



FEBRUARY 2016 SEMI-ANNUAL GROUNDWATER SAMPLING REPORT

Riverview Site Rotterdam, New York

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ACRONYMS AND ABBREVIATIONS

ALS	ALS Environmental
CB&I	CB&I Environmental & Infrastructure, Inc.
COC	Chain-of-Custody
D&H	Delaware and Hudson
DF	Dilution Factor
DUSR	Data Usability Summary Report
EDD	Electronic Data Deliverable
GE	General Electric Company
ISCO	In-Situ Chemical Oxidation
MRL	Method Reporting Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NELAP	National Environmental Laboratory Accreditation Program
NYSDEC	New York State Department of Environmental Conservation
NYSGWQS	New York State Ground-Water Quality Standards
POTW	Publically Owned Treatment Works
QA/QC	Quality Assurance/Quality Control
RD/RA	Remedial Design/Remedial Action
RPD	Relative Percent Difference
Site	Riverview Site
SMP	Site Management Plan
TCL	Target Compound List
TOGS	Technical and Operational Guidance Series

USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

1.0 INTRODUCTION

The General Electric Company (GE) entered into an Order on Consent with the New York State Department of Environmental Conservation (NYSDEC) in December 2013 to investigate and remediate portions of the Von Roll Industries property (the Riverview Site, or Site) located in Rotterdam, Schenectady County, New York. The Riverview Site is identified as a portion of Block 2 and Lot 2 on the Rotterdam, NY Tax Map ID # 48.-2-8.2. The Site is situated on an approximate 22.12 acre area bounded by a steep embankment and Delaware and Hudson (D&H) Railroad to the north, Campbell Road and the Town of Rotterdam publically owned treatment works (POTW) and Campbell Plastics to the south, residential areas to the east, and the D&H Railroad and Rotterdam Square Mall to the west (see **Figure 1**). See **Figure 2** for Site Property Survey Map.

In February 2014, a Remedial Design/Remedial Action (RD/RA) Work Plan detailing the implementation of the remedial alternative for the Site was finalized. CB&I Environmental and Infrastructure, Inc. (CB&I) was retained by GE to implement the RD/RA at the Site. The selected remedy included the following components: in-situ chemical oxidation (ISCO) injections to treat volatile organic compounds (VOCs) in the soil and groundwater, post-injection groundwater monitoring to assess the performance of the injections, execution and recording of an Environmental Easement to restrict groundwater use and prevent future exposure to any remaining contamination at the Site, and the development and implementation of a Site Management Plan (SMP). The draft SMP, which was submitted to the New York State Department of Environmental Conservation (NYSDEC) in September 2015, details the long-term management of remaining Site impacts as required by the Environmental Easement and will include monitoring, operation and maintenance, and reporting.

This report includes the information from the Year 2 semi-annual monitoring event conducted in February 2016 and a summary of historical monitoring events associated with the RD/RA since October, 2001. All work was performed in accordance with the RD/RA Work Plan as well as GE and CB&I health and safety guidelines.

2.0 SCOPE OF WORK

The work scope of the February 2016 semi-annual groundwater sampling event was to include the collection of samples from 10 monitoring wells and the 7 injection wells. The monitoring wells scheduled for sampling included: VRI-1, VRI-2, VRI-3, VRI-4, VRI-9, GT-7, GT-9/9R, GT-14, GT-15, and GT-16. Samples were also collected from injection wells IW-1, IW-2, IW-3, IW-4, IW-5, IW-6 and IW-7. The sampling locations are shown on **Figure 3**. The purged water was collected in a drum from which one sample was also collected. Quality Assurance/Quality Control (QA/QC) samples, including one Matrix Spike (MS), one Matrix Spike Duplicate (MSD), one field duplicate, and four trip blanks (one per each sample shipment) were included in the work scope. All samples were analyzed for Target Compound List (TCL) VOCs as well as several non-standard VOCs of interest (1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, isopropylbenzene, and n-propylbenzene) via United States Environmental Protection Agency (USEPA) Method 8260C by ALS Environmental (ALS), a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory in Rochester, NY. Following the completion of laboratory analysis, data packages were sent for third party data validation including the preparation of a Data Usability Summary Report (DUSR).

3.0 SAMPLING

Between February 15, 2016 and February 22, 2016, CB&I collected a total of 20 groundwater samples from 16 wells (including QA/QC samples) and the drum of purge water. All sampling was completed in accordance with the RD/RA. The sampled wells are as follows: VRI-1, VRI-2, VRI-3, VRI-4, VRI-9, IW-1, IW-2, IW-3, IW-4, IW-5, IW-6, IW-7, GT-7, GT-9/9R, GT-14, and GT-15. Due to a well obstruction, samples could not be collected from monitoring well GT-16. Historical results for GT-16 are provided in **Figure 4**. The sampling locations are shown on **Figure 3**. For QA/QC, one field duplicate sample was collected from IW-3. Also, one MS and one MSD sample were collected from IW-7. One trip blank from ALS was submitted with each Chain of Custody (COC) totaling four trip blanks for the sampling event.

Prior to sampling, each well was gauged for depth to water and depth to bottom measurements using a water level meter. These measurements were recorded to the nearest 0.01 foot from the top of the casing of each well. The wells were purged and sampled utilizing modified low flow techniques. The wells were purged at low flow rates using a SamplePro bladder pump with a QED compressor. The pump was positioned such that the intake was located at the midpoint of the well screen; the wells were purged until field parameters stabilized or at least three well volumes were evacuated. Groundwater geochemical field parameter data was collected and documented on field data sheets prior to sample collection. These field parameters included temperature, pH, conductivity, oxidation reduction potential, dissolved oxygen, and turbidity (as measured using a YSI multi-parameter system with a flow cell). Field data sheets are included in **Appendix A**. All purge water was collected in a properly labeled 55-gallon container (drum), and staged for subsequent characterization and off-site disposal by CB&I. The interface probe and all other applicable equipment was cleaned using non-phosphate soap and distilled water rinse between each well location.

Once the field parameters properly stabilized, groundwater samples were collected and transferred into pre-cleaned USEPA-approved sample containers provided by ALS. Once collected, samples were labeled, packed on ice, and shipped on a daily basis to ALS. All samples were shipped under proper COC to ALS to be analyzed for TCL VOCs as well as several non-standard VOCs of interest (1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, isopropylbenzene, and n-propylbenzene) via USEPA analysis method 8260C and USEPA prep method 5030C. All samples were submitted for Tier II data packages with a standard, two-week data turnaround. Copies of the COC documentation are provided in **Appendix B**.

4.0 ANALYTICAL RESULTS

The analytical results for the February 2016 semi-annual groundwater sampling event are summarized on **Table 1** and **Figure 3**. Copies of the complete laboratory analytical reports are provided in **Appendix B** and Electronic Data Deliverables (EDDs) are provided in **Appendix C**. A review of the analytical reports, duplicate sample, and trip blanks indicates that the data are considered valid and useable. These analytical results have been compared to the New York State Ground-Water Quality Standards (NYSGWQS) of 5 µg/L as defined in the Division of Water Technical and Operational Guidance Series (TOGS 1.1.1). This comparison has been made for informational purposes only.

Samples collected from all monitoring wells were non-detect for VOCs above the laboratory method reporting limit (MRL) except monitoring well GT-15 which exhibited 2.2 µg/L of TCE,, which is below the NYSDEC groundwater standard of 5 µg/L. VOCs in monitoring well VRI-1, which historically exhibited total VOC concentrations exceeding 29,000 µg/L, have decreased to non-detectable levels based on the results of the February 2016 sampling event.

The analytical results for the seven injection wells all exhibited at least one detection for VOCs above the MRL. Total VOC concentrations per well (excluding non-detections) ranged from 46 µg/L in IW-7 to 17,280 µg/L in IW-5. TCE was not detected in any of the injection wells.

The concentrations for the VOCs listed above are provided in **Figure 3** and all analytical results for the sampling round are summarized on **Table 1**. The February 2016 semi-annual sampling event results have been compared to historical sampling results in **Figure 4**.

4.1 Quality Control

QA/QC samples were collected and analyzed to evaluate field and laboratory quality control. The QA/QC samples included one trip blank accompanying each COC from February 16-17, 2016, February 18, 2016, February 19, 2016, and February 22, 2016, as well as one duplicate sample of IW-3 and one MS and one MSD sample of IW-7. CB&I personnel evaluated the results of these sample analyses and the additional laboratory-provided data.

According to ALS, all of the sample coolers were received in good condition at temperatures between 0°C and 6°C. Due to a foamy matrix, two samples (IW-2 and IW-6) were analyzed at a dilution factor (DF) to bring the target analysis within calibration range. The Site specific QC

performed using the MS and MSD samples of IW-7 was deemed to be acceptable. The method blanks associated with all samples were free of contamination.

For third-party validation, the analytical results were transmitted to Data Validation Services of North Creek, NY. Data Validation is currently being completed and the DUSR is anticipated to be finalized in May, 2016.

4.1.1 Trip Blank Analysis

Trip blanks were prepared and transported with the sample coolers to and from the laboratory. All laboratory trip blank vials, which accompanied the sample containers for the volatile organic analyses vials, arrived at the lab intact. The trip blank vials were analyzed for VOCs (SW-846 Method 8260C). All trip blanks were free of VOC detections with the exception of Trip Blank 4 (collected on February 22, 2016), which contained 5.4 µg/L of acetone, which is above the 5.0 µg/L MRL. Despite this, two of the three samples collected on the same date did not contain any detections for acetone (GT-14 and VRI-3). The results for the trip blank analyses are included in **Table 1**.

4.1.2 Field Duplicate and MS/MSD Sample Analysis

One blind field duplicate sample (from IW-3) was collected during the 2016 semi-annual groundwater sampling event. The primary and duplicate samples were collected in a manner so as to assure the greatest possible similarity between them. All sample containers for the VOC analyses were filled from the same tubing and groundwater was split between the primary and duplicate sample bottles. The analytical results from both samples are very similar and are shown in **Table 1**. One MS and one MSD sample were collected from IW-7 to measure the precision of the laboratory analysis method. ALS has confirmed that the MS/MSD percent recoveries and the relative percent differences (RPDs) are acceptable. The full results from the MS/MSD analyses are provided in **Appendix B**.

5.0 GENERAL SUMMARY

The February 2016 semi-annual groundwater sampling event at the Riverview Site was successfully completed in accordance with the RD/RA Work Plan between February 15, 2016 and February 22, 2016. However, due to a well obstruction, samples could not be collected from monitoring well GT-16. Samples were collected from 9 groundwater monitoring wells, 7 injection wells, and one drum of purge water. The waste water drum will be disposed off-site in accordance with the RD/RA Waste Management Plan. One duplicate, one MS, one MSD, and four trip blank samples were also collected for QA/QC purposes. In general, the field parameters and analytical results obtained during this event are consistent with those from previous sampling events. The next semi-annual groundwater sampling event (Round 5 of the required monitoring outlined in the RD/RA) is tentatively scheduled for August 2016. The August 2016 groundwater sampling is to include the collection of groundwater and associated QA/QC samples from the same wells sampled in the February 2016 sampling event.

Table 1
Groundwater Analytical Summary -2016 VOCs
VOCs by Method 8260C
VRI-Riverview

Site ID	GT-7	GT-9R	GT-14	GT-15	IW-1	IW-2
Field Sample ID	GT-7	GT-9R	GT-14	GT-15	IW-1	IW-2
Sample Matrix	Water	Water	Water	Water	Water	Water
Sample Type/ Analysis Method	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C
Sample Date	2/17/2016	2/16/2016	2/22/2016	2/19/2016	2/18/2016	2/16/2016
Analyte (µg/L)	Primary	Primary	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane (TCA)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,2,3-Trichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,2,4-Trichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,2,4-Trimethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	61	100
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	20 U
1,2-Dibromoethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,2-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,2-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,2-Dichloropropane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,3,5-Trimethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	24	100
1,3-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,4-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
1,4-Dioxane	40 U	40 U	40 U	40 U	40 U	400 U
2-Butanone (MEK)	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U
2-Hexanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U
4-Methyl-2-pentanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Bromochloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Bromodichloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Bromoform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Bromomethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Carbon Disulfide	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Chloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Chloroform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Chloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Cyclohexane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Dibromochloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Dichloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Ethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Isopropylbenzene (Cumene)	1.0 U	1.0 U	1.0 U	1.0 U	4.1	22
Methyl Acetate	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	20 U
Methyl tert-Butyl Ether	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Methylcyclohexane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Styrene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Tetrachloroethene (PCE)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Trichloroethene (TCE)	1.0 U	1.0 U	1.0 U	2.2	1.0 U	10 U
Trichlorofluoromethane (CFC 11)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
cis-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
cis-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
m,p-Xylenes	2.0 U	2.0 U	2.0 U	2.0 U	3.5	20 U
n-Propylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	5.9	19
o-Xylene	1.0 U	1.0 U	1.0 U	1.0 U	40	76
trans-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
trans-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U

Notes:

Bold - Analyte detected by laboratory.

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.

