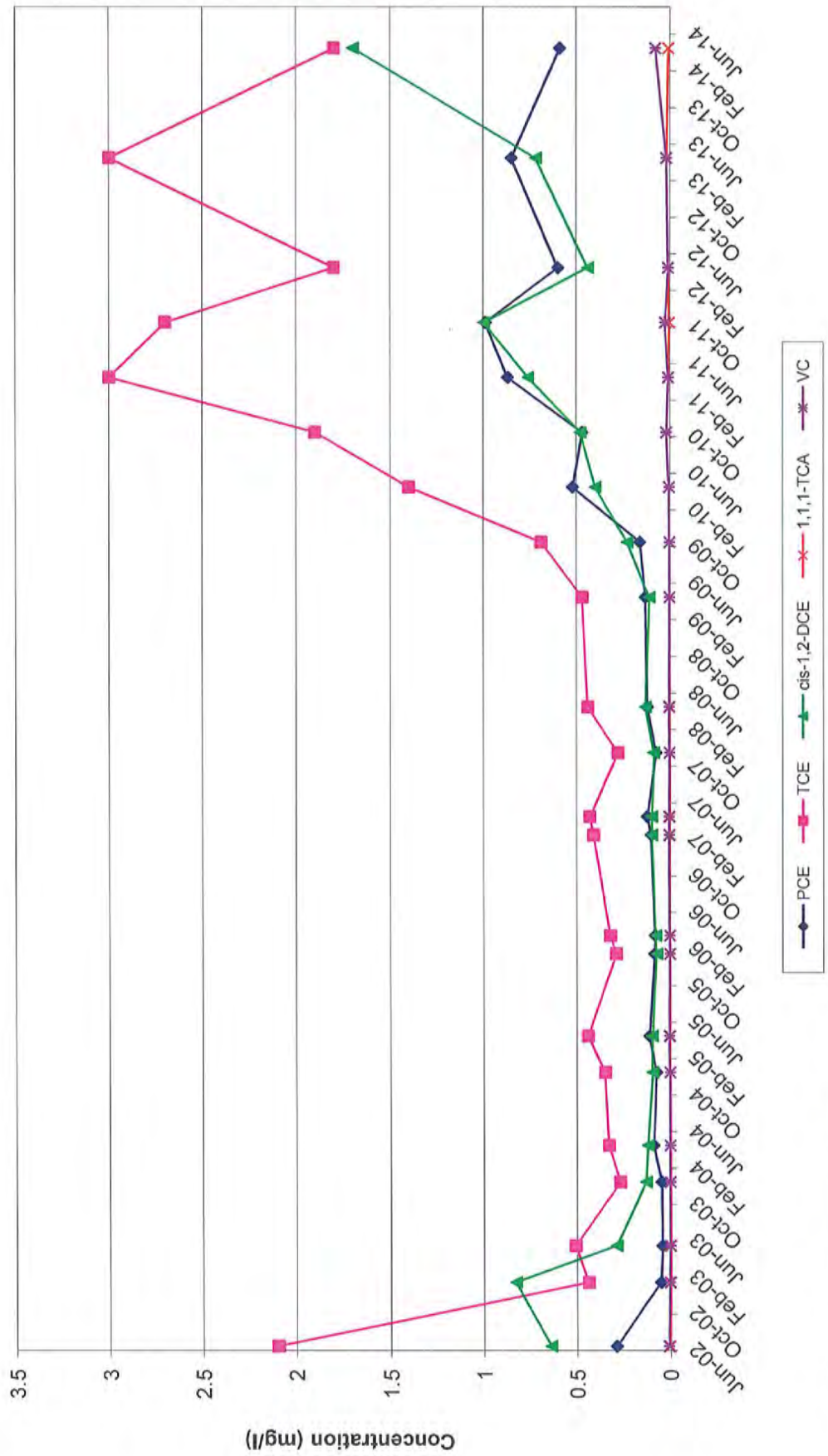


VOC Trends in Well CL03-S  
Former Varian Facility Site  
Beverly, Massachusetts



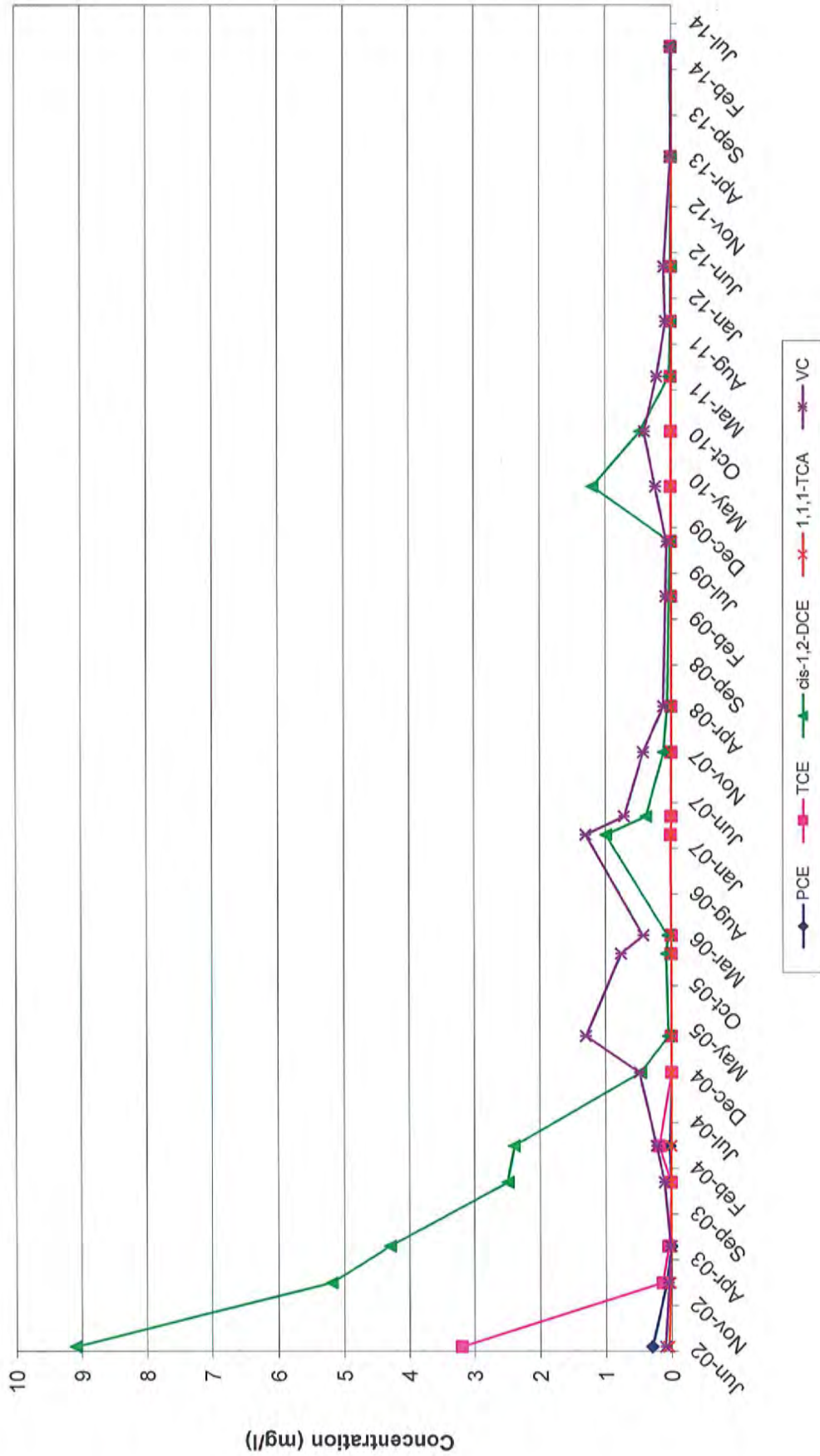
Notes: CL3-S is a shallow overburden well located at 28 Tozer Road.  
See end of appendix for additional notes.

VOC Trends in Well OB-05-DO  
Former Varian Facility Site  
Beverly, Massachusetts



Note: OB-5-DO is a deep overburden well south of the 28 Tozer Road treatment area. See end of appendix for additional notes.

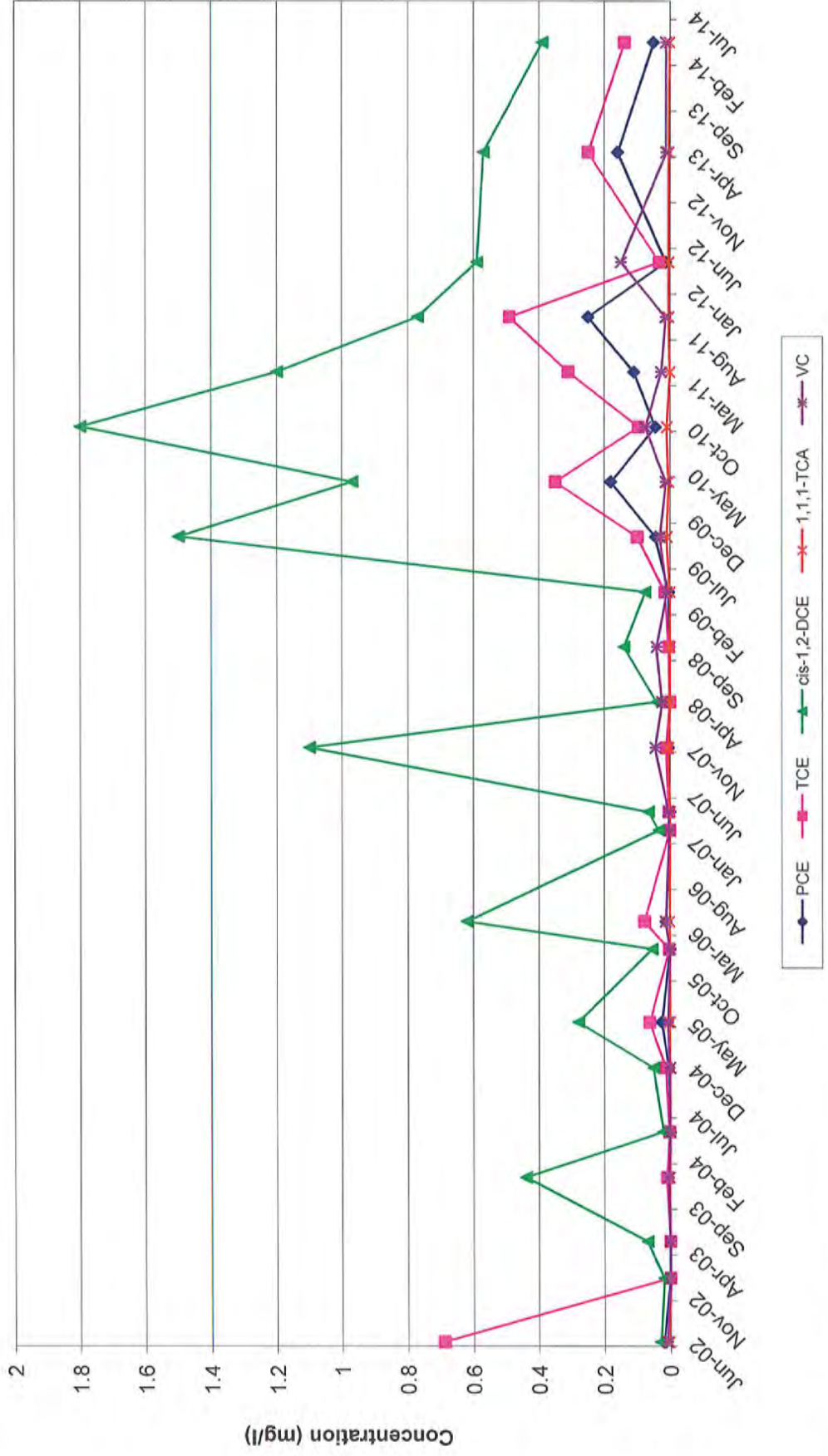
VOC Trends in Well OB-05-BR  
 Former Varian Facility Site  
 Beverly, Massachusetts



Note: OB-5-BR is a bedrock well south of the 28 Tozer Road treatment area.  
 See end of appendix for additional notes.

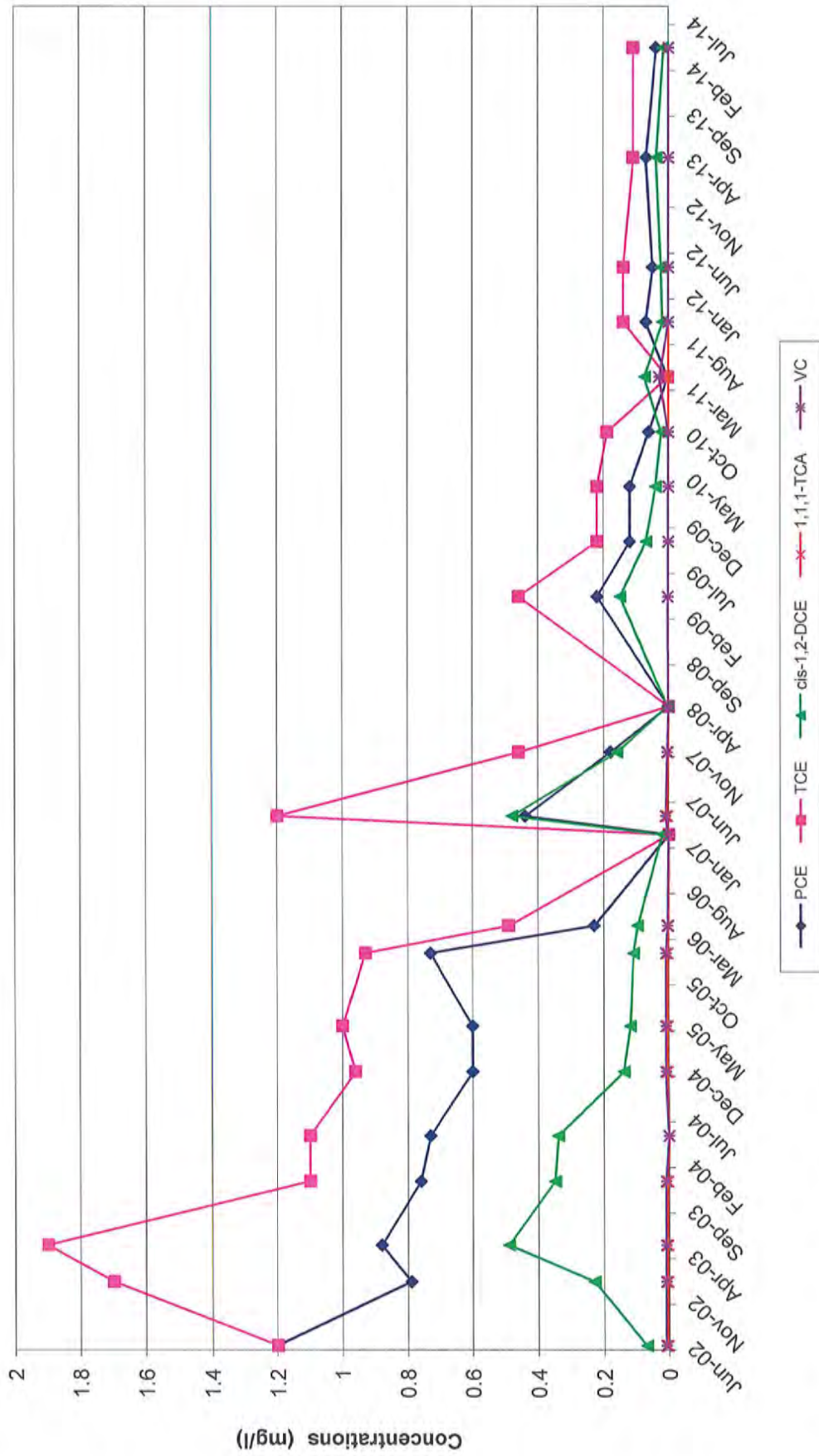


VOC Trends in Well OB-06-DO  
 Former Varian Facility Site  
 Beverly, Massachusetts



Note: OB-6-DO is a deep overburden well west of the 28 Tozer Road treatment area on Sonning Road. See end of appendix for additional notes.

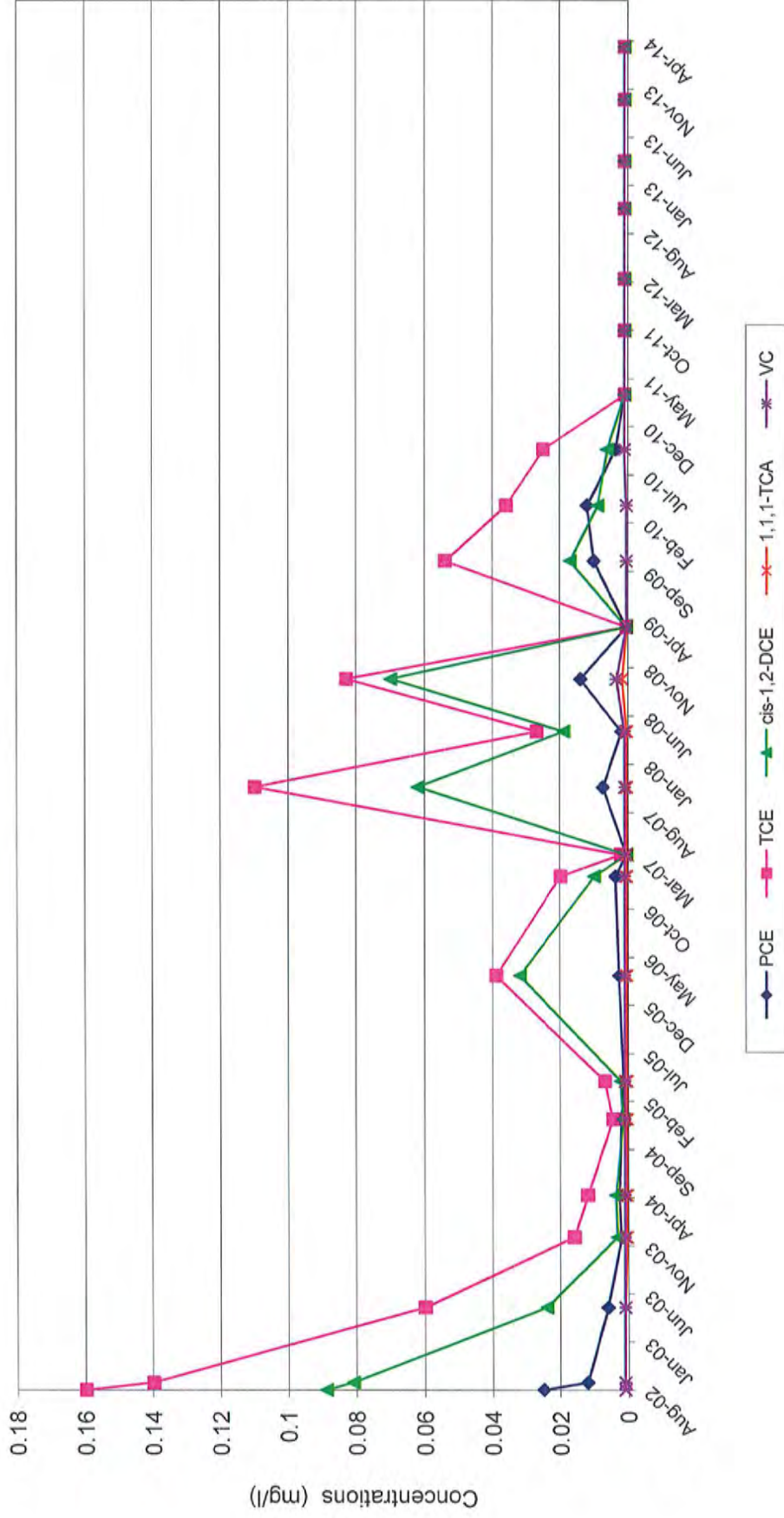
VOC Trends in Well OB-06-BR  
Former Varian Facility Site  
Beverly, Massachusetts



Note: OB-6-BR is a bedrock well west of the 28 Tozer Road treatment area on Sonning Road. See end of appendix for additional notes.