Grey Shading - Detections exceeding the NYSDEC NYSGWQS defined in TOGS 1.1.1

Table 1
Groundwater Analytical Summary -2016 VOCs
VOCs by Method 8260C
VRI-Riverview

Site ID	IW-3	IW-3	IW-4	IW-5	IW-6	IW-7
Field Sample ID	IW-3	DUP	IW-4	IW-5	IW-6	IW-7
Sample Matrix	Water	Water	Water	Water	Water	Water
Sample Type/ Analysis Method	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C
Sample Date	2/17/2016	2/17/2016	2/17/2016	2/18/2016	2/19/2016	2/18/2016
Analyte (µg/L)	Primary	Primary	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane (TCA)	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,1,2,2-Tetrachloroethane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,1,2-Trichloroethane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,1-Dichloroethane (1,1-DCA)	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,1-Dichloroethene (1,1-DCE)	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,2,3-Trichlorobenzene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,2,4-Trichlorobenzene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,2,4-Trimethylbenzene	3100	3300	640	8800	300	7
1,2-Dibromo-3-chloropropane (DBCP)	40 U	40 U	10 U	100 U	20 U	2.0 U
1,2-Dibromoethane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,2-Dichlorobenzene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,2-Dichloroethane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,2-Dichloropropane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,3,5-Trimethylbenzene	3300	3400	720	4400	380	26
1,3-Dichlorobenzene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,4-Dichlorobenzene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
1,4-Dioxane	800 U	800 U	200 U	2000 U	400 U	40 U
2-Butanone (MEK)	100 U	100 U	25 U	250 U	50 U	5.0 U
2-Hexanone	100 U	100 U	25 U	250 U	50 U	5.0 U
4-Methyl-2-pentanone	100 U	100 U	25 U	250 U	50 U	5.0 U
Acetone	100 U	100 U	25 U	250 U	50 U	5.0 U
Benzene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Bromochloromethane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Bromodichloromethane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Bromoform	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Bromomethane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Carbon Disulfide	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Carbon Tetrachloride	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Chlorobenzene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Chloroethane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Chloroform	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Chloromethane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Cyclohexane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Dibromochloromethane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Dichlorodifluoromethane (CFC 12)	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Dichloromethane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Ethylbenzene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Isopropylbenzene (Cumene)	170	170	6.5	520	94	1.0 U
Methyl Acetate	40 U	40 U	10 U	100 U	20 U	2.0 U
Methyl tert-Butyl Ether	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Methylcyclohexane	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Styrene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Tetrachloroethene (PCE)	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Toluene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Trichloroethene (TCE)	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Trichlorofluoromethane (CFC 11)	20 U	20 U	5.0 U	50 U	10 U	1.0 U
Vinyl Chloride	20 U	20 U	5.0 U	50 U	10 U	1.0 U
cis-1,2-Dichloroethene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
cis-1,3-Dichloropropene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
m,p-Xylenes	110	110	10 U	180	35	2.0 U
n-Propylbenzene	170	170	5.0 U	580	120	1.0 U
o-Xylene	1600	1700	200	2800	260	13
trans-1,2-Dichloroethene	20 U	20 U	5.0 U	50 U	10 U	1.0 U
trans-1,3-Dichloropropene	20 U	20 U	5.0 U	50 U	10 U	1.0 U

Notes:

Bold - Analyte detected by laboratory.

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.

Grey Shading - Detections exceeding the NYSDEC NYSGWQS defined in TOGS 1.1.1

Table 1
Groundwater Analytical Summary -2016 VOCs
VOCs by Method 8260C
VRI-Riverview

Site ID	VRI-1	VRI-2	VRI-3	VRI-4	VRI-9	DRUM
Field Sample ID	VRI-1	VRI-2	VRI-3	VRI-4	VRI-9	DRUM
Sample Matrix	Water	Water	Water	Water	Water	Water
Sample Type/ Analysis Method	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C
Sample Date	2/18/2016	2/16/2016	2/22/2016	2/19/2016	2/17/2016	2/22/2016
Analyte (µg/L)	Primary	Primary	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane (TCA)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromoethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	59
1,3-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane	40 U	40 U	40 U	40 U	40 U	40 U
2-Butanone (MEK)	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	25
2-Hexanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	11
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichloromethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene (Cumene)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methyl tert-Butyl Ether	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene (PCE)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene (TCE)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC 11)	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m,p-Xylenes	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
n-Propylbenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	81
trans-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

Bold - Analyte detected by laboratory.

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.

Grey Shading - Detections exceeding the NYSDEC NYSGWQS defined in TOGS 1.1.1

Table 1
Groundwater Analytical Summary -2016 VOCs
VOCs by Method 8260C
VRI-Riverview

Site ID	TRIP BLANK 1	TRIP BLANK 2	TRIP BLANK 3	TRIP BLANK 4
Field Sample ID	TRIP BLANK 1	TRIP BLANK 2	TRIP BLANK 3	TRIP BLANK
Sample Matrix	Water	Water	Water	Water
Sample Type/ Analysis Method	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C	VOCs / 8260C
Sample Date	2/17/2016	2/18/2016	2/19/2016	2/22/2016
Analyte (µg/L)	Primary	Primary	Primary	Primary
1,1,1-Trichloroethane (TCA)	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0 U	2.0 U	2.0 U
1,2-Dibromoethane	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dioxane	40 U	40 U	40 U	40 U
2-Butanone (MEK)	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-pentanone	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.4
Benzene	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0 U	1.0 U	1.0 U
Dichloromethane	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene (Cumene)	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	2.0 U	2.0 U	2.0 U	2.0 U
Methyl tert-Butyl Ether	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene (PCE)	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene (TCE)	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC 11)	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U
m,p-Xylenes	2.0 U	2.0 U	2.0 U	2.0 U
n-Propylbenzene	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

Bold - Analyte detected by laboratory.

U - Analyte was analyzed for but not detected.

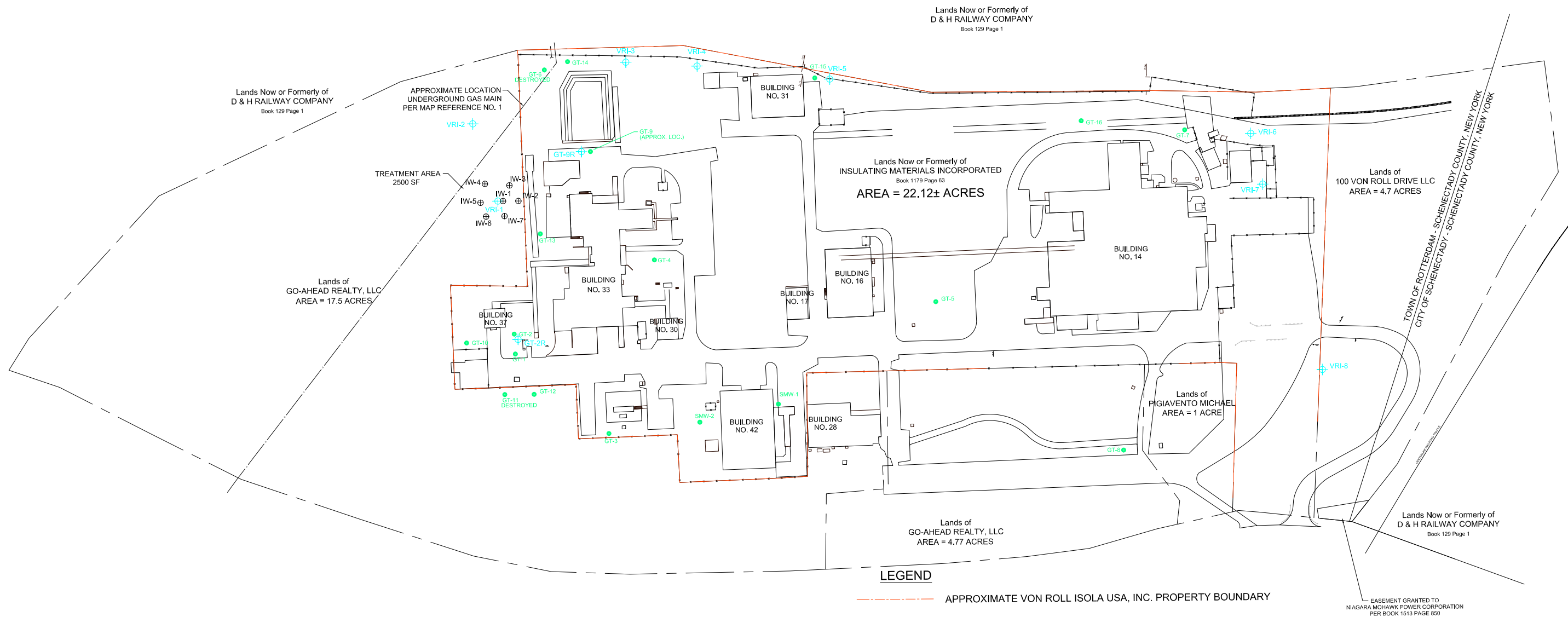
The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.

Grey Shading - Detections exceeding the NYSDEC NYSGWQS defined in TOGS 1.1.1



CB&I E&I ENGINEERING OF NEW YORK, P.C.

DESIGNED BY: MJS	GENERAL ELECTRIC COMPANY VON ROLL ISOLA USA, INC. SCHENECTADY, NEW YORK SITE LOCATION MAP			
DRAWN BY: DDG				
CHECKED BY: MJS				
APPROVED BY: MJS	DATE: 12/07/15	SCALE: NONE	DRAWING NO. 152587-D6	FIGURE NO. 1



NOTE:
ALL PROPERTY BOUNDARIES SHOWN ARE APPROXIMATE.

LEGEND

- | | |
|---|--|
|  | APPROXIMATE VON ROLL ISOLA USA, INC. PROPERTY BOUNDARY |
|  | PROPERTY BOUNDARY LINE |
|  | CHAIN LINK FENCE |
|  | BUILDING |
|  | GAS |
|  | GT-12
EXISTING GROUNDWATER MONITORING WELL |
|  | VR1-1
2001 GROUNDWATER MONITORING WELL |
|  | VRI-9
2011 GROUNDWATER MONITORING WELL |
|  | IW-2
AUGUST 2014 ISCO INJECTION WELL |



CB&I E&I ENGINEERING OF NEW YORK, P.C.

DESIGNED BY:
MJS

GENERAL ELECTRIC COMPANY
VON ROLL ISOLA USA, INC.
SCHENECTADY, NEW YORK

DRAWN BY:
DDG

SITE SURVEY MAP

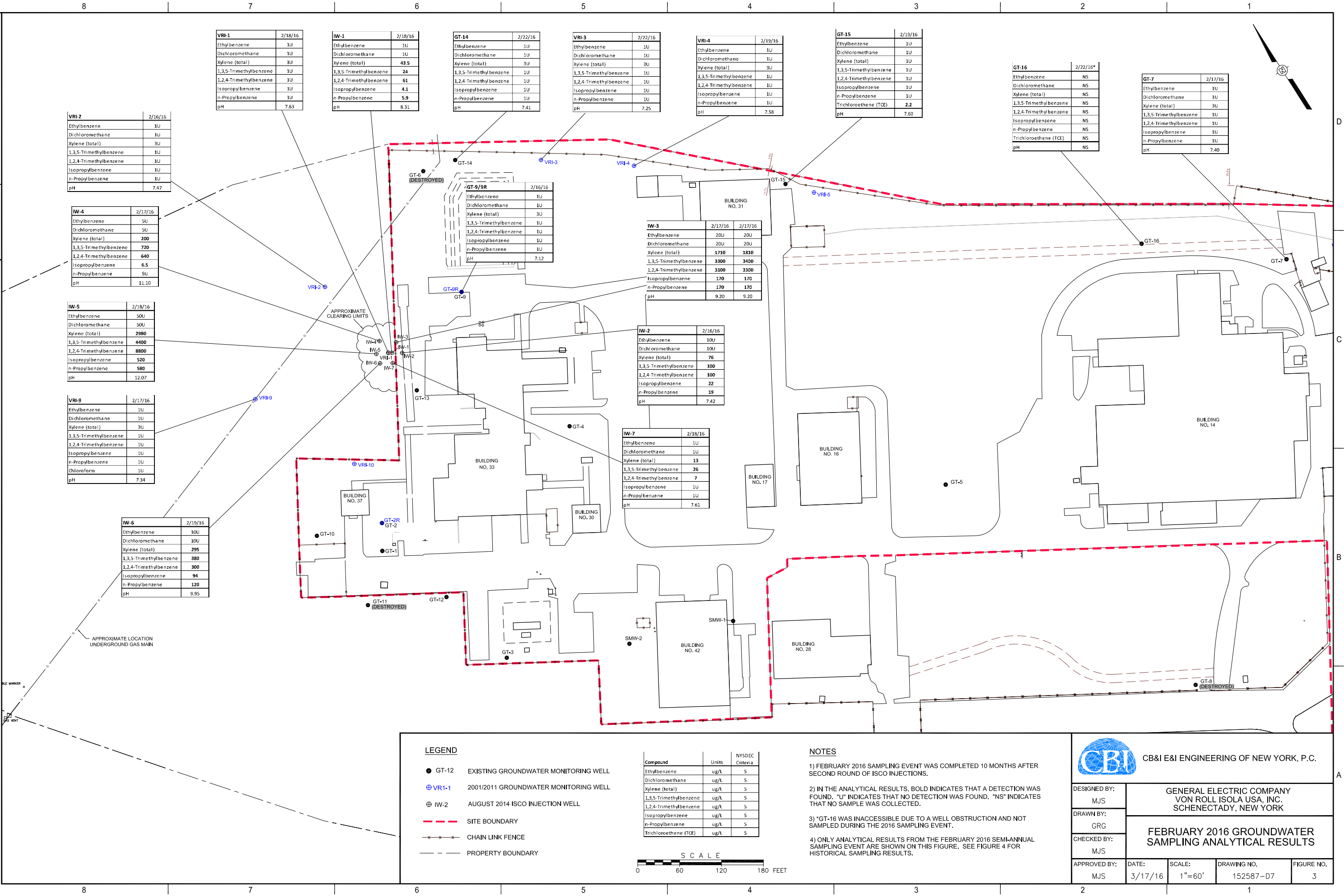
APPROVED BY:
MJS

DATE:
12/07/15

SCALE:
1"=30'