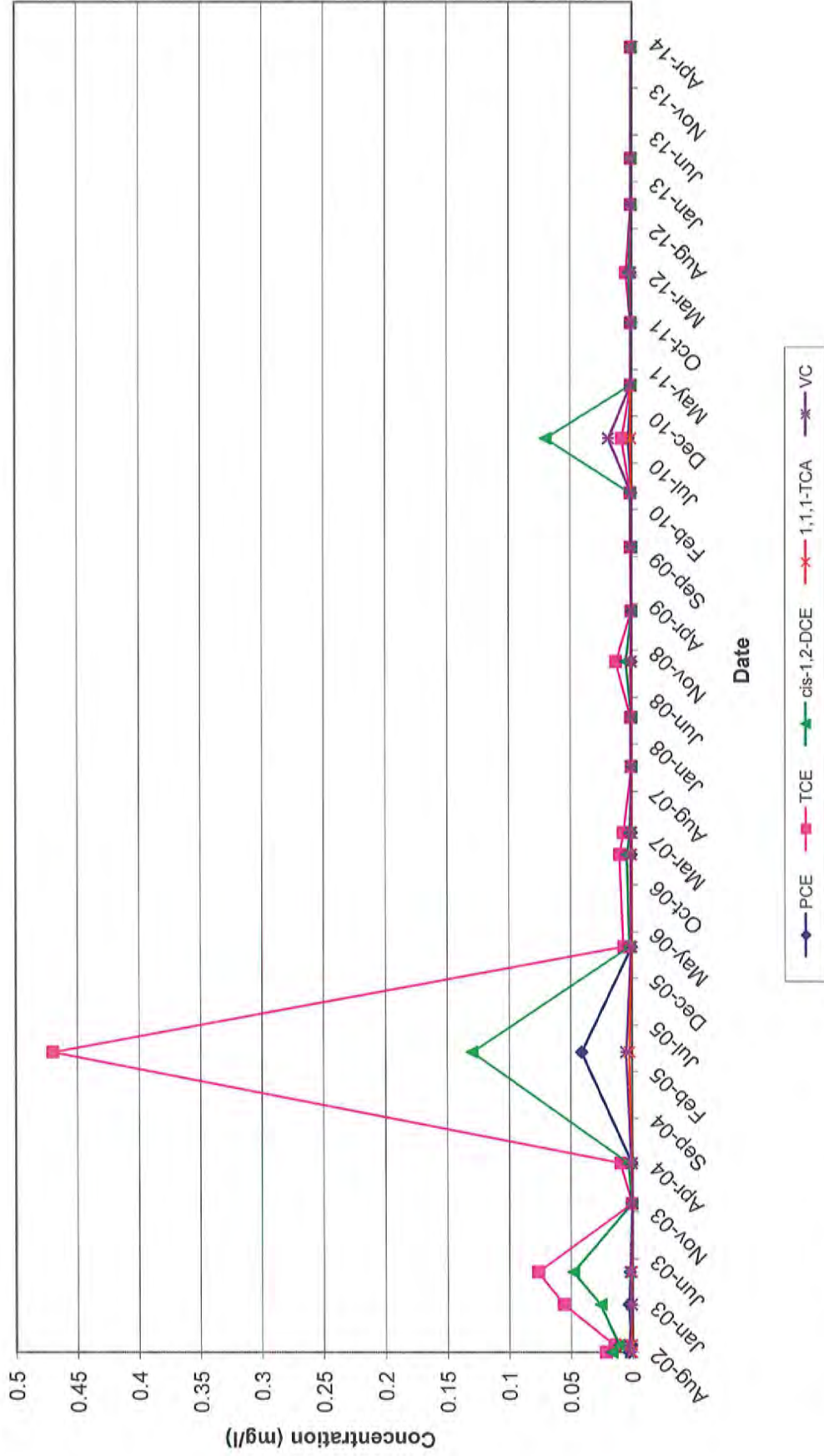
31 TOZER ROAD TREATMENT AREA

VOC Trends in Well AP-15S  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: AP-15-S is a shallow well located at 31 Tozer Road.  
See end of appendix for additional notes.

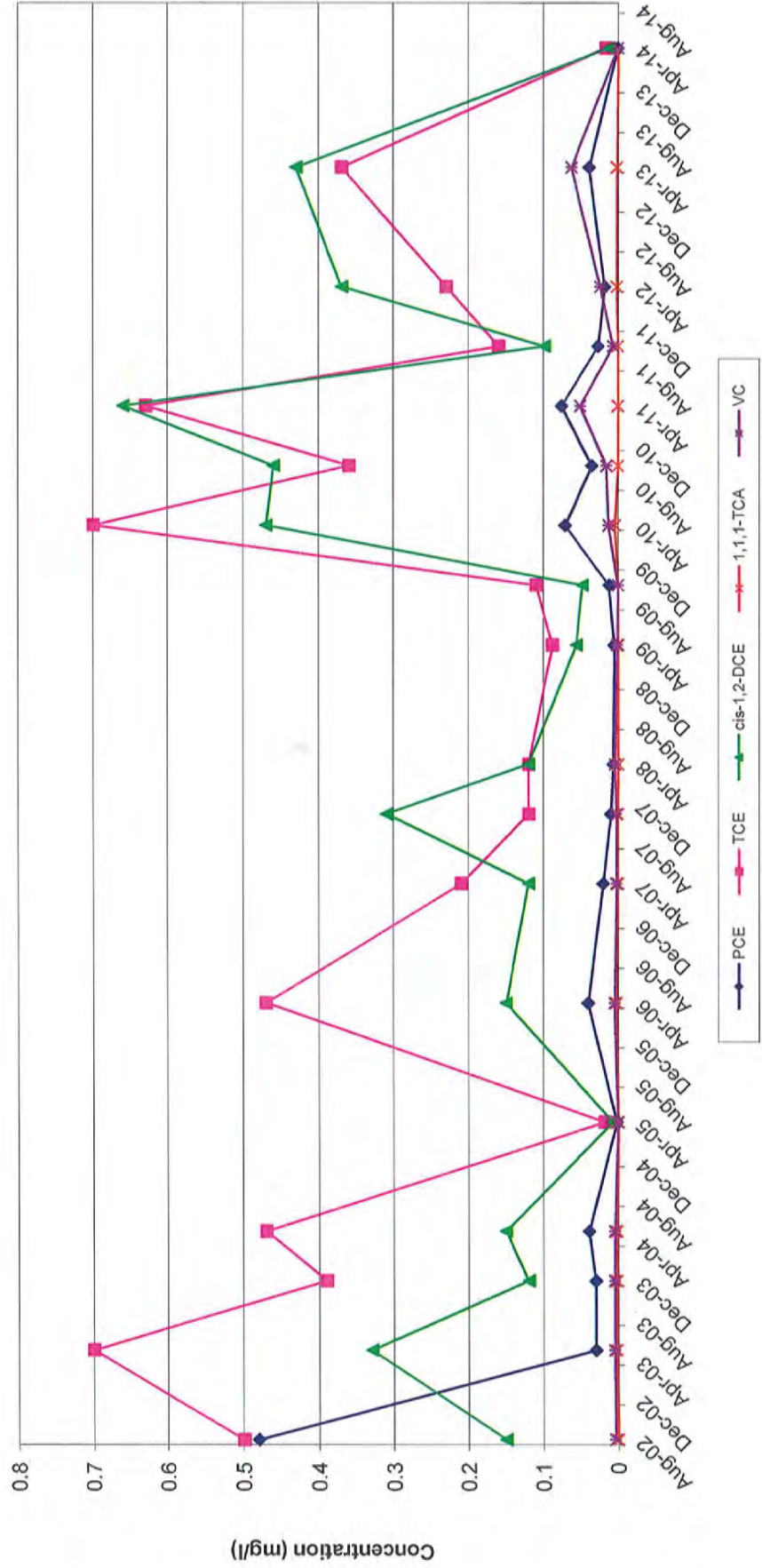
VOC Trends in Well OB-18-S  
 Former Varian Facility Site  
 Beverly, Massachusetts



Note: OB-18-S is a shallow overburden well located at 31 Tozer Road. See end of appendix for additional notes.