AWING NO.
152587-D5

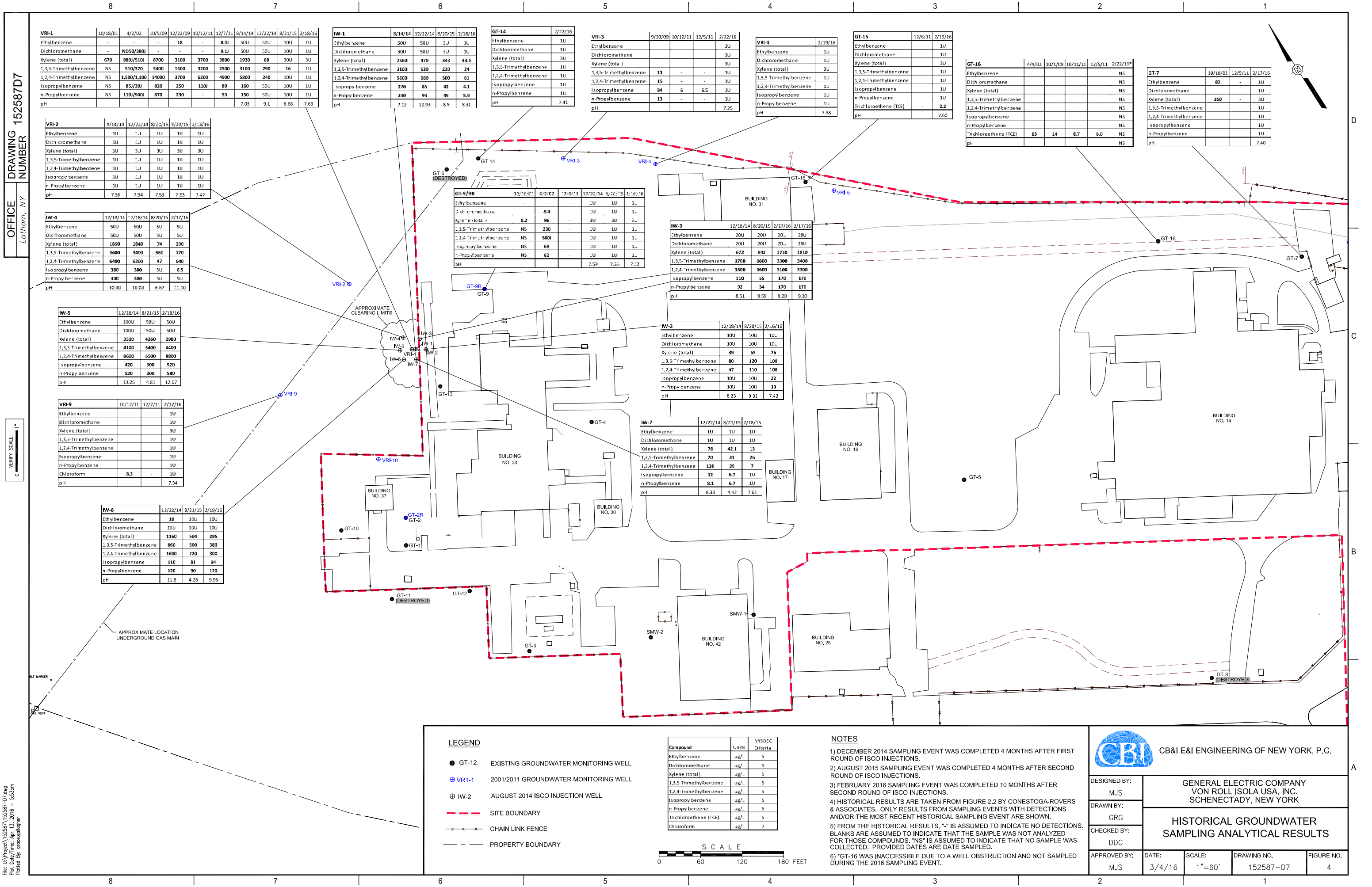
FIGURE NO.
2



CB&I E&I ENGINEERING OF NEW YORK, P.C.

DESIGNED BY:
MJS
DRAWN BY:
GRG
CHECKED BY:
MJS
APPROVED BY:
MJS

GENERAL ELECTRIC COMPANY
VON ROLL ISOLA USA, INC.
SCHENECTADY, NEW YORK
**FEBRUARY 2016 GROUNDWATER
SAMPLING ANALYTICAL RESULTS**
DATE: 3/17/16
SCALE: 1"=60'
DRAWING NO. 152587-D7
FIGURE NO. 3



File: U:\Project\152587\152587-07.dwg
Plot Date/Time: Apr 13, 2016 - 5:53pm
Plotted By: greg.gallagher

OFFICE
Latnam, NY
DRAWING
NUMBER
152587D7

VERIFY SCALE
0 1" = 60'

- LEGEND**
- GT-12 EXISTING GROUNDWATER MONITORING WELL
 - ⊕ VR-1-1 2001/2011 GROUNDWATER MONITORING WELL
 - ⊕ IW-2 AUGUST 2014 ISCO INJECTION WELL
 - - - SITE BOUNDARY
 - - - CHAIN LINK FENCE
 - - - PROPERTY BOUNDARY

Compound	Units	NYSDEC Criteria
Ethylbenzene	ug/L	5
Dichloromethane	ug/L	5
Xylene (total)	ug/L	5
1,3,5-Trimethylbenzene	ug/L	5
1,2,4-Trimethylbenzene	ug/L	5
Isopropylbenzene	ug/L	5
n-Propylbenzene	ug/L	5
Trichloroethene (TCE)	ug/L	5
Chloroform	ug/L	7

NOTES

1) DECEMBER 2014 SAMPLING EVENT WAS COMPLETED 4 MONTHS AFTER FIRST ROUND OF ISCO INJECTIONS.

2) AUGUST 2015 SAMPLING EVENT WAS COMPLETED 4 MONTHS AFTER SECOND ROUND OF ISCO INJECTIONS.

3) FEBRUARY 2016 SAMPLING EVENT WAS COMPLETED 10 MONTHS AFTER SECOND ROUND OF ISCO INJECTIONS.

4) HISTORICAL RESULTS ARE TAKEN FROM FIGURE 2.2 BY CONESTOGA-ROVERS & ASSOCIATES. ONLY RESULTS FROM SAMPLING EVENTS WITH DETECTIONS AND/OR THE MOST RECENT HISTORICAL SAMPLING EVENT ARE SHOWN.

5) FROM THE HISTORICAL RESULTS, "-" IS ASSUMED TO INDICATE NO DETECTIONS. BLANKS ARE ASSUMED TO INDICATE THAT THE SAMPLE WAS NOT ANALYZED FOR THOSE COMPOUNDS. "NS" IS ASSUMED TO INDICATE THAT NO SAMPLE WAS COLLECTED. PROVIDED DATES ARE DATE SAMPLED.

6) *GT-16 WAS INACCESSIBLE DUE TO A WELL OBSTRUCTION AND NOT SAMPLED DURING THE 2016 SAMPLING EVENT.

CB&I E&I ENGINEERING OF NEW YORK, P.C.

DESIGNED BY: MJS

DRAWN BY: GRG

CHECKED BY: DDG

APPROVED BY: MJS

GENERAL ELECTRIC COMPANY
VON ROLL ISOLA USA, INC.
SCHENECTADY, NEW YORK

**HISTORICAL GROUNDWATER
SAMPLING ANALYTICAL RESULTS**

DATE:	SCALE:	DRAWING NO.	FIGURE NO.
3/4/16	1"=60'	152587-D7	4

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2/15/16 Start Time: 13:45

Well ID: GT-15

Initial Total Casing Length: 78.70 (feet)

Depth to Water (from top of casing): 71.83 (feet)

a) Height of Water Column: 6.87 (feet)

Well Volume $([a] \times \text{volume factor}) = 6.87 \text{ (feet)} \times 0.163 \text{ gallons / foot} = 1.1 \text{ gallons}$

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Purge Data

Date: 2-15-16 Time: 13:55 (start) 15:00 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	<u>14:00</u>						
Volume							
Specific Conductivity	<u>0.923</u>						
pH	<u>7.76</u>						
Turbidity	<u>1230.9</u>						
Temperature	<u>9.33</u>						
ORP	<u>230.9</u>						
DO	<u>4.70</u>						

see comments

Did well dry out? (If yes, how many times?) No

Actual Volume Removed: 3.4 (gal.)
more like 5

Sampling Data

Sample Date: N/A

Sample Time: _____

Appearance (visual): _____

Color: _____

Odor: _____

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
<i>see comments</i>		

Personnel: DH and TM

Comments: During purging turbidity was not changing. YSI parameters show 1,200+ NTU. Called Dave (CB&I) & he said to move on. Well will need redevelopment. We have removed close to 5 gallons with no change in turbidity.

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-16-16 Start Time: 0900

Well ID: GT-9R

Initial Total Casing Length: 68.45 (feet)

Depth to Water (from top of casing): 64.22 (feet)

a) Height of Water Column: 4.23 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 4.23 (feet) x 0.163 gallons / foot = 0.69 gallons

Purge Data

Date: 2-16-16 Time: 1030 (start) 1105 (finish)

Method (Watterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable):

Time	1035	1040	1045	1050	1055	1100	1105
Volume							
Specific Conductivity	<u>0.992</u>	<u>1.022</u>	<u>1.035</u>	<u>1.051</u>	<u>1.057</u>	<u>1.046</u>	<u>1.069</u>
pH	<u>7.16</u>	<u>7.28</u>	<u>7.11</u>	<u>7.10</u>	<u>7.11</u>	<u>7.08</u>	<u>7.12</u>
Turbidity	<u>1248.9</u>	<u>1241.5</u>	<u>1246.6</u>	<u>1243.5</u>	<u>1238.2</u>	<u>1250.0</u>	<u>1252.9</u>
Temperature	<u>10.50</u>	<u>10.25</u>	<u>10.11</u>	<u>10.35</u>	<u>10.39</u>	<u>10.45</u>	<u>10.74</u>
ORP	<u>147.2</u>	<u>166.5</u>	<u>171.3</u>	<u>165.1</u>	<u>163.3</u>	<u>158.9</u>	<u>150.5</u>
DO	<u>4.94</u>	<u>5.83</u>	<u>6.10</u>	<u>5.45</u>	<u>7.11</u>	<u>8.05</u>	<u>7.75</u>

Did well dry out? (If yes, how many times?) yes - recharged 3 times Actual Volume Removed: 2.5 (gal.)

Sampling Data

Sample Date: 2-16-16 Sample Time: 1115

Appearance (visual): Extremely Turbid Color: Brown Odor: None

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
<u>see coc</u>	<u>3x VOAs</u>	<u>HCl</u>

Personnel: DH and TM

Comments: PID = 0.3 Called Pine & spoke with pump techs to figure out why water was not coming up. Bladder is filling.

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-16-16

Start Time: 12:55

Well ID: VRI-2

Initial Total Casing Length: 77.21 (feet)

Depth to Water (from top of casing): 69.51 (feet)

a) Height of Water Column: 7.70 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 7.70 (feet) x 0.163 gallons / foot = 1.25 gallons

Purge Data

Date: 2-16-16 Time: 13:00 (start) 13:30 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	13:00	13:05	13:10	13:15	13:20	13:25	13:30
Volume							
Specific Conductivity	0.533	0.539	0.537	0.537	0.532	0.532	0.530
pH	7.36	7.39	7.46	7.49	7.46	7.41	7.47
Turbidity	942.1	1235.5	1235.8	1236.0	1235.2	1235.3	1235.0
Temperature	8.78	8.98	9.01	9.03	8.95	9.02	8.94
ORP	170.8	170.7	162.2	162.8	165.1	170.6	173.3
DO	12.12	12.29	12.34	12.68	12.45	12.61	12.67

Did well dry out? (If yes, how many times?) No

Actual Volume Removed: 4.0 (gal.)

Sampling Data

Sample Date: 2-16-16

Sample Time: 13:31

Appearance (visual): turbid

Color: brown

Odor: No

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
<u>VOCs - see COC</u>	<u>3x VOAs</u>	<u>HCl</u>

Personnel: DH and TM

Comments: PID = 0.5

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-16-16 Start Time: 1408

Well ID: IW-2

Initial Total Casing Length: 72.90 (feet)

Depth to Water (from top of casing): 65.58 (feet)

a) Height of Water Column: 7.32 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 7.32 (feet) x 0.163 gallons / foot = 1.19 gallons

Purge Data

Date: 2-16-16 Time: 1410 (start) 1440 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	1410	1415	1420	1425	1430	1435	1440
Volume							
Specific Conductivity	3.177	3.489	3.578	3.622	3.586	3.587	3.605
pH	7.75	7.91	7.97	8.02	7.99	7.95	7.92
Turbidity	2.9	8.5	10.8	13.4	19.6	19.5	15.4
Temperature	10.94	11.4	11.16	11.14	11.15	11.12	11.18
ORP	170.4	161.4	158.7	166.1	164.0	162.0	154.1
DO	3.52	6.65	7.77	8.28	8.56	8.94	7.92

Did well dry out? (If yes, how many times?) No

Actual Volume Removed: 3.75 (gal.)

Sampling Data

Sample Date: 2-16-16

Sample Time: 1441

Appearance (visual): Clear

Color: clear

Odor: yes paint thinner

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
<u>VOCs - see COC</u>	<u>3x VOAs</u>	<u>HCL</u>

Personnel: DH and TM

Comments: PTD = 0.9

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-17-17^{PM} ₂₀₁₆ Start Time: 0845
Initial Total Casing Length: 69.07 (feet)
Depth to Water (from top of casing): 59.92 (feet)
a) Height of Water Column: 9.15 (feet)

Well ID: GT-7

*Volume Factors:

1-inch well = 0.041 gal / ft
1.5-inch well = 0.092 gal / ft
2-inch well = 0.163 gal / ft
3-inch well = 0.367 gal / ft
4-inch well = 0.653 gal / ft
6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 9.15 (feet) x 0.367 gallons / foot = 3.35 gallons

Purge Data

Date: 2-17-16 Time: 0850 (start) 0920 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	0850	0855	0900	0905	0910	0915	0920
Volume							
Specific Conductivity	2.244	2.279	2.265	2.283	2.281	2.289	2.294
pH	7.36	7.28	7.29	7.33	7.38	7.39	7.40
Turbidity	0.736	0.1	22.5	36.8	87.2	87.8	87.9
Temperature	12.26	12.40	12.70	12.65	12.59	12.63	12.70
ORP	173.9	180.4	182.5	181.6	181.4	181.9	181.8
DO	13.24	14.87	14.65	14.86	15.14	15.13	15.21

Did well dry out? (If yes, how many times?) NO

Actual Volume Removed: 10.5 (gal.)

Sampling Data

Sample Date: 2-17-16
Appearance (visual): slightly turbid
Sampling Method: Low Flow

Sample Time: 0921
Color: slightly turbid Odor: slight odor

Constituents Sampled	Container Description	Preservative
<u>VOCs - see COC</u>	<u>3xVOAs</u>	<u>HCl</u>

Personnel: DH and TM

Comments: PID = 0.0

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 02-17-16 Start Time: 10:00

Well ID: VRI-9

Initial Total Casing Length: 69.76 (feet)

Depth to Water (from top of casing): 66.22 (feet)

a) Height of Water Column: 3.54 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 3.54 (feet) x 0.163 gallons / foot = 0.6 gallons

Purge Data

Date: 02-17-16 Time: 10:10 (start) 10:40 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	10:10	10:15	10:20	10:25	10:30	10:35	10:40
Volume							
Specific Conductivity	0.710	0.725	0.725	0.724	0.724	0.723	0.722
pH	7.37	7.28	7.30	7.31	7.32	7.33	7.34
Turbidity	1228.9	621.2	538.6	367.8	321.3	299.7	276.8
Temperature	8.20	8.38	8.47	8.53	8.59	8.61	8.61
ORP	171.3	174.0	173.8	173.1	171.4	169.8	168.1
DO	20.38	19.87	19.71	19.69	19.98	20.13	20.76

Did well dry out? (If yes, how many times?) Yes - 2x, see comments Actual Volume Removed: 2 (gal.)

Sampling Data

Sample Date: 02-17-16

Sample Time: 10:41

Appearance (visual): Extremely turbid

Color: Brown

Odor: NO

Sampling Method: Low Flow

Constituents Sampled

VOCs (see
COC)

Container Description

Took 6
VOAs

Preservative

HCl

Personnel: DH and TM

Comments: PID = 0.3 Well allowed to recharge, did not have a lot of water. Recharged quickly. Took 6 VOAs due to extreme amount of silt and sand in VOAs.

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-17-16 Start Time: 1100

Well ID: Iw-3 + DUP

Initial Total Casing Length: 70.81 (feet)

Depth to Water (from top of casing): 65.47 (feet)

a) Height of Water Column: 5.34 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 5.34 (feet) x 0.163 gallons / foot = 0.9 gallons

Purge Data

Date: 2-17-16 Time: 1110 (start) 1140 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	1110	1115	1120	1125	1130	1135	1140
Volume							
Specific Conductivity	6.361	6.533	6.590	6.622	6.717	6.719	6.712
pH	8.98	8.92	8.91	8.93	9.07	9.14	9.20
Turbidity	842.3	250.3	67.8	59.8	39.9	38.2	36.5
Temperature	10.25	10.76	10.91	10.79	10.67	10.71	10.79
ORP	137.5	112.2	98.3	87.4	87.7	87.2	87.0
DO	9.39	8.45	6.98	6.50	6.24	6.19	6.10

Did well dry out? (If yes, how many times?) No

Actual Volume Removed: 3 (gal.)

Sampling Data

Sample Date: 2-17-16

Sample Time: 1141

Appearance (visual): Discolored, not turbid

Color: Brown, tea color

Odor: Slight

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
VOCs - See COC	3x VOAs	HCl

Personnel: DH and TM

Comments: PID = 0.8

PUP taken here.

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-17-16 Start Time: 1400

Well ID: FW-4

Initial Total Casing Length: 71.50 (feet)

Depth to Water (from top of casing): 65.42 (feet)

a) Height of Water Column: 6.08 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 6.08 (feet) x 0.163 gallons / foot = 1 gallons

Purge Data

Date: 2-17-16 Time: 1410 (start) 1440 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	1410	1415	1420	1425	1430	1435	1440
Volume							
Specific Conductivity	0.741	0.818	0.853	1.073	1.137	1.146	1.134
pH	8.34	9.04	9.18	10.57	10.86	11.03	11.10
Turbidity	21.3	24.6	54.5	35.5	30.2	29.6	28.8
Temperature	9.22	9.74	9.89	9.97	10.05	10.09	10.11
ORP	77.0	76.5	69.5	52.2	44.6	42.3	41.5
DO	11.53	11.96	10.87	16.34	14.50	20.01	21.18

Did well dry out? (If yes, how many times?) No

Actual Volume Removed: 3 (gal.)

Sampling Data

Sample Date: 2-17-16

Sample Time: 1441

Appearance (visual): clear

Color: clear

Odor: strong odor

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
<u>VOCs - see COC</u>	<u>3x VOA3</u>	<u>HCl</u>

Personnel: DH and TM

Comments: PID = 7.8

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

33657

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: Von Roll		Project Number: 152587		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																
Project Manager: Matt Sausville		Report CC:		PRESERVATIVE: 1																
Company/Address: CB&I 13 British American Blvd Latham, NY 12110		Phone: 518-785-2355 Email: matt.sausville@cbi.com		NUMBER OF CONTAINERS GC/MS VOCs • 8260 • 824 • CLP GC/MS SVOCs • 8270 • 825 GC VOCs • 8021 • 601/602 PESTICIDES • 8061 • 608 PCBs • 8062 • 608 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) PRESERVATIVE KEY 0. NONE 1. HCL 2. HNO₃ 3. H₂SO₄ 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO₄ 8. Other _____																
Sampler's Signature: <i>[Signature]</i>		Sampler's Printed Name: TM & DM																		
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	DATE	TIME	MATRIX																
GT-9R		2-16-16	11:15	GW	3	✓														
VRI-2		2-16-16	13:31	GW	3	✓														
IW-2		2-16-16	14:41	GW	3	✓														
GT-7		2-17-16	09:21	GW	3	✓														
VRI-9		2-17-16	10:41	GW	6	✓														
IW-3		2-17-16	11:41	GW	3	✓														
IW-4		2-17-16	14:41	GW	3	✓														
DUP		=	=	GW	3	✓														
Trip Blank		=	=	=	3	✓														
SPECIAL INSTRUCTIONS/COMMENTS Metals Analyze samples for TCL VOCs and non-standard VOCs (1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, isopropylbenzene, and n-propylbenzene). Samples IW-2, IW-3, and IW-4 are historically elevated for VOC detections. See QAPP ☐ TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day 2 day 3 day 4 day 5 day Standard REQUESTED REPORT DATE 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 NY 3-tab EQUUS EDD Edata Yes No INVOICE INFORMATION PO # BILL TO:																				
STATE WHERE SAMPLES WERE COLLECTED NY																				
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: CB&I		Printed Name: DINA AVERS		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:						
Firm: 02-17-2016		Firm: ALS		Firm:		Firm:		Firm:		Firm:		Firm:		Firm:						
Date/Time: 1555		Date/Time: 2/12/16 1555		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:		Date/Time:						

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-18-16 Start Time: 0830

Well ID: IW-7, MS/MSD

Initial Total Casing Length: 71.22 (feet)

Depth to Water (from top of casing): 65.41 (feet)

a) Height of Water Column: 5.81 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 5.81 (feet) x 0.163 gallons / foot = 0.95 gallons

Purge Data

Date: 2-18-16 Time: 0840 (start) 0910 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	0840	0845	0850	0855	0900	0905	0910
Volume							
Specific Conductivity	0.903	0.982	1.020	0.992	1.044	1.038	1.033
pH	7.95	7.65	7.56	7.49	7.53	7.58	7.61
Turbidity	101.7	6.2	9.3	23.6	21.5	23.6	24.4
Temperature	9.77	9.91	10.22	10.82	10.40	10.52	10.43
ORP	100.5	124.8	132.7	144.2	148.3	149.4	148.6
DO	13.02	9.77	9.46	9.46	9.80	9.47	10.04

Did well dry out? (If yes, how many times?) No

Actual Volume Removed: 3 (gal.)

Sampling Data

Sample Date: 2-18-16 Sample Time: 0911

Appearance (visual): slightly turbid, white flaky Color: clear

Odor: slight

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
<u>VOCs-see COC</u>	<u>3x VOAs</u>	<u>HCl</u>

Personnel: DH and TM

Comments: PID = 0.4

MS/MSD collected here

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-18-16

Start Time: 1000

Well ID: IW-1

Initial Total Casing Length: 69.48 (feet)

Depth to Water (from top of casing): 65.61 (feet)

a) Height of Water Column: 3.87 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 3.87 (feet) x 0.163 gallons / foot = 0.63 gallons

Purge Data

Date: 2-18-16 Time: 1005 (start) 1055 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	1025	1030	1035	1040	1045	1050	1055
Volume							
Specific Conductivity	<u>1.078</u>	<u>1.008</u>	<u>1.001</u>	<u>1.013</u>	<u>1.019</u>	<u>1.036</u>	<u>1.040</u>
pH	<u>8.28</u>	<u>8.15</u>	<u>8.13</u>	<u>8.24</u>	<u>8.27</u>	<u>8.30</u>	<u>8.31</u>
Turbidity	<u>10.8</u>	<u>10.14</u>	<u>7.5</u>	<u>12.8</u>	<u>15.6</u>	<u>15.8</u>	<u>16.4</u>
Temperature	<u>9.73</u>	<u>10.53</u>	<u>10.13</u>	<u>10.46</u>	<u>10.94</u>	<u>10.86</u>	<u>11.02</u>
ORP	<u>136.6</u>	<u>142.1</u>	<u>151.3</u>	<u>155.5</u>	<u>155.3</u>	<u>156.0</u>	<u>156.6</u>
DO	<u>24.20</u>	<u>28.97</u>	<u>27.04</u>	<u>29.25</u>	<u>27.49</u>	<u>27.98</u>	<u>27.93</u>

Did well dry out? (If yes, how many times?) No

Actual Volume Removed: 2 (gal.)

Sampling Data

Sample Date: 2-18-16

Sample Time: 1100

Appearance (visual): Clear, some white specks Color: Clear

Odor: Yes

Sampling Method: Low Flow

Constituents Sampled
VOC - see COC

Container Description
3x VOCs

Preservative
HCl

Personnel: DH and TM

Comments: PID = 3.1

Pump, tubing constantly freezing. No water flow consistent from 10 to 10:20.

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2.18.16 Start Time: 1245

Well ID: VRI-1

Initial Total Casing Length: 69.70 (feet)

Depth to Water (from top of casing): 65.66 (feet)

a) Height of Water Column: 4.04 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 4.04 (feet) x 0.163 gallons / foot = 0.7 gallons

Purge Data

Date: 2.18.16 Time: 1250 (start) 1320 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	1250	1255	1300	1305	1310	1315	1320
Volume							
Specific Conductivity	1.114	1.110	1.083	1.066	1.050	1.045	1.039
pH	7.68	7.61	7.64	7.56	7.57	7.61	7.63
Turbidity	144.1	774.2	388.2	269.1	228.3	221.7	213.5
Temperature	11.58	10.57	10.45	10.46	10.52	10.43	10.38
ORP	146.2	142.8	146.1	150.0	151.1	151.3	151.4
DO	19.68	17.57	18.53	19.68	21.21	21.56	21.07

Did well dry out? (If yes, how many times?) No

Actual Volume Removed: 3 (gal.)

Sampling Data

Sample Date: 2.18.16

Sample Time: 1321

Appearance (visual): Turbid

Color: Turbid, light yellow Odor: Slight

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
<u>VOCs- see C0C</u>	<u>3x VOAs</u>	<u>HCl</u>

Personnel: DH and TM

Comments: PID = 88.7

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-18-16 Start Time: 1400

Well ID: IW-5

Initial Total Casing Length: 70.83 (feet)

Depth to Water (from top of casing): 65.23 (feet)

a) Height of Water Column: 5.6 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 5.6 (feet) x 0.163 gallons / foot = 0.9 gallons

Purge Data

Date: 2-18-16 Time: 1410 (start) 1440 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	1410	1415	1420	1425	1430	1435	1440
Volume							
Specific Conductivity	2.467	2.756	2.203	2.121	1.903	1.911	1.926
pH	12.04	11.99	12.01	12.07	12.06	12.08	12.07
Turbidity	30.1	23.2	26.5	24.3	20.7	19.1	19.3
Temperature	9.21	9.79	9.73	9.28	9.57	9.83	10.06
ORP	77.8	48.4	32.5	17.7	9.4	9.1	9.0
DO	12.70	11.65	11.64	13.94	14.70	14.34	14.47

Did well dry out? (If yes, how many times?) No

Actual Volume Removed: 3 (gal.)