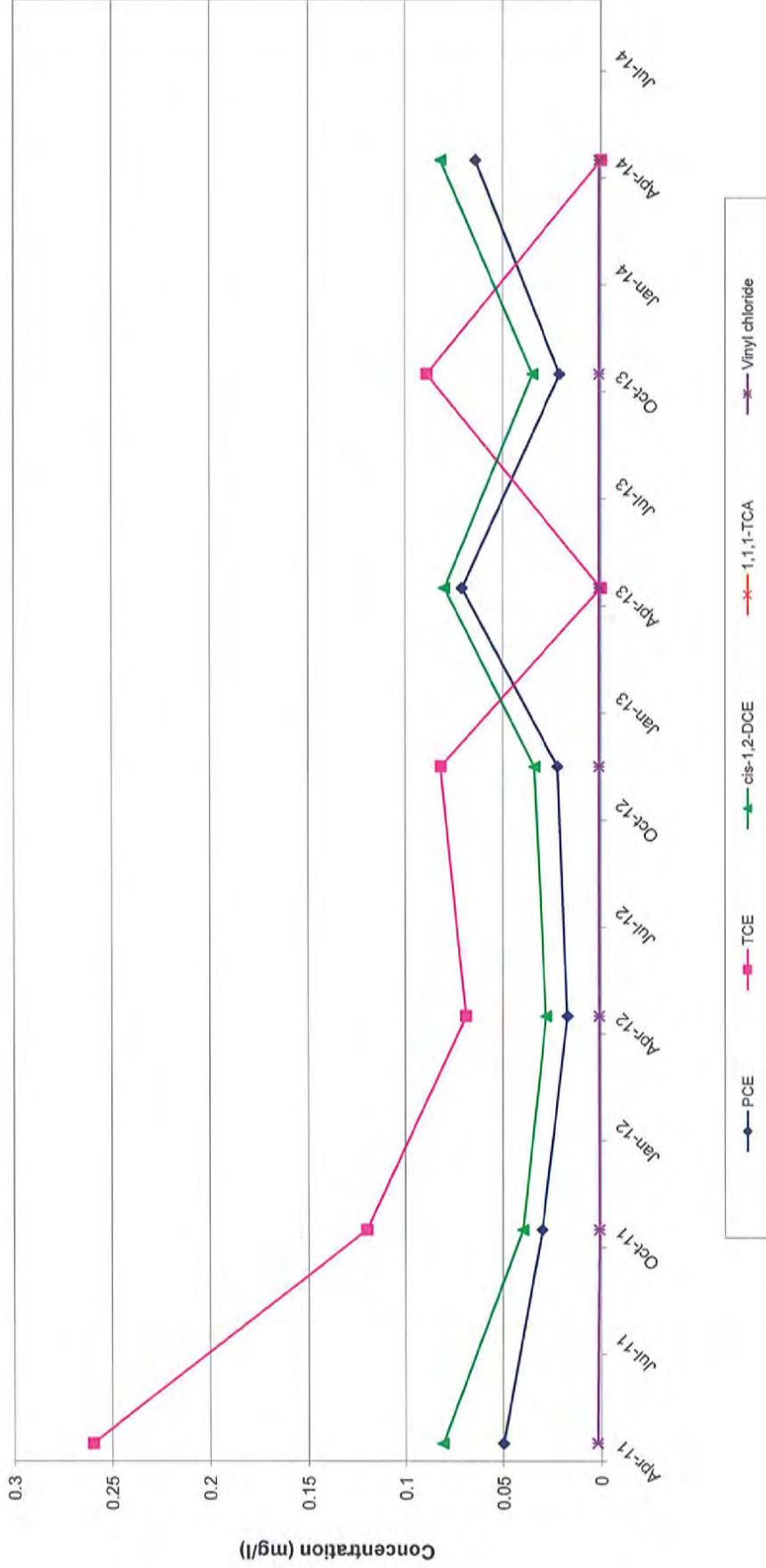


VOC Trends in Well OB-18-DO  
Former Varian Facility Site  
Beverly, Massachusetts



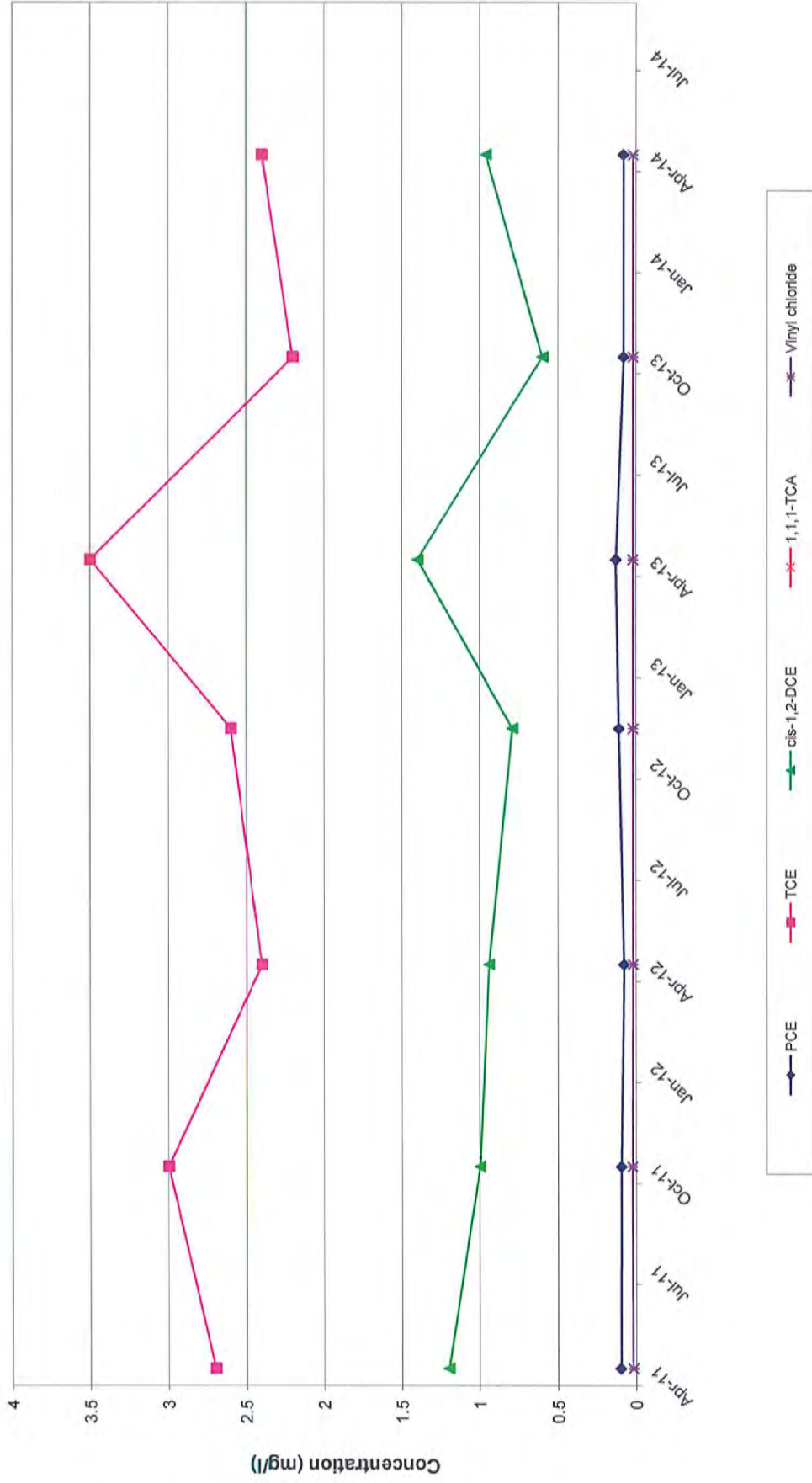
Notes: OB-18-DO is a deep overburden well located at 31 Tozer Road.  
See end of appendix for additional notes.

VOC Trends in Well OB-41-S  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: OB-41-S is a shallow well located at 39 Tozer Road.  
See end of appendix for additional notes.

VOC Trends in Well OB-42-S  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: OB-42-S is a shallow well located at 30 Tozer Road.  
See end of appendix for additional notes.



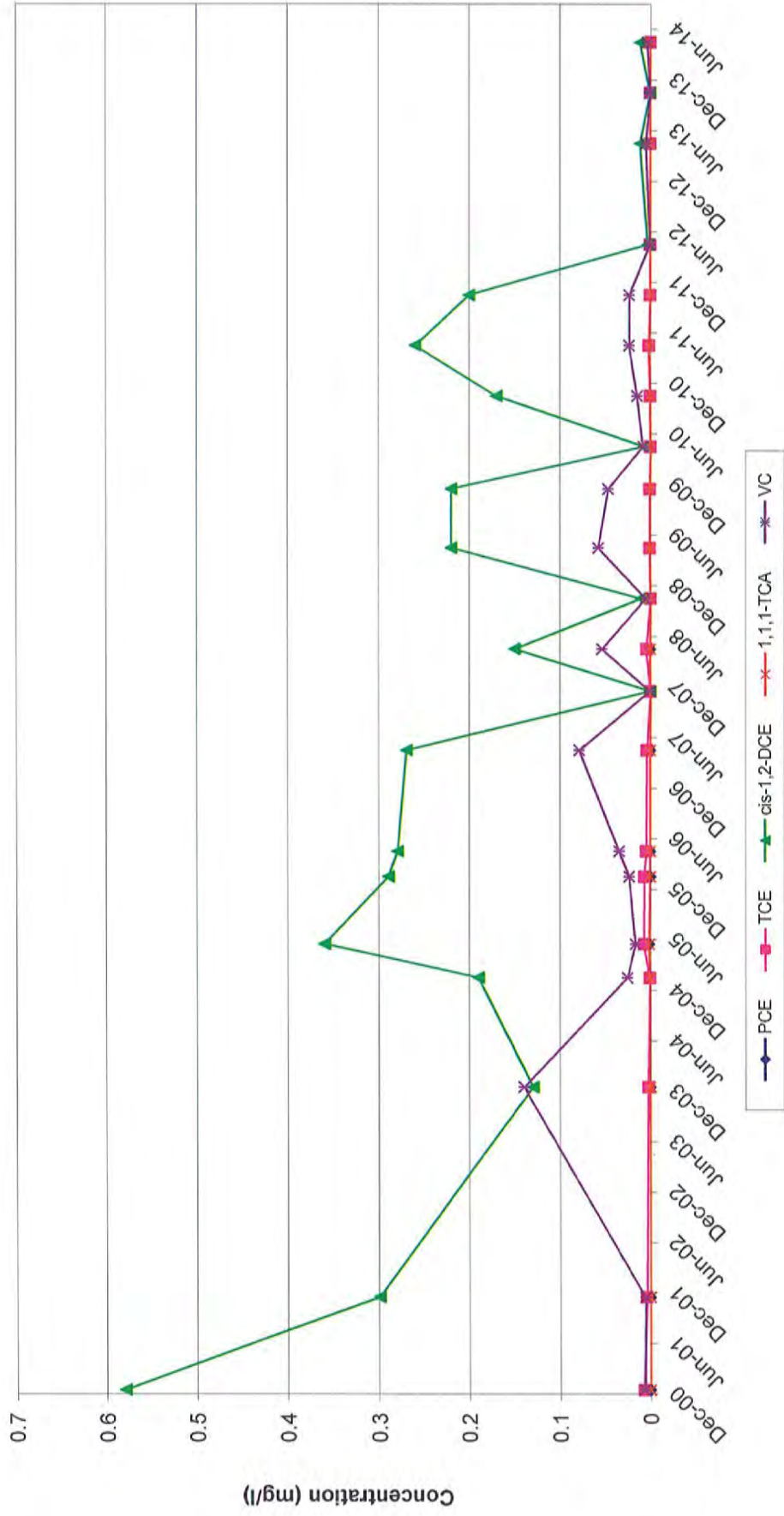
VOC Trends in Well OB-43-S  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: OB-43-S is a shallow well located at 27 Tozer Road.  
See end of appendix for additional notes.