Sampling Data

Sample Date: 2-18-16

Sample Time: 1441

Appearance (visual): clear

Color: clear

Odor: slight

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
<u>VOCs - see COC</u>	<u>3x VOA3</u>	<u>HCl</u>

Personnel: DH and TM

Comments: PID=11.0

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

33655

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 Von Roll		Project Number 152587		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																
Project Manager Matt Sausville		Report CC		PRESERVATIVE																
Company/Address CB&I				NUMBER OF CONTAINERS GC/MS VOCs • 8260 • 821 • CLP GC/MS SVOCs • 8270 • 825 GC VOCs • 8021 • 801/802 PESTICIDES • 8061 • 808 PCBs • 8082 • 808 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below)																
13 British American Blvd																				
Latham, NY 12110																				
Phone # 518-785-2355		Email matt.sausville@cbi.com																		
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name T. Mui & D. Howe		PRESERVATIVE KEY 0. NONE 1. HCL 2. HNO₃ 3. H₂SO₄ 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO₄ 8. Other _____																
REMARKS/ ALTERNATE DESCRIPTION																				
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING		MATRIX																
DATE	TIME																			
IW-7		2-18-16	0911	GW	3	☒														
IW-7-MS		2-18-16	0911	GW	3	☒														
IW-7-MSD		2-18-16	0911	GW	3	☒														
IW-1		2-18-16	1100	GW	3	☒														
VRI-1		2-18-16	1321	GW	3	☒														
IW-5		2-18-16	1441	GW	3	☒														
Trip Blank				W	3	☒														
SPECIAL INSTRUCTIONS/COMMENTS Analyze samples for TCL VOCs and non-standard VOCs (1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, isopropylbenzene, and n-propylbenzene). Samples IW-7, IW-1, and VRI-1, and IW-5 historically have VOCs.																				
TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day 2 day 3 day 4 day 5 day Standard REQUESTED REPORT DATE 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 NY 3-tab EQUIS EDD Edata ☒ Yes ☐ No					INVOICE INFORMATION PO # BILL TO:					
STATE WHERE SAMPLES WERE COLLECTED NY																				
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY						
Signature T. Mui		Signature D. A.		Signature		Signature		Signature		Signature		Signature		Signature						
Printed Name CB&I		Printed Name DINA AYERS		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name						
Firm 02-18-2016		Firm ALS		Firm		Firm		Firm		Firm		Firm		Firm						
Date/Time 1625		Date/Time 2/18/16 1625		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time						

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-19-16 Start Time: 08:30

Well ID: IW-6

Initial Total Casing Length: 70.94 (feet)

Depth to Water (from top of casing): 65.18 (feet)

a) Height of Water Column: 5.76 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 5.76 (feet) x 0.163 gallons / foot = 1 gallons

Purge Data

Date: 2-19-16 Time: 0835 (start) 0905 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	0835	0840	0845	0850	0855	0900	0905
Volume							
Specific Conductivity	<u>2.778</u>	<u>2.250</u>	<u>1.905</u>	<u>1.963</u>	<u>2.057</u>	<u>2.088</u>	<u>2.066</u>
pH	<u>8.49</u>	<u>10.26</u>	<u>10.12</u>	<u>10.01</u>	<u>9.90</u>	<u>9.92</u>	<u>9.95</u>
Turbidity	<u>52.4</u>	<u>45.0</u>	<u>24.5</u>	<u>12.4</u>	<u>11.9</u>	<u>10.6</u>	<u>10.1</u>
Temperature	<u>8.44</u>	<u>9.62</u>	<u>9.45</u>	<u>9.88</u>	<u>10.01</u>	<u>9.96</u>	<u>10.01</u>
ORP	<u>83.8</u>	<u>84.2</u>	<u>97.6</u>	<u>101.6</u>	<u>104.0</u>	<u>106.3</u>	<u>104.4</u>
DO	<u>9.08</u>	<u>9.89</u>	<u>12.04</u>	<u>11.50</u>	<u>11.41</u>	<u>12.05</u>	<u>12.08</u>

Did well dry out? (If yes, how many times?) NO

Actual Volume Removed: 3 (gal.)

Sampling Data

Sample Date: 2-19-16

Sample Time: 0910

Appearance (visual): Clear

Color: Slight Amber

Odor: Strong

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
<u>VOCs - See COC</u>	<u>3x Vials</u>	<u>HCl</u>

Personnel: DH and TM

Comments: PID = 193.4

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-19-16 Start Time: 0950

Well ID: VRI-4

Initial Total Casing Length: 79.05 (feet)

Depth to Water (from top of casing): 73.50 (feet)

a) Height of Water Column: 5.55 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 5.55 (feet) x 0.163 gallons / foot = 0.9 gallons

Purge Data

Date: 2-19-16 Time: 1035 (start) 1105 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	1035	1040	1045	1050	1055	1100	1105
Volume							
Specific Conductivity	0.776	0.780	0.802	0.796	0.764	0.768	0.784
pH	8.13	7.88	7.74	7.66	7.62	7.60	7.58
Turbidity	134.9	213.6	352.5	341.5	394.0	400.8	405.9
Temperature	10.39	10.45	10.98	11.18	11.01	10.97	11.04
ORP	142.1	151.5	152.7	154.6	156.7	158.4	159.3
DO	14.14	13.50	12.72	12.39	12.40	12.36	12.68

Did well dry out? (If yes, how many times?) No - see comments Actual Volume Removed: 3 (gal.)

Sampling Data

Sample Date: 2-19-16 Sample Time: 1110

Appearance (visual): Turbid - see comments Color: Brown Odor: No

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
<u>VOCs - see COC</u>	<u>3 x VOAs +</u>	<u>HCl</u>
	<u>3 x VOAs due to</u>	
	<u>high turbidity</u>	

Personnel: DH and TM

Comments: PID = 6.8

Bottom of well has lots of grass and organic matter.
Grass is in VOA samples too. Took 6 VOAs due to visual
determination of high turbidity.

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-19-16 Start Time: 1330

Well ID: GT-15

Initial Total Casing Length: 76.80 (feet)

Depth to Water (from top of casing): 71.48 (feet)

a) Height of Water Column: 5.32 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 5.32 (feet) x 0.163 gallons / foot = 0.86 gallons

Purge Data

Date: 2-19-16 Time: 1350 (start) 1420 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	1350	1355	1400	1405	1410	1415	1420
Volume							
Specific Conductivity	0.891	0.977	0.976	0.938	0.950	0.948	0.945
pH	7.73	7.66	7.61	7.61	7.60	7.60	7.60
Turbidity	622.7	938.2	780.2	689.4	60.2	673.6	629.1
Temperature	10.56	11.32	11.44	11.55	11.55	11.56	11.53
ORP	140.0	141.2	146.2	148.2	148.7	151.6	152.3
DO	16.20	15.54	15.00	14.62	14.86	14.90	14.85

Did well dry out? (If yes, how many times?) No Yes-during sampling Actual Volume Removed: 3 (gal.)

Sampling Data

Sample Date: 2-19-16

Sample Time: 1430

Appearance (visual): Turbid

Color: Light Brown Odor: No

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
<u>VOCs - see COC</u>	<u>3x VOAs +</u>	<u>HCl</u>
	<u>3x VOAs</u>	

Personnel: DH and TM

Comments: PID = 5.7

Took 6 VOAs due to high turbidity.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

33656

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 Von Roll		Project Number 152587		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																																			
Project Manager Matt Sausville		Report CC		PRESERVATIVE																																			
Company/Address CB&I		Email matt.sausville@cbi.com		<table border="1"> <tr> <td rowspan="2">NUMBER OF CONTAINERS</td> <td>GC/MS VOCs • 8260 • 824 • CLP</td> <td>GC/MS SVOCs • 8270 • 825</td> <td>GC VOCs • 8021 • 801/802</td> <td>PESTICIDES • 8061 • 808</td> <td>PCBs • 8082 • 808</td> <td>METALS, TOTAL (List in comments below)</td> <td>METALS, DISSOLVED (List in comments below)</td> <td colspan="7"></td> </tr> <tr> <td colspan="7">Preservative Key 0. NONE 1. HCL 2. HNO₃ 3. H₂SO₄ 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO₄ 8. Other _____</td> </tr> </table>														NUMBER OF CONTAINERS	GC/MS VOCs • 8260 • 824 • CLP	GC/MS SVOCs • 8270 • 825	GC VOCs • 8021 • 801/802	PESTICIDES • 8061 • 808	PCBs • 8082 • 808	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)								Preservative Key 0. NONE 1. HCL 2. HNO ₃ 3. H ₂ SO ₄ 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO ₄ 8. Other _____						
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13 British American Blvd. Latham, NY 12110		T.Mui & D.Howe		REMARKS/ ALTERNATE DESCRIPTION																																			
Phone # 518-785-2355		Sampler's Signature <i>[Signature]</i>																																					
Sampler's Printed Name T.Mui & D.Howe																																							
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	DATE	SAMPLING TIME	MATRIX											see comment box																								
IW-6		2-19-16	0910	GW	3	✓																																	
VRI-4		2-19-16	1110	GW	6	✓																																	
GT-15		2-19-16	1430	GW	6	✓																																	
Trip Blank		—	—	W	3	✓																																	
SPECIAL INSTRUCTIONS/COMMENTS Analyze samples for TCL VOCs and non-standard VOCs (1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, isopropylbenzene, and n-propylbenzene). Sample IW-6 historically high for VOCs. Took 6 VOAs due to high turbidity with sand/silt. See QAPP ☐ TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day 2 day 3 day 4 day 5 day Standard REQUESTED REPORT DATE 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 NY 3-tab EQUIS EDD INVOICE INFORMATION PO # BILL TO:																				
																			Edata Yes No																				
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Signature T.Mui		Signature <i>[Signature]</i>		Signature		Signature		Signature		Signature		Signature		Signature		Signature		Signature																					
Printed Name CB&I		Printed Name DINA AVERS		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name																					
Firm 02-19-2016		Firm ALS		Firm		Firm		Firm		Firm		Firm		Firm		Firm		Firm																					
Date/Time 1516		Date/Time 2/19/16 1516		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time																					

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2.22.16 Start Time: 08:40

Well ID: GT-14

Initial Total Casing Length: 69.92 (feet)

Depth to Water (from top of casing): 66.23 (feet)

a) Height of Water Column: 3.69 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 3.69 (feet) x 0.163 gallons / foot = 0.6 gallons

Purge Data

Date: 2.22.16 Time: 0850 (start) 0920 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	08:50	0855	0900	0905	0910	0915	0920
Volume							
Specific Conductivity	0.553	0.574	0.578	0.578	0.583	0.585	0.587
pH	7.05	7.23	7.32	7.34	7.36	7.39	7.41
Turbidity	15.6	65.7	102.0	129.8	144.6	149.6	153.6
Temperature	8.59	9.22	9.21	9.41	9.43	9.44	9.40
ORP	217.6	209.2	205.2	202.0	191.3	181.6	184.8
DO	0.18	0.41	2.80	0.12	0.16	0.19	0.21

Did well dry out? (If yes, how many times?) No

Actual Volume Removed: 2 (gal.)

Sampling Data

Sample Date: 2.22.16

Sample Time: 0921

Appearance (visual): clear

Color: clear

Odor: None

Sampling Method: Low Flow

Constituents Sampled
VOCs - see COC

Container Description
3x VOAs

Preservative
HCl

Personnel: DH and TM

Comments: PID: 0.5

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2.22.16 Start Time: 10:00

Well ID: VRI-3

Initial Total Casing Length: 78.04 (feet)

Depth to Water (from top of casing): 71.66 (feet)

a) Height of Water Column: 6.38 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 6.38 (feet) x 0.163 gallons / foot = 1.0 gallons

Purge Data

Date: 2.22.16 Time: 10:10 (start) 10:40 (finish)

Method (Waterra, bailer, submersible pump, etc.): Low Flow

Purge Volume (if applicable): _____

Time	10:10	10:15	10:20	10:25	10:30	10:35 10:35	10:40
Volume							
Specific Conductivity	0.591	0.589	0.595	0.606	0.614	0.616	0.619
pH	7.17	7.19	7.19	7.21	7.26	7.22	7.25
Turbidity	36.3	112.6	424.0	411.6	427.9	430.6	440.6
Temperature	10.67	10.48	10.36	10.37	10.30	10.23	10.27
ORP	159.0	113.2	97.1	104.6	115.8	115.9	102.5
DO	3.62	5.51	5.19	5.32	6.74	6.77	6.33

Did well dry out? (If yes, how many times?) No

Actual Volume Removed: 3.5 (gal.)

Sampling Data

Sample Date: 2.22.16 Sample Time: 1041

Appearance (visual): turbid, see comments Color: clear but turbid Odgr: slight

Sampling Method: Low Flow

Constituents Sampled	Container Description	Preservative
<u>VOCs - see COC</u>	<u>3x VOA3</u>	<u>HCl</u>

Personnel: DH and TM

Comments: PIP=8.0

Sample & purge water had brown & black flakes of organic matter (leaves, sticks, etc).

CB&I Environmental & Infrastructure, Inc.
Groundwater Sample Event Field Data Sheet



Project Name: Von Roll GW Sampling

Project No.: 152587

Water Level Data

Date: 2-22-16 Start Time: 1245

Well ID: GT-16

Initial Total Casing Length: 76.81 (feet)

Depth to Water (from top of casing): 69.91 (feet)

a) Height of Water Column: 6.9 (feet)

*Volume Factors:

1-inch well = 0.041 gal / ft

1.5-inch well = 0.092 gal / ft

2-inch well = 0.163 gal / ft

3-inch well = 0.367 gal / ft

4-inch well = 0.653 gal / ft

6-inch well = 1.468 gal / ft

Well Volume ([a] x volume factor *) = 6.9 (feet) x 0.163 gallons / foot = 1.1 gallons

Purge Data

Date: 2-22-16 Time: _____ (start) _____ (finish)

Method (Watterra, bailer, submersible pump, etc.): Low Flow Bladder Pump

Purge Volume (if applicable): _____

Time							
Volume							
Specific Conductivity							
pH							
Turbidity							
Temperature							
ORP							
DO							

see comments

Did well dry out? (If yes, how many times?) _____

Actual Volume Removed: _____ (gal.)

Sampling Data

Sample Date: _____

Sample Time: _____

Appearance (visual): _____

Color: _____

Odor: _____

Sampling Method: _____

Constituents Sampled	Container Description	Preservative

No sample

Personnel: TM & DH PID=0.0

Comments: No well plug. Missing 1 screw on flush mount cover. Well has been completely covered under mud & ice. Sits on low point of road so constant traffic & pooling over well. Roadbox flooded w/sheened road water to top of well opening. Assuming road water is pooling into PVC well too. Cannot feed water level meter easily to bottom of well, keeps getting caught down length of well. Cannot force bailer or bladder pump past approx. 15 inches. No sample obtained. Needs repaired.

12 Cold

Temps -4 to 15°F Monday= 02-15-2016

12:00- Left office at noon in hopes of ground defrosting.

13:15- Guard finally let us into site. Was holding us due to emergency responders.

13:30- Located missing well GT-16 with metal detector.

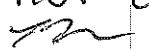
Flagged on fence but roadbox is on edge of road, in road. Tried to break lid free from concrete & rocks but will not move at all.

13:45- Start on well GT-15.

Well is extremely turbid and not clearing up. Afraid to run water through YSI (again).

15:45- Called Dave Stoll & asked what to do. Dave told us to move on. He wants to talk to Matt S. (CBI) & VanRoll.

Possible redevelopment of wells we did^{tn} have never sampled.

16:00- Called ALS to inform them we're not coming. Left site. 

Heavy Rain All Day

Temps 20 to 45°F

Tuesday

02-16-16

13

0745- Left for site. Packed truck & talked to Matt S.

1000- Called Pine & asked why water is not coming up to surface properly. Well GT-9R is extremely turbid. Pine troubleshooting, they will call us back.

1115- Allowed well to recharge, still extremely turbid. Sampled 3 VOAs. Silt/sand is less than 1/4" per VOA.

1130- Sausville calls us back.

Told us to hold samples per Janice (due to blizzard). Also told us to get more VOAs for turbid wells.

12-1230 Lunch. Called ALS.

1230- Continue sampling.

1530- When moving water to drum outside Phil's office, Aaron told us drums were to be kept in blue building. Talk to Greg to move drum.

1535- Leave site. Need DI water and gas.

Wednesday
2-17-16

Temps 25-35°F

0745 - Left for site. Talked to Sausville about today's needs & yesterday's silty/sandy samples.

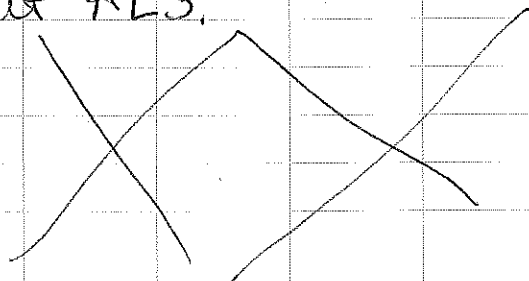
1000 - Matt called to ask about status & wanted photo of GT-16. Go to blue building and talk to Greg about our drum. Well GT-16 is flooded under ice water (at least 7" water). Metal detector does not work. Showing metal for one foot or more lengths. Dropped off water in blue building.

12-1230: Lunch

1230 - Continue sampling

1500 - Sausville called to check on progress & GT-16. Well is still submerged under water. Cannot see well lid.

Leave to drop off samples at ALS.



Sunny Monday
2-22-16
Temps - Lower 30's

0730 - Left for site

1200 - Two samples have been obtained. Sausville (CB&I) shows up to help us into flush mount GT-16. Were able to break off layer of icy mud to get to well lid. Skidger hammer helped loosen lid. There is no well plug. Roadbox is flooded with melted road water, has high amt. of sheen. Assume water & sheen flooding into open well b/c flooded up to top of PVC. Very difficult to feed WLM into bottom of well. Stopped at least 3 times. New bailer will not fit into well. Half of bailer does not go in. Heavy bladder pump also does not fit into well. Pump cannot go past approx. 15 inches deep. Well needs repair. Should be moved off of road, away from drainage too. *[Signature]*



February 28, 2016

Service Request No:R1601413

Mr. Matt Sausville
CB&I Environmental & Infrastructure
13 British American Blvd.
Latham, NY 12110

Laboratory Results for: Von Roll - VRI

Dear Mr.Sausville,

Enclosed are the results of the sample(s) submitted to our laboratory February 18, 2016
For your reference, these analyses have been assigned our service request number **R1601413**.

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.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

PHONE +1 585 288 5380 | FAX +1 585 288 8475

ALS Group USA, Corp.

dba ALS Environmental

ALS Environmental

Client: CB&I
Service Request No.: R1601413
Project: Von Roll
Date Received: 02/18-20/16
Sample Matrix: Water
Project/Case No.:

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 data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Control Sample (LCS).

Sample Receipt

Water samples were received for analysis at ALS Environmental on 02/18-20/16. The samples were received in good condition and consistent with the accompanying chain of custody form. All sampling activities performed by ALS personnel have been in accordance with "ALS Field Procedures and Measurements Manual" or by client specifications. The samples were stored in a refrigerator between 1°C and 6°C upon receipt at the laboratory.

Volatile Organics

Water samples were analyzed for a site list of Volatile Organics by Method 8260C from SW-846.

All Tuning criteria for BFB were within QC limits.

All the initial calibration criteria were met for all analytes. All Continuing Calibration Verification (CCV) standards were within 20% Difference (D) except 1,2-Dibromo-3-chloropropane and Bromomethane on the 02/25/16 CCV. All detected concentrations for these compounds associated with this CCV should be considered as estimated.

All Internal Standard Areas (IS) were within QC limits.

IW-2 and IW-6 were analyzed at dilutions due to a foamy matrix.

All surrogate standard recoveries were acceptable.

All Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS/LCSD) recoveries were within limits.

Site specific QC was performed on IW-7. All MS/MSD recoveries and RPD's were acceptable.

The Method Blanks associated with these samples were free of contamination.

No other analytical or QC problems were encountered.

CASE NARRATIVE

This report contains analytical results for the following samples:

Service Request Number: R1601413

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R1601413-001	GT-9R	2/16/2016	1115
R1601413-002	VRI-2	2/16/2016	1331
R1601413-003	IW-2	2/16/2016	1441
R1601413-004	GT-7	2/17/2016	0921
R1601413-005	VRI-9	2/17/2016	1041
R1601413-006	IW-3	2/17/2016	1141
R1601413-007	IW-4	2/17/2016	1441
R1601413-008	DUP	2/17/2016	
R1601413-009	TRIP BLANK 1	2/17/2016	
R1601413-010	IW-7	2/18/2016	0911
R1601413-011	IW-1	2/18/2016	1100
R1601413-012	VRI-1	2/18/2016	1321
R1601413-013	IW-5	2/18/2016	1441
R1601413-014	TRIP BLANK 2	2/18/2016	
R1601413-015	IW-6	2/19/2016	0910
R1601413-016	VRI-4	2/19/2016	1110
R1601413-017	GT-15	2/19/2016	1430
R1601413-018	TRIP BLANK 3	2/19/2016	

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.	+	Correlation coefficient for MSA is <0.995.
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).	N	Inorganics- Matrix spike recovery was outside laboratory limits.
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.	N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.	S	Concentration has been determined using Method of Standard Additions (MSA).
E	Organics- Concentration has exceeded the calibration range for that specific analysis.	W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
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.	P	Concentration >40% (25% for CLP) difference between the two GC columns.
*	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.	C	Confirmed by GC/MS
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.	Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (100% Difference between two GC columns).
#	Spike was diluted out.	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 Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID #
Delaware Accredited	Nebraska Accredited	294100 A/B
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

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 case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to <http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads>

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/16/16 11:15
Date Received: 02/18/16 09:40

Sample Name: GT-9R
Lab Code: R1601413-001

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/25/16 12:53	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/25/16 12:53	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/25/16 12:53	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/25/16 12:53	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/25/16 12:53	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/25/16 12:53	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/25/16 12:53	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/25/16 12:53	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/25/16 12:53	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/25/16 12:53	
1,2-Dibromoethane	1.0 U	1.0	1	02/25/16 12:53	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/25/16 12:53	
1,2-Dichloroethane	1.0 U	1.0	1	02/25/16 12:53	
1,2-Dichloropropane	1.0 U	1.0	1	02/25/16 12:53	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/25/16 12:53	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/25/16 12:53	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/25/16 12:53	
1,4-Dioxane	40 U	40	1	02/25/16 12:53	
2-Butanone (MEK)	5.0 U	5.0	1	02/25/16 12:53	
2-Hexanone	5.0 U	5.0	1	02/25/16 12:53	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/25/16 12:53	
Acetone	5.0 U	5.0	1	02/25/16 12:53	
Benzene	1.0 U	1.0	1	02/25/16 12:53	
Bromochloromethane	1.0 U	1.0	1	02/25/16 12:53	
Bromodichloromethane	1.0 U	1.0	1	02/25/16 12:53	
Bromoform	1.0 U	1.0	1	02/25/16 12:53	
Bromomethane	1.0 U	1.0	1	02/25/16 12:53	
Carbon Disulfide	1.0 U	1.0	1	02/25/16 12:53	
Carbon Tetrachloride	1.0 U	1.0	1	02/25/16 12:53	
Chlorobenzene	1.0 U	1.0	1	02/25/16 12:53	
Chloroethane	1.0 U	1.0	1	02/25/16 12:53	
Chloroform	1.0 U	1.0	1	02/25/16 12:53	
Chloromethane	1.0 U	1.0	1	02/25/16 12:53	
Cyclohexane	1.0 U	1.0	1	02/25/16 12:53	
Dibromochloromethane	1.0 U	1.0	1	02/25/16 12:53	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/25/16 12:53	
Dichloromethane	1.0 U	1.0	1	02/25/16 12:53	
Ethylbenzene	1.0 U	1.0	1	02/25/16 12:53	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/25/16 12:53	
Methyl Acetate	2.0 U	2.0	1	02/25/16 12:53	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/25/16 12:53	
Methylcyclohexane	1.0 U	1.0	1	02/25/16 12:53	
Styrene	1.0 U	1.0	1	02/25/16 12:53	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/16/16 11:15
Date Received: 02/18/16 09:40

Sample Name: GT-9R
Lab Code: R1601413-001

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/25/16 12:53	
Toluene	1.0 U	1.0	1	02/25/16 12:53	
Trichloroethene (TCE)	1.0 U	1.0	1	02/25/16 12:53	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/25/16 12:53	
Vinyl Chloride	1.0 U	1.0	1	02/25/16 12:53	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/25/16 12:53	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/25/16 12:53	
m,p-Xylenes	2.0 U	2.0	1	02/25/16 12:53	
n-Propylbenzene	1.0 U	1.0	1	02/25/16 12:53	
o-Xylene	1.0 U	1.0	1	02/25/16 12:53	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/25/16 12:53	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/25/16 12:53	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	111	85 - 122	02/25/16 12:53	
Dibromofluoromethane	113	89 - 119	02/25/16 12:53	
Toluene-d8	110	87 - 121	02/25/16 12:53	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/16/16 13:31
Date Received: 02/18/16 09:40

Sample Name: VRI-2
Lab Code: R1601413-002

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/24/16 16:35	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/24/16 16:35	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/24/16 16:35	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/24/16 16:35	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/24/16 16:35	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/24/16 16:35	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/24/16 16:35	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/24/16 16:35	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/24/16 16:35	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/24/16 16:35	
1,2-Dibromoethane	1.0 U	1.0	1	02/24/16 16:35	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/24/16 16:35	
1,2-Dichloroethane	1.0 U	1.0	1	02/24/16 16:35	
1,2-Dichloropropane	1.0 U	1.0	1	02/24/16 16:35	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/24/16 16:35	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/24/16 16:35	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/24/16 16:35	
1,4-Dioxane	40 U	40	1	02/24/16 16:35	
2-Butanone (MEK)	5.0 U	5.0	1	02/24/16 16:35	
2-Hexanone	5.0 U	5.0	1	02/24/16 16:35	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/24/16 16:35	
Acetone	5.0 U	5.0	1	02/24/16 16:35	
Benzene	1.0 U	1.0	1	02/24/16 16:35	
Bromochloromethane	1.0 U	1.0	1	02/24/16 16:35	
Bromodichloromethane	1.0 U	1.0	1	02/24/16 16:35	
Bromoform	1.0 U	1.0	1	02/24/16 16:35	
Bromomethane	1.0 U	1.0	1	02/24/16 16:35	
Carbon Disulfide	1.0 U	1.0	1	02/24/16 16:35	
Carbon Tetrachloride	1.0 U	1.0	1	02/24/16 16:35	
Chlorobenzene	1.0 U	1.0	1	02/24/16 16:35	
Chloroethane	1.0 U	1.0	1	02/24/16 16:35	
Chloroform	1.0 U	1.0	1	02/24/16 16:35	
Chloromethane	1.0 U	1.0	1	02/24/16 16:35	
Cyclohexane	1.0 U	1.0	1	02/24/16 16:35	
Dibromochloromethane	1.0 U	1.0	1	02/24/16 16:35	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/24/16 16:35	
Dichloromethane	1.0 U	1.0	1	02/24/16 16:35	
Ethylbenzene	1.0 U	1.0	1	02/24/16 16:35	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/24/16 16:35	
Methyl Acetate	2.0 U	2.0	1	02/24/16 16:35	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/24/16 16:35	
Methylcyclohexane	1.0 U	1.0	1	02/24/16 16:35	
Styrene	1.0 U	1.0	1	02/24/16 16:35	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/16/16 13:31
Date Received: 02/18/16 09:40