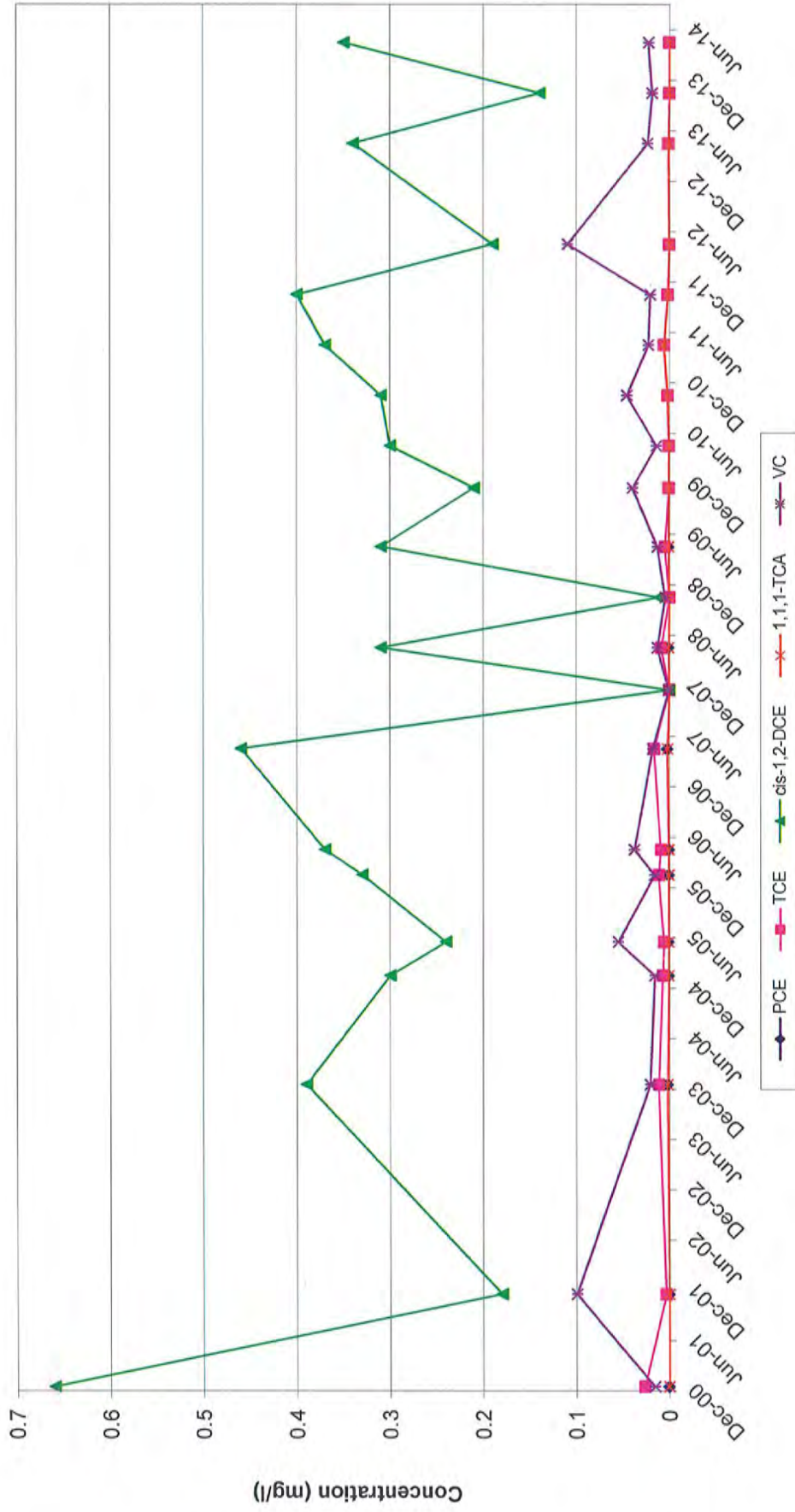
**LONGVIEW/HILL STREET TREATMENT AREA**

VOC Trends in Well BR-6\_ZONE1  
Former Varian Facility Site  
Beverly, Massachusetts



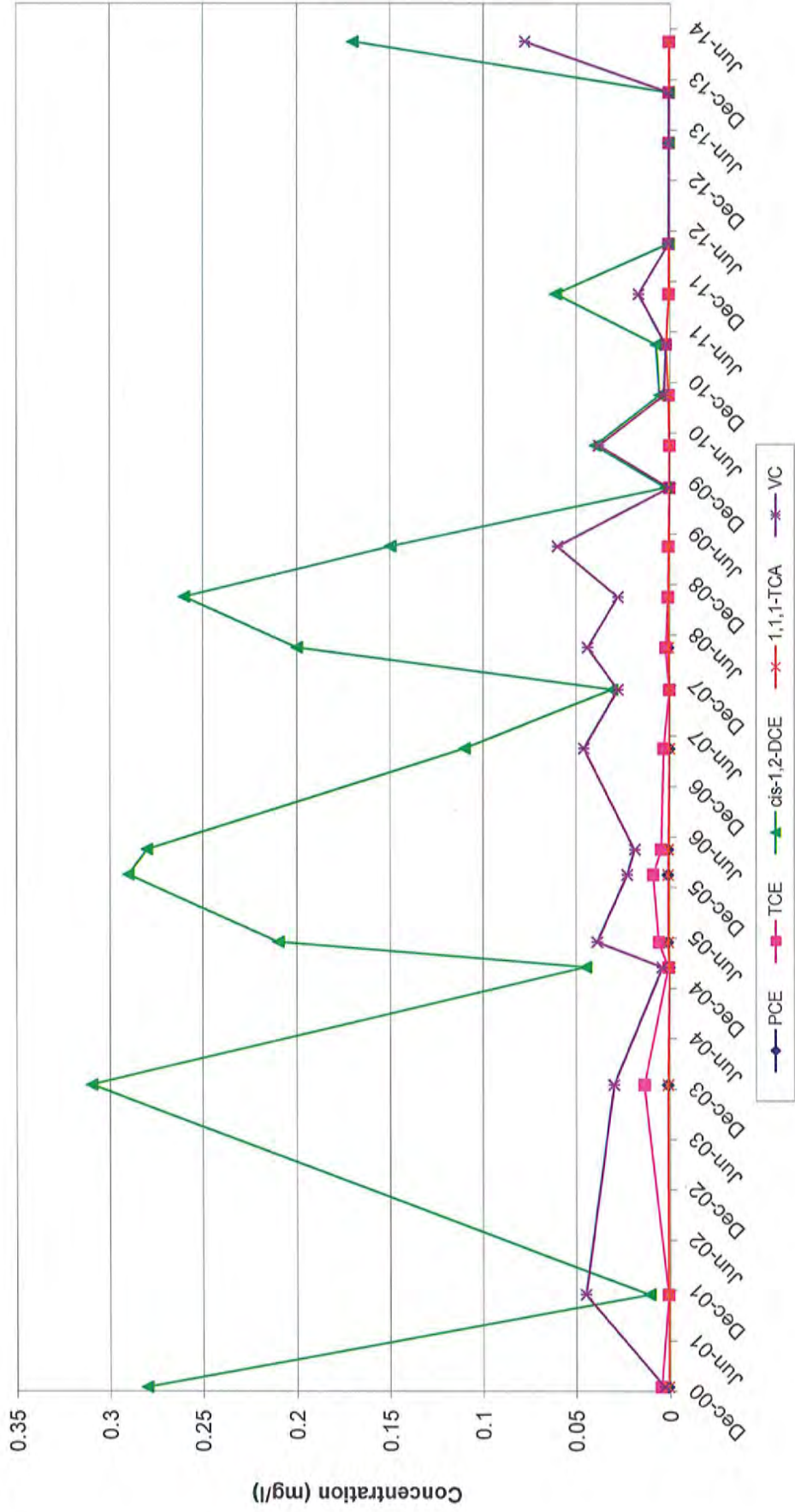
Notes: BR-6 Zone 1 is the deepest zone of a bedrock well on Hill Street.  
See end of appendix for additional notes.