Sample Name: VRI-2
Lab Code: R1601413-002

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/24/16 16:35	
Toluene	1.0 U	1.0	1	02/24/16 16:35	
Trichloroethene (TCE)	1.0 U	1.0	1	02/24/16 16:35	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/24/16 16:35	
Vinyl Chloride	1.0 U	1.0	1	02/24/16 16:35	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 16:35	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 16:35	
m,p-Xylenes	2.0 U	2.0	1	02/24/16 16:35	
n-Propylbenzene	1.0 U	1.0	1	02/24/16 16:35	
o-Xylene	1.0 U	1.0	1	02/24/16 16:35	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 16:35	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 16:35	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	02/24/16 16:35	
Dibromofluoromethane	111	89 - 119	02/24/16 16:35	
Toluene-d8	101	87 - 121	02/24/16 16:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/16/16 14:41
Date Received: 02/18/16 09:40

Sample Name: IW-2
Lab Code: R1601413-003

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	10 U	10	10	02/24/16 17:06	
1,1,2,2-Tetrachloroethane	10 U	10	10	02/24/16 17:06	
1,1,2-Trichloroethane	10 U	10	10	02/24/16 17:06	
1,1,2-Trichloro-1,2,2-trifluoroethane	10 U	10	10	02/24/16 17:06	
1,1-Dichloroethane (1,1-DCA)	10 U	10	10	02/24/16 17:06	
1,1-Dichloroethene (1,1-DCE)	10 U	10	10	02/24/16 17:06	
1,2,3-Trichlorobenzene	10 U	10	10	02/24/16 17:06	
1,2,4-Trichlorobenzene	10 U	10	10	02/24/16 17:06	
1,2,4-Trimethylbenzene	100	10	10	02/24/16 17:06	
1,2-Dibromo-3-chloropropane (DBCP)	20 U	20	10	02/24/16 17:06	
1,2-Dibromoethane	10 U	10	10	02/24/16 17:06	
1,2-Dichlorobenzene	10 U	10	10	02/24/16 17:06	
1,2-Dichloroethane	10 U	10	10	02/24/16 17:06	
1,2-Dichloropropane	10 U	10	10	02/24/16 17:06	
1,3,5-Trimethylbenzene	100	10	10	02/24/16 17:06	
1,3-Dichlorobenzene	10 U	10	10	02/24/16 17:06	
1,4-Dichlorobenzene	10 U	10	10	02/24/16 17:06	
1,4-Dioxane	400 U	400	10	02/24/16 17:06	
2-Butanone (MEK)	50 U	50	10	02/24/16 17:06	
2-Hexanone	50 U	50	10	02/24/16 17:06	
4-Methyl-2-pentanone	50 U	50	10	02/24/16 17:06	
Acetone	50 U	50	10	02/24/16 17:06	
Benzene	10 U	10	10	02/24/16 17:06	
Bromochloromethane	10 U	10	10	02/24/16 17:06	
Bromodichloromethane	10 U	10	10	02/24/16 17:06	
Bromoform	10 U	10	10	02/24/16 17:06	
Bromomethane	10 U	10	10	02/24/16 17:06	
Carbon Disulfide	10 U	10	10	02/24/16 17:06	
Carbon Tetrachloride	10 U	10	10	02/24/16 17:06	
Chlorobenzene	10 U	10	10	02/24/16 17:06	
Chloroethane	10 U	10	10	02/24/16 17:06	
Chloroform	10 U	10	10	02/24/16 17:06	
Chloromethane	10 U	10	10	02/24/16 17:06	
Cyclohexane	10 U	10	10	02/24/16 17:06	
Dibromochloromethane	10 U	10	10	02/24/16 17:06	
Dichlorodifluoromethane (CFC 12)	10 U	10	10	02/24/16 17:06	
Dichloromethane	10 U	10	10	02/24/16 17:06	
Ethylbenzene	10 U	10	10	02/24/16 17:06	
Isopropylbenzene (Cumene)	22	10	10	02/24/16 17:06	
Methyl Acetate	20 U	20	10	02/24/16 17:06	
Methyl tert-Butyl Ether	10 U	10	10	02/24/16 17:06	
Methylcyclohexane	10 U	10	10	02/24/16 17:06	
Styrene	10 U	10	10	02/24/16 17:06	

ALS Group USA, Corp.
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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/16/16 14:41
Date Received: 02/18/16 09:40

Sample Name: IW-2
Lab Code: R1601413-003

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	10 U	10	10	02/24/16 17:06	
Toluene	10 U	10	10	02/24/16 17:06	
Trichloroethene (TCE)	10 U	10	10	02/24/16 17:06	
Trichlorofluoromethane (CFC 11)	10 U	10	10	02/24/16 17:06	
Vinyl Chloride	10 U	10	10	02/24/16 17:06	
cis-1,2-Dichloroethene	10 U	10	10	02/24/16 17:06	
cis-1,3-Dichloropropene	10 U	10	10	02/24/16 17:06	
m,p-Xylenes	20 U	20	10	02/24/16 17:06	
n-Propylbenzene	19	10	10	02/24/16 17:06	
o-Xylene	76	10	10	02/24/16 17:06	
trans-1,2-Dichloroethene	10 U	10	10	02/24/16 17:06	
trans-1,3-Dichloropropene	10 U	10	10	02/24/16 17:06	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	109	85 - 122	02/24/16 17:06	
Dibromofluoromethane	108	89 - 119	02/24/16 17:06	
Toluene-d8	113	87 - 121	02/24/16 17:06	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/17/16 09:21
Date Received: 02/18/16 09:40

Sample Name: GT-7
Lab Code: R1601413-004

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/24/16 17:37	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/24/16 17:37	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/24/16 17:37	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/24/16 17:37	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/24/16 17:37	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/24/16 17:37	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/24/16 17:37	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/24/16 17:37	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/24/16 17:37	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/24/16 17:37	
1,2-Dibromoethane	1.0 U	1.0	1	02/24/16 17:37	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/24/16 17:37	
1,2-Dichloroethane	1.0 U	1.0	1	02/24/16 17:37	
1,2-Dichloropropane	1.0 U	1.0	1	02/24/16 17:37	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/24/16 17:37	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/24/16 17:37	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/24/16 17:37	
1,4-Dioxane	40 U	40	1	02/24/16 17:37	
2-Butanone (MEK)	5.0 U	5.0	1	02/24/16 17:37	
2-Hexanone	5.0 U	5.0	1	02/24/16 17:37	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/24/16 17:37	
Acetone	5.0 U	5.0	1	02/24/16 17:37	
Benzene	1.0 U	1.0	1	02/24/16 17:37	
Bromochloromethane	1.0 U	1.0	1	02/24/16 17:37	
Bromodichloromethane	1.0 U	1.0	1	02/24/16 17:37	
Bromoform	1.0 U	1.0	1	02/24/16 17:37	
Bromomethane	1.0 U	1.0	1	02/24/16 17:37	
Carbon Disulfide	1.0 U	1.0	1	02/24/16 17:37	
Carbon Tetrachloride	1.0 U	1.0	1	02/24/16 17:37	
Chlorobenzene	1.0 U	1.0	1	02/24/16 17:37	
Chloroethane	1.0 U	1.0	1	02/24/16 17:37	
Chloroform	1.0 U	1.0	1	02/24/16 17:37	
Chloromethane	1.0 U	1.0	1	02/24/16 17:37	
Cyclohexane	1.0 U	1.0	1	02/24/16 17:37	
Dibromochloromethane	1.0 U	1.0	1	02/24/16 17:37	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/24/16 17:37	
Dichloromethane	1.0 U	1.0	1	02/24/16 17:37	
Ethylbenzene	1.0 U	1.0	1	02/24/16 17:37	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/24/16 17:37	
Methyl Acetate	2.0 U	2.0	1	02/24/16 17:37	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/24/16 17:37	
Methylcyclohexane	1.0 U	1.0	1	02/24/16 17:37	
Styrene	1.0 U	1.0	1	02/24/16 17:37	

ALS Group USA, Corp.
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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/17/16 09:21
Date Received: 02/18/16 09:40

Sample Name: GT-7
Lab Code: R1601413-004

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/24/16 17:37	
Toluene	1.0 U	1.0	1	02/24/16 17:37	
Trichloroethene (TCE)	1.0 U	1.0	1	02/24/16 17:37	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/24/16 17:37	
Vinyl Chloride	1.0 U	1.0	1	02/24/16 17:37	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 17:37	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 17:37	
m,p-Xylenes	2.0 U	2.0	1	02/24/16 17:37	
n-Propylbenzene	1.0 U	1.0	1	02/24/16 17:37	
o-Xylene	1.0 U	1.0	1	02/24/16 17:37	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 17:37	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 17:37	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	111	85 - 122	02/24/16 17:37	
Dibromofluoromethane	110	89 - 119	02/24/16 17:37	
Toluene-d8	111	87 - 121	02/24/16 17:37	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/17/16 10:41
Date Received: 02/18/16 09:40

Sample Name: VRI-9
Lab Code: R1601413-005

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/24/16 18:08	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/24/16 18:08	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/24/16 18:08	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/24/16 18:08	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/24/16 18:08	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/24/16 18:08	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/24/16 18:08	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/24/16 18:08	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/24/16 18:08	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/24/16 18:08	
1,2-Dibromoethane	1.0 U	1.0	1	02/24/16 18:08	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/24/16 18:08	
1,2-Dichloroethane	1.0 U	1.0	1	02/24/16 18:08	
1,2-Dichloropropane	1.0 U	1.0	1	02/24/16 18:08	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/24/16 18:08	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/24/16 18:08	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/24/16 18:08	
1,4-Dioxane	40 U	40	1	02/24/16 18:08	
2-Butanone (MEK)	5.0 U	5.0	1	02/24/16 18:08	
2-Hexanone	5.0 U	5.0	1	02/24/16 18:08	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/24/16 18:08	
Acetone	5.0 U	5.0	1	02/24/16 18:08	
Benzene	1.0 U	1.0	1	02/24/16 18:08	
Bromochloromethane	1.0 U	1.0	1	02/24/16 18:08	
Bromodichloromethane	1.0 U	1.0	1	02/24/16 18:08	
Bromoform	1.0 U	1.0	1	02/24/16 18:08	
Bromomethane	1.0 U	1.0	1	02/24/16 18:08	
Carbon Disulfide	1.0 U	1.0	1	02/24/16 18:08	
Carbon Tetrachloride	1.0 U	1.0	1	02/24/16 18:08	
Chlorobenzene	1.0 U	1.0	1	02/24/16 18:08	
Chloroethane	1.0 U	1.0	1	02/24/16 18:08	
Chloroform	1.0 U	1.0	1	02/24/16 18:08	
Chloromethane	1.0 U	1.0	1	02/24/16 18:08	
Cyclohexane	1.0 U	1.0	1	02/24/16 18:08	
Dibromochloromethane	1.0 U	1.0	1	02/24/16 18:08	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/24/16 18:08	
Dichloromethane	1.0 U	1.0	1	02/24/16 18:08	
Ethylbenzene	1.0 U	1.0	1	02/24/16 18:08	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/24/16 18:08	
Methyl Acetate	2.0 U	2.0	1	02/24/16 18:08	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/24/16 18:08	
Methylcyclohexane	1.0 U	1.0	1	02/24/16 18:08	
Styrene	1.0 U	1.0	1	02/24/16 18:08	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/17/16 10:41
Date Received: 02/18/16 09:40

Sample Name: VRI-9
Lab Code: R1601413-005

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/24/16 18:08	
Toluene	1.0 U	1.0	1	02/24/16 18:08	
Trichloroethene (TCE)	1.0 U	1.0	1	02/24/16 18:08	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/24/16 18:08	
Vinyl Chloride	1.0 U	1.0	1	02/24/16 18:08	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 18:08	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 18:08	
m,p-Xylenes	2.0 U	2.0	1	02/24/16 18:08	
n-Propylbenzene	1.0 U	1.0	1	02/24/16 18:08	
o-Xylene	1.0 U	1.0	1	02/24/16 18:08	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 18:08	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 18:08	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	109	85 - 122	02/24/16 18:08	
Dibromofluoromethane	111	89 - 119	02/24/16 18:08	
Toluene-d8	102	87 - 121	02/24/16 18:08	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/17/16 11:41
Date Received: 02/18/16 09:40

Sample Name: IW-3
Lab Code: R1601413-006

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	20 U	20	20	02/24/16 20:11	
1,1,2,2-Tetrachloroethane	20 U	20	20	02/24/16 20:11	
1,1,2-Trichloroethane	20 U	20	20	02/24/16 20:11	
1,1,2-Trichloro-1,2,2-trifluoroethane	20 U	20	20	02/24/16 20:11	
1,1-Dichloroethane (1,1-DCA)	20 U	20	20	02/24/16 20:11	
1,1-Dichloroethene (1,1-DCE)	20 U	20	20	02/24/16 20:11	
1,2,3-Trichlorobenzene	20 U	20	20	02/24/16 20:11	
1,2,4-Trichlorobenzene	20 U	20	20	02/24/16 20:11	
1,2,4-Trimethylbenzene	3100	20	20	02/24/16 20:11	
1,2-Dibromo-3-chloropropane (DBCP)	40 U	40	20	02/24/16 20:11	
1,2-Dibromoethane	20 U	20	20	02/24/16 20:11	
1,2-Dichlorobenzene	20 U	20	20	02/24/16 20:11	
1,2-Dichloroethane	20 U	20	20	02/24/16 20:11	
1,2-Dichloropropane	20 U	20	20	02/24/16 20:11	
1,3,5-Trimethylbenzene	3300	20	20	02/24/16 20:11	
1,3-Dichlorobenzene	20 U	20	20	02/24/16 20:11	
1,4-Dichlorobenzene	20 U	20	20	02/24/16 20:11	
1,4-Dioxane	800 U	800	20	02/24/16 20:11	
2-Butanone (MEK)	100 U	100	20	02/24/16 20:11	
2-Hexanone	100 U	100	20	02/24/16 20:11	
4-Methyl-2-pentanone	100 U	100	20	02/24/16 20:11	
Acetone	100 U	100	20	02/24/16 20:11	
Benzene	20 U	20	20	02/24/16 20:11	
Bromochloromethane	20 U	20	20	02/24/16 20:11	
Bromodichloromethane	20 U	20	20	02/24/16 20:11	
Bromoform	20 U	20	20	02/24/16 20:11	
Bromomethane	20 U	20	20	02/24/16 20:11	
Carbon Disulfide	20 U	20	20	02/24/16 20:11	
Carbon Tetrachloride	20 U	20	20	02/24/16 20:11	
Chlorobenzene	20 U	20	20	02/24/16 20:11	
Chloroethane	20 U	20	20	02/24/16 20:11	
Chloroform	20 U	20	20	02/24/16 20:11	
Chloromethane	20 U	20	20	02/24/16 20:11	
Cyclohexane	20 U	20	20	02/24/16 20:11	
Dibromochloromethane	20 U	20	20	02/24/16 20:11	
Dichlorodifluoromethane (CFC 12)	20 U	20	20	02/24/16 20:11	
Dichloromethane	20 U	20	20	02/24/16 20:11	
Ethylbenzene	20 U	20	20	02/24/16 20:11	
Isopropylbenzene (Cumene)	170	20	20	02/24/16 20:11	
Methyl Acetate	40 U	40	20	02/24/16 20:11	
Methyl tert-Butyl Ether	20 U	20	20	02/24/16 20:11	
Methylcyclohexane	20 U	20	20	02/24/16 20:11	
Styrene	20 U	20	20	02/24/16 20:11	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/17/16 11:41
Date Received: 02/18/16 09:40