VOC Trends in Well BR-6\_ZONE2  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: BR-6 Zone 2 is the middle depth zone of a bedrock well on Hill Street.  
See end of appendix for additional notes.

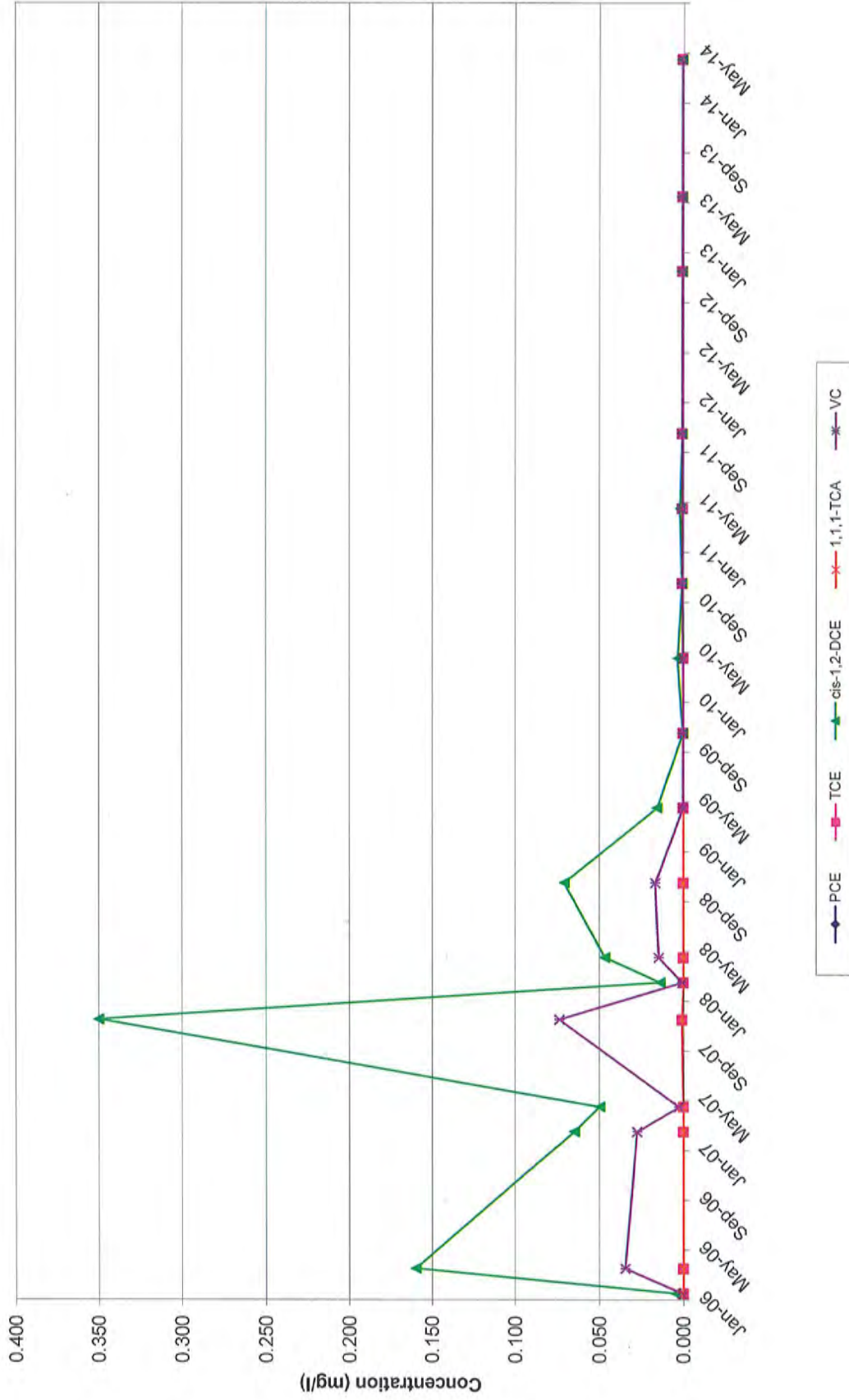
VOC Trends in Well BR-6\_ZONE3  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: BR-6 Zone 3 is the shallowest zone of a bedrock well on Hill Street.  
See end of appendix for additional notes.

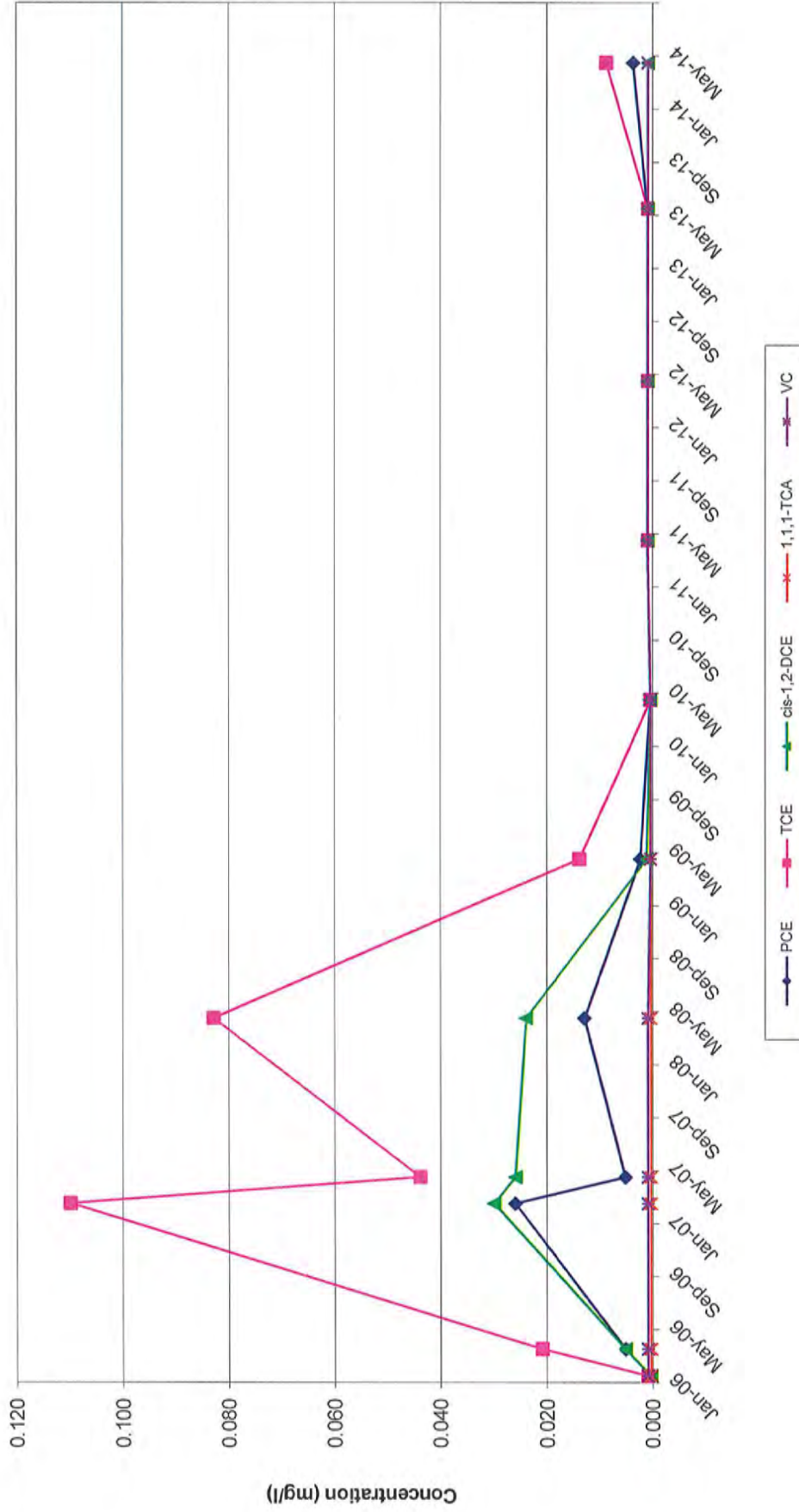


VOC Trends in Well P-9R  
Former Varian Facility Site  
Beverly, Massachusetts



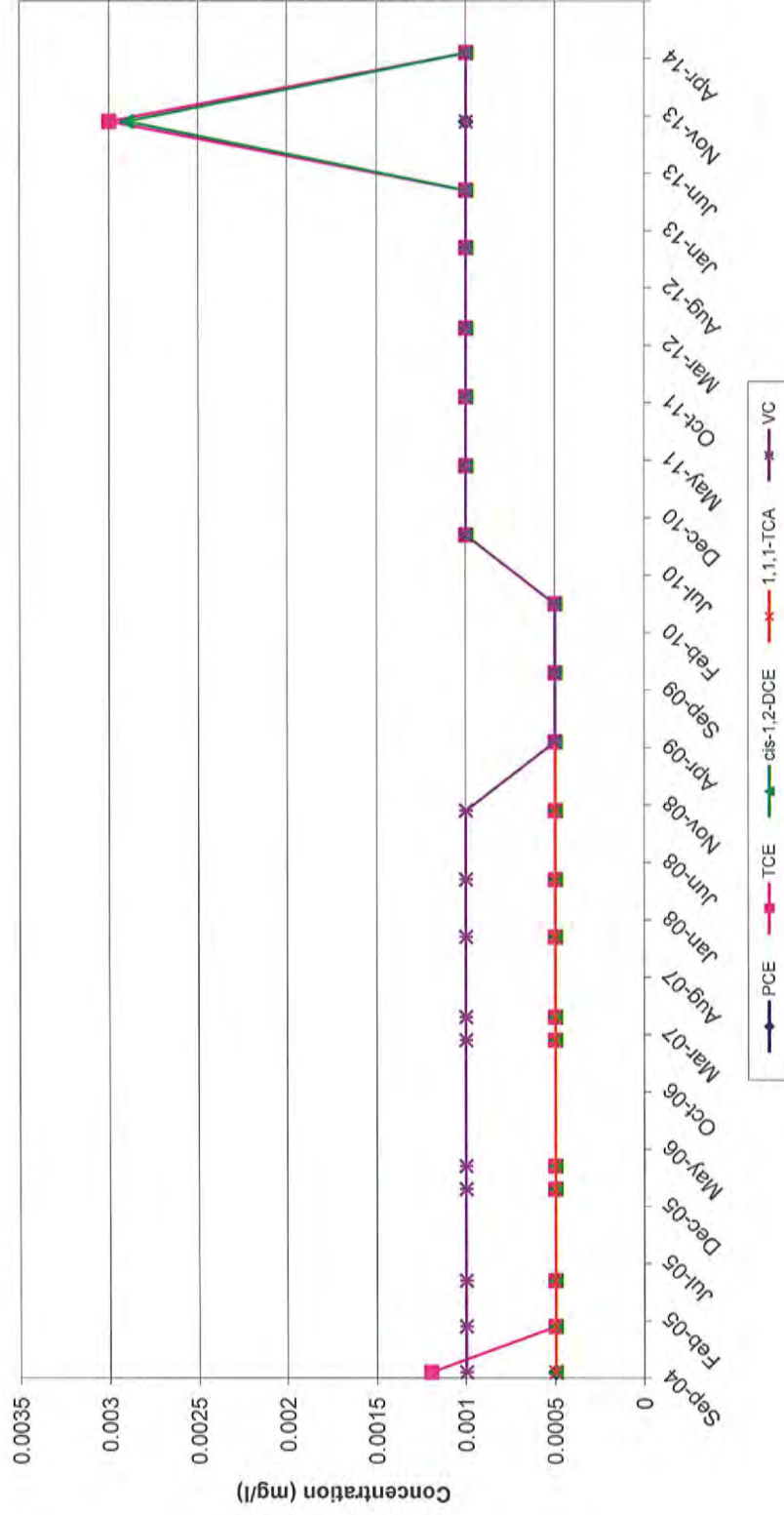
Notes: P-9R is a shallow overburden well located on Hill Street.  
See end of appendix for additional notes.

VOC Trends in Well P-20R  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: P-20R is a shallow overburden well located east of of Longview Terrace in the Longview/Hill Street area. See end of appendix for additional notes.

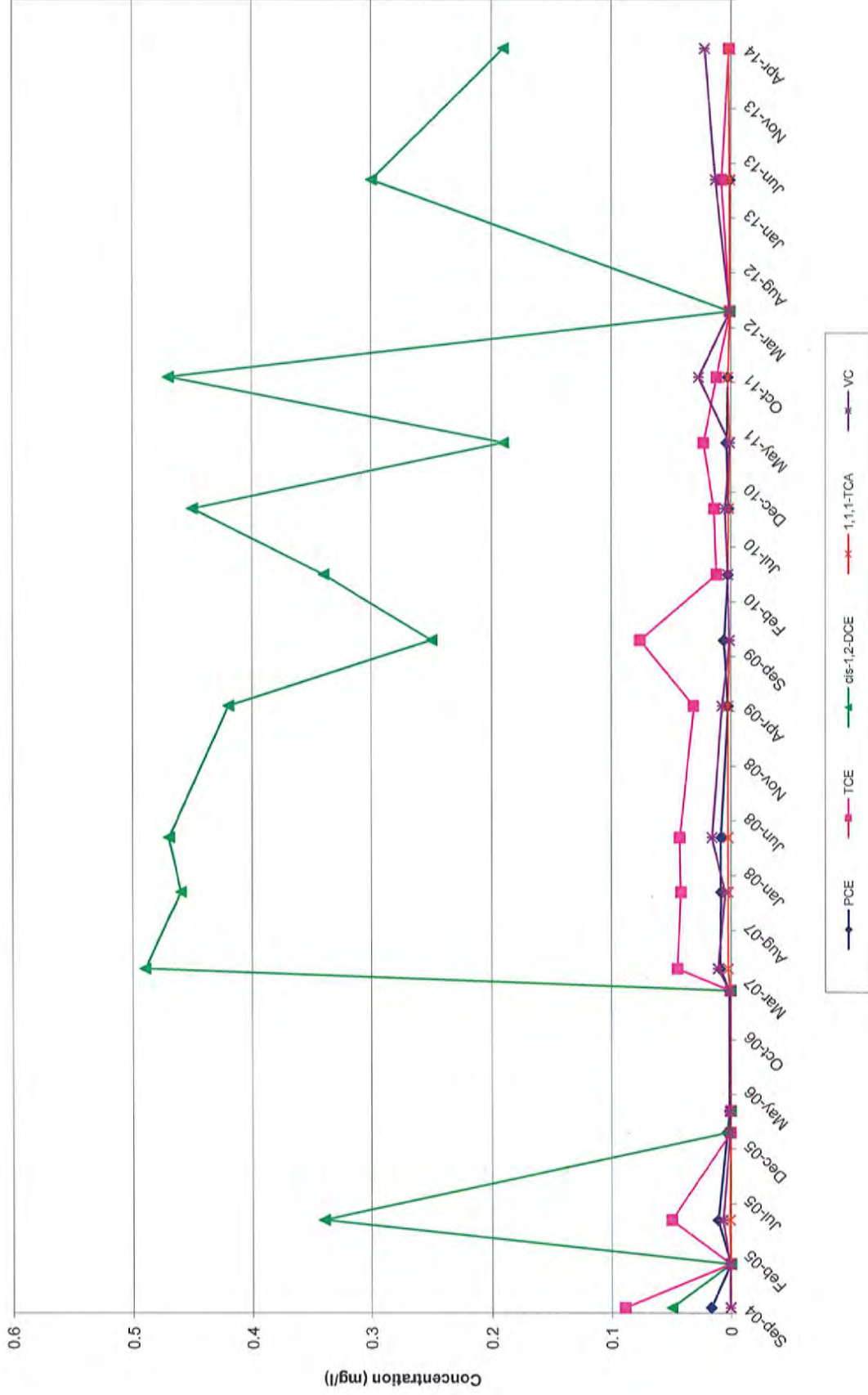
VOC Trends in Well OB-20-S  
Former Varian Facility Site  
Beverly, Massachusetts



Notes: OB20-S is a shallow overburden well south of Sonning Road in the Longview/Hill Street treatment area. See end of appendix for additional notes.

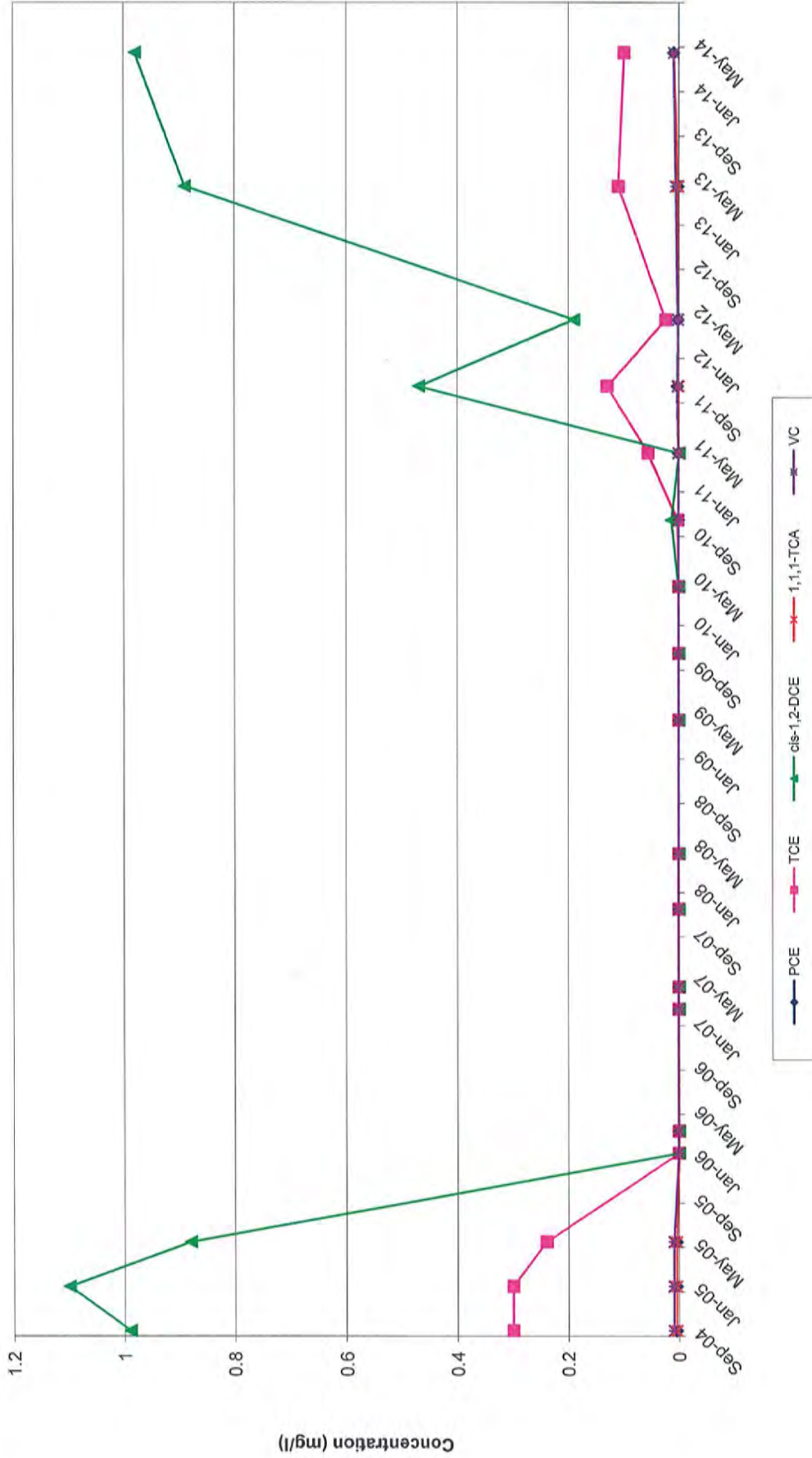


VOC Trends in Well OB-20-DO  
Former Varian Facility Site  
Beverly, Massachusetts



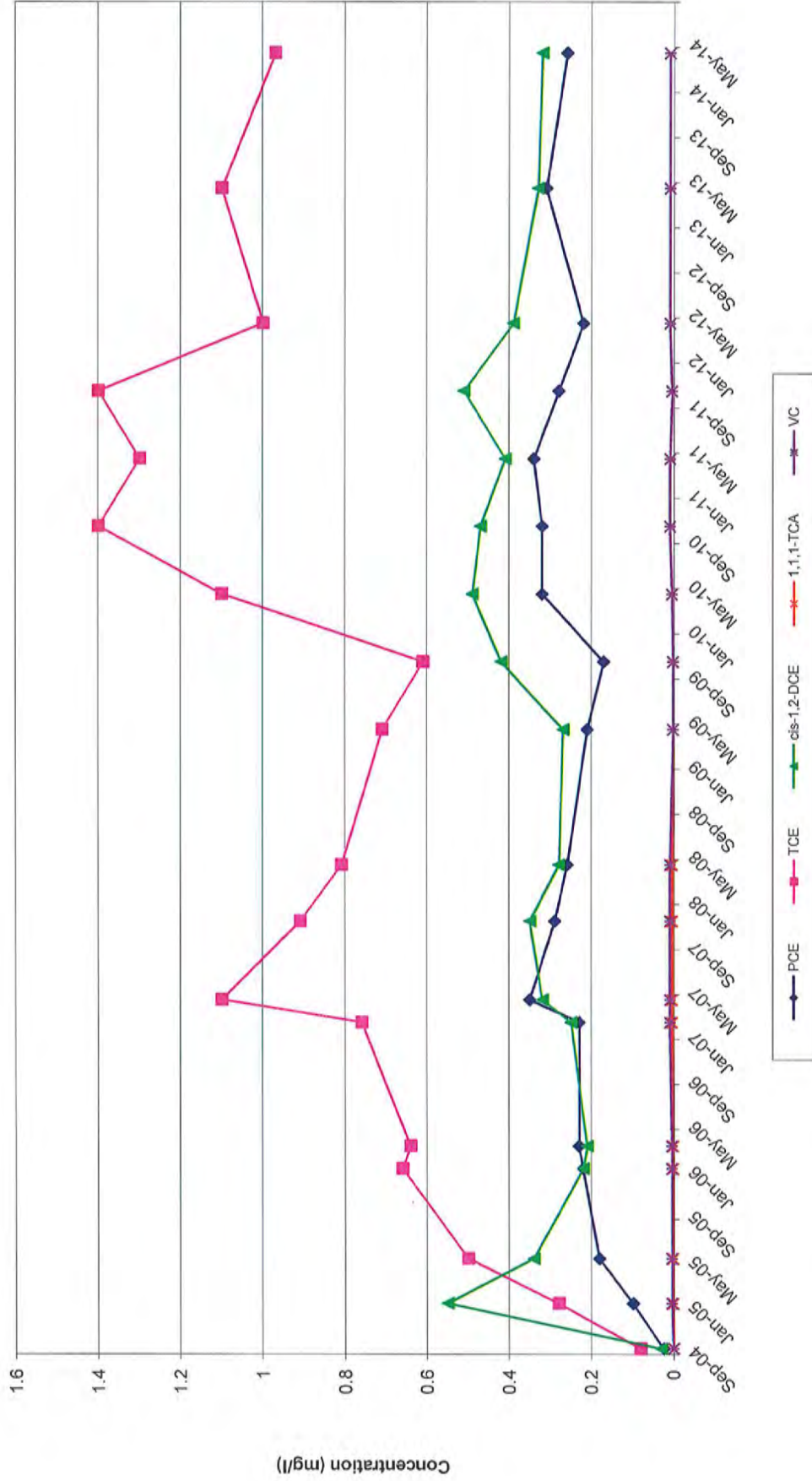
Notes: OB-20-DO is a deep overburden well south of Sonning Road in the Longview/Hill Street treatment area. See end of appendix for additional notes.

VOC Trends in Well OB-20-BR  
 Former Varian Facility Site  
 Beverly, Massachusetts



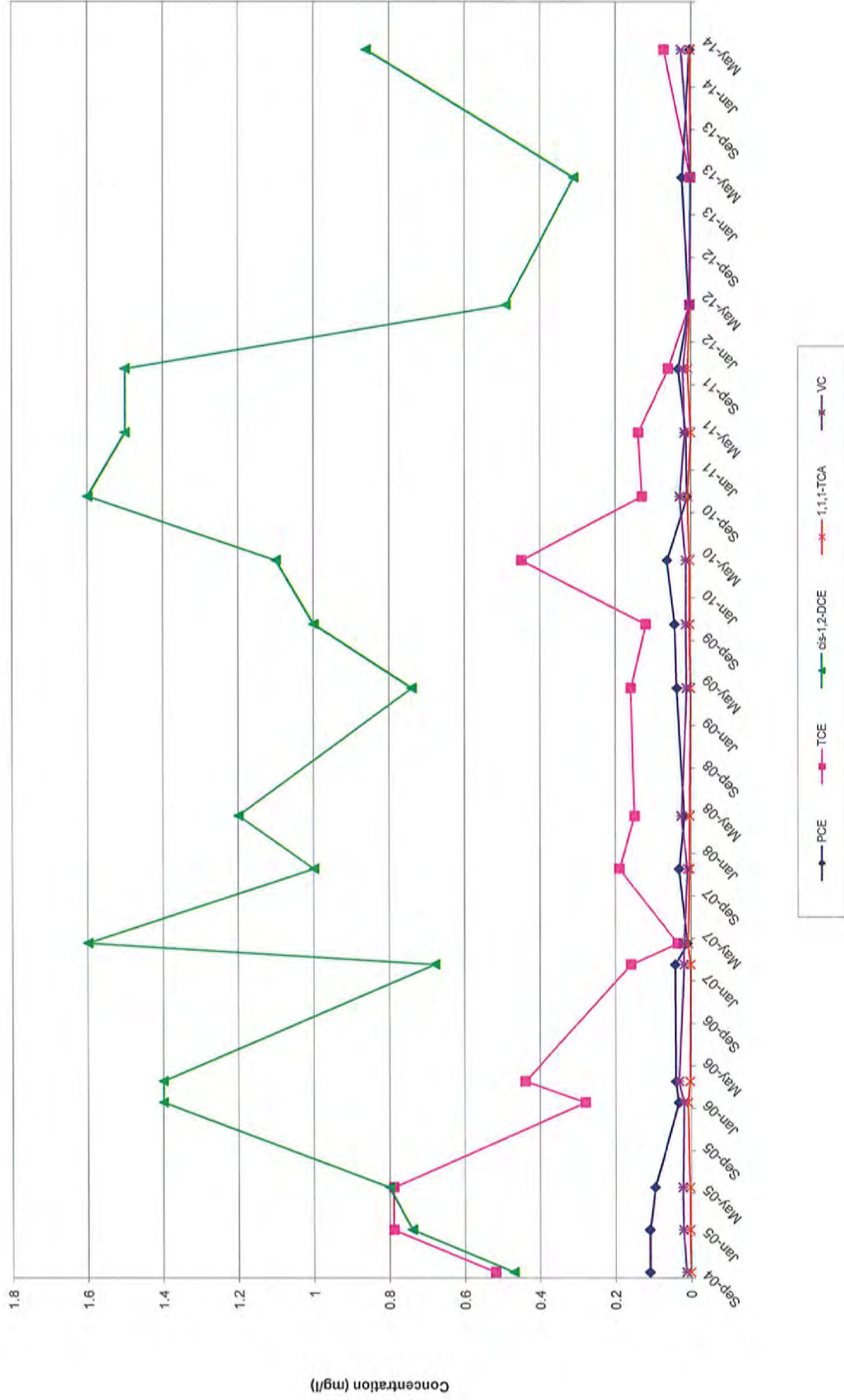
Note: OB-20-BR is a bedrock well south of Sonning Road in the Longview/Hill Street treatment area. See end of appendix for additional notes.

VOC Trends in Well OB-21-DO  
Former Varian Facility Site  
Beverly, Massachusetts



OB-21-DO is a deep overburden well east of Longview Terrace in the Longview/Hill Street area. See end of appendix for additional notes.

VOC Trends in Well OB-21-BR  
 Former Varian Facility Site  
 Beverly, Massachusetts



Note: OB-21-BR is a bedrock well at the Longview/Hill Street Area.  
 See end of appendix for additional notes.