Sample Name: IW-3
Lab Code: R1601413-006

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	20 U	20	20	02/24/16 20:11	
Toluene	20 U	20	20	02/24/16 20:11	
Trichloroethene (TCE)	20 U	20	20	02/24/16 20:11	
Trichlorofluoromethane (CFC 11)	20 U	20	20	02/24/16 20:11	
Vinyl Chloride	20 U	20	20	02/24/16 20:11	
cis-1,2-Dichloroethene	20 U	20	20	02/24/16 20:11	
cis-1,3-Dichloropropene	20 U	20	20	02/24/16 20:11	
m,p-Xylenes	110	40	20	02/24/16 20:11	
n-Propylbenzene	170	20	20	02/24/16 20:11	
o-Xylene	1600	20	20	02/24/16 20:11	
trans-1,2-Dichloroethene	20 U	20	20	02/24/16 20:11	
trans-1,3-Dichloropropene	20 U	20	20	02/24/16 20:11	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	110	85 - 122	02/24/16 20:11	
Dibromofluoromethane	110	89 - 119	02/24/16 20:11	
Toluene-d8	114	87 - 121	02/24/16 20:11	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/17/16 14:41
Date Received: 02/18/16 09:40

Sample Name: IW-4
Lab Code: R1601413-007

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	5.0 U	5.0	5	02/24/16 18:39	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	5	02/24/16 18:39	
1,1,2-Trichloroethane	5.0 U	5.0	5	02/24/16 18:39	
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0 U	5.0	5	02/24/16 18:39	
1,1-Dichloroethane (1,1-DCA)	5.0 U	5.0	5	02/24/16 18:39	
1,1-Dichloroethene (1,1-DCE)	5.0 U	5.0	5	02/24/16 18:39	
1,2,3-Trichlorobenzene	5.0 U	5.0	5	02/24/16 18:39	
1,2,4-Trichlorobenzene	5.0 U	5.0	5	02/24/16 18:39	
1,2,4-Trimethylbenzene	640	5.0	5	02/24/16 18:39	
1,2-Dibromo-3-chloropropane (DBCP)	10 U	10	5	02/24/16 18:39	
1,2-Dibromoethane	5.0 U	5.0	5	02/24/16 18:39	
1,2-Dichlorobenzene	5.0 U	5.0	5	02/24/16 18:39	
1,2-Dichloroethane	5.0 U	5.0	5	02/24/16 18:39	
1,2-Dichloropropane	5.0 U	5.0	5	02/24/16 18:39	
1,3,5-Trimethylbenzene	720	5.0	5	02/24/16 18:39	
1,3-Dichlorobenzene	5.0 U	5.0	5	02/24/16 18:39	
1,4-Dichlorobenzene	5.0 U	5.0	5	02/24/16 18:39	
1,4-Dioxane	200 U	200	5	02/24/16 18:39	
2-Butanone (MEK)	25 U	25	5	02/24/16 18:39	
2-Hexanone	25 U	25	5	02/24/16 18:39	
4-Methyl-2-pentanone	25 U	25	5	02/24/16 18:39	
Acetone	25 U	25	5	02/24/16 18:39	
Benzene	5.0 U	5.0	5	02/24/16 18:39	
Bromochloromethane	5.0 U	5.0	5	02/24/16 18:39	
Bromodichloromethane	5.0 U	5.0	5	02/24/16 18:39	
Bromoform	5.0 U	5.0	5	02/24/16 18:39	
Bromomethane	5.0 U	5.0	5	02/24/16 18:39	
Carbon Disulfide	5.0 U	5.0	5	02/24/16 18:39	
Carbon Tetrachloride	5.0 U	5.0	5	02/24/16 18:39	
Chlorobenzene	5.0 U	5.0	5	02/24/16 18:39	
Chloroethane	5.0 U	5.0	5	02/24/16 18:39	
Chloroform	5.0 U	5.0	5	02/24/16 18:39	
Chloromethane	5.0 U	5.0	5	02/24/16 18:39	
Cyclohexane	5.0 U	5.0	5	02/24/16 18:39	
Dibromochloromethane	5.0 U	5.0	5	02/24/16 18:39	
Dichlorodifluoromethane (CFC 12)	5.0 U	5.0	5	02/24/16 18:39	
Dichloromethane	5.0 U	5.0	5	02/24/16 18:39	
Ethylbenzene	5.0 U	5.0	5	02/24/16 18:39	
Isopropylbenzene (Cumene)	6.5	5.0	5	02/24/16 18:39	
Methyl Acetate	10 U	10	5	02/24/16 18:39	
Methyl tert-Butyl Ether	5.0 U	5.0	5	02/24/16 18:39	
Methylcyclohexane	5.0 U	5.0	5	02/24/16 18:39	
Styrene	5.0 U	5.0	5	02/24/16 18:39	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/17/16 14:41
Date Received: 02/18/16 09:40

Sample Name: IW-4
Lab Code: R1601413-007

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	5.0 U	5.0	5	02/24/16 18:39	
Toluene	5.0 U	5.0	5	02/24/16 18:39	
Trichloroethene (TCE)	5.0 U	5.0	5	02/24/16 18:39	
Trichlorofluoromethane (CFC 11)	5.0 U	5.0	5	02/24/16 18:39	
Vinyl Chloride	5.0 U	5.0	5	02/24/16 18:39	
cis-1,2-Dichloroethene	5.0 U	5.0	5	02/24/16 18:39	
cis-1,3-Dichloropropene	5.0 U	5.0	5	02/24/16 18:39	
m,p-Xylenes	10 U	10	5	02/24/16 18:39	
n-Propylbenzene	5.0 U	5.0	5	02/24/16 18:39	
o-Xylene	200	5.0	5	02/24/16 18:39	
trans-1,2-Dichloroethene	5.0 U	5.0	5	02/24/16 18:39	
trans-1,3-Dichloropropene	5.0 U	5.0	5	02/24/16 18:39	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	109	85 - 122	02/24/16 18:39	
Dibromofluoromethane	111	89 - 119	02/24/16 18:39	
Toluene-d8	114	87 - 121	02/24/16 18:39	

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dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/17/16
Date Received: 02/18/16 09:40

Sample Name: DUP
Lab Code: R1601413-008

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	20 U	20	20	02/24/16 20:42	
1,1,2,2-Tetrachloroethane	20 U	20	20	02/24/16 20:42	
1,1,2-Trichloroethane	20 U	20	20	02/24/16 20:42	
1,1,2-Trichloro-1,2,2-trifluoroethane	20 U	20	20	02/24/16 20:42	
1,1-Dichloroethane (1,1-DCA)	20 U	20	20	02/24/16 20:42	
1,1-Dichloroethene (1,1-DCE)	20 U	20	20	02/24/16 20:42	
1,2,3-Trichlorobenzene	20 U	20	20	02/24/16 20:42	
1,2,4-Trichlorobenzene	20 U	20	20	02/24/16 20:42	
1,2,4-Trimethylbenzene	3300	20	20	02/24/16 20:42	
1,2-Dibromo-3-chloropropane (DBCP)	40 U	40	20	02/24/16 20:42	
1,2-Dibromoethane	20 U	20	20	02/24/16 20:42	
1,2-Dichlorobenzene	20 U	20	20	02/24/16 20:42	
1,2-Dichloroethane	20 U	20	20	02/24/16 20:42	
1,2-Dichloropropane	20 U	20	20	02/24/16 20:42	
1,3,5-Trimethylbenzene	3400	20	20	02/24/16 20:42	
1,3-Dichlorobenzene	20 U	20	20	02/24/16 20:42	
1,4-Dichlorobenzene	20 U	20	20	02/24/16 20:42	
1,4-Dioxane	800 U	800	20	02/24/16 20:42	
2-Butanone (MEK)	100 U	100	20	02/24/16 20:42	
2-Hexanone	100 U	100	20	02/24/16 20:42	
4-Methyl-2-pentanone	100 U	100	20	02/24/16 20:42	
Acetone	100 U	100	20	02/24/16 20:42	
Benzene	20 U	20	20	02/24/16 20:42	
Bromochloromethane	20 U	20	20	02/24/16 20:42	
Bromodichloromethane	20 U	20	20	02/24/16 20:42	
Bromoform	20 U	20	20	02/24/16 20:42	
Bromomethane	20 U	20	20	02/24/16 20:42	
Carbon Disulfide	20 U	20	20	02/24/16 20:42	
Carbon Tetrachloride	20 U	20	20	02/24/16 20:42	
Chlorobenzene	20 U	20	20	02/24/16 20:42	
Chloroethane	20 U	20	20	02/24/16 20:42	
Chloroform	20 U	20	20	02/24/16 20:42	
Chloromethane	20 U	20	20	02/24/16 20:42	
Cyclohexane	20 U	20	20	02/24/16 20:42	
Dibromochloromethane	20 U	20	20	02/24/16 20:42	
Dichlorodifluoromethane (CFC 12)	20 U	20	20	02/24/16 20:42	
Dichloromethane	20 U	20	20	02/24/16 20:42	
Ethylbenzene	20 U	20	20	02/24/16 20:42	
Isopropylbenzene (Cumene)	170	20	20	02/24/16 20:42	
Methyl Acetate	40 U	40	20	02/24/16 20:42	
Methyl tert-Butyl Ether	20 U	20	20	02/24/16 20:42	
Methylcyclohexane	20 U	20	20	02/24/16 20:42	
Styrene	20 U	20	20	02/24/16 20:42	

ALS Group USA, Corp.
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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/17/16
Date Received: 02/18/16 09:40

Sample Name: DUP
Lab Code: R1601413-008

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	20 U	20	20	02/24/16 20:42	
Toluene	20 U	20	20	02/24/16 20:42	
Trichloroethene (TCE)	20 U	20	20	02/24/16 20:42	
Trichlorofluoromethane (CFC 11)	20 U	20	20	02/24/16 20:42	
Vinyl Chloride	20 U	20	20	02/24/16 20:42	
cis-1,2-Dichloroethene	20 U	20	20	02/24/16 20:42	
cis-1,3-Dichloropropene	20 U	20	20	02/24/16 20:42	
m,p-Xylenes	110	40	20	02/24/16 20:42	
n-Propylbenzene	170	20	20	02/24/16 20:42	
o-Xylene	1700	20	20	02/24/16 20:42	
trans-1,2-Dichloroethene	20 U	20	20	02/24/16 20:42	
trans-1,3-Dichloropropene	20 U	20	20	02/24/16 20:42	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	109	85 - 122	02/24/16 20:42	
Dibromofluoromethane	112	89 - 119	02/24/16 20:42	
Toluene-d8	114	87 - 121	02/24/16 20:42	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/17/16
Date Received: 02/18/16 09:40

Sample Name: TRIP BLANK 1
Lab Code: R1601413-009

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/24/16 13:01	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/24/16 13:01	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/24/16 13:01	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/24/16 13:01	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/24/16 13:01	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/24/16 13:01	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/24/16 13:01	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/24/16 13:01	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/24/16 13:01	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/24/16 13:01	
1,2-Dibromoethane	1.0 U	1.0	1	02/24/16 13:01	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/24/16 13:01	
1,2-Dichloroethane	1.0 U	1.0	1	02/24/16 13:01	
1,2-Dichloropropane	1.0 U	1.0	1	02/24/16 13:01	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/24/16 13:01	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/24/16 13:01	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/24/16 13:01	
1,4-Dioxane	40 U	40	1	02/24/16 13:01	
2-Butanone (MEK)	5.0 U	5.0	1	02/24/16 13:01	
2-Hexanone	5.0 U	5.0	1	02/24/16 13:01	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/24/16 13:01	
Acetone	5.0 U	5.0	1	02/24/16 13:01	
Benzene	1.0 U	1.0	1	02/24/16 13:01	
Bromochloromethane	1.0 U	1.0	1	02/24/16 13:01	
Bromodichloromethane	1.0 U	1.0	1	02/24/16 13:01	
Bromoform	1.0 U	1.0	1	02/24/16 13:01	
Bromomethane	1.0 U	1.0	1	02/24/16 13:01	
Carbon Disulfide	1.0 U	1.0	1	02/24/16 13:01	
Carbon Tetrachloride	1.0 U	1.0	1	02/24/16 13:01	
Chlorobenzene	1.0 U	1.0	1	02/24/16 13:01	
Chloroethane	1.0 U	1.0	1	02/24/16 13:01	
Chloroform	1.0 U	1.0	1	02/24/16 13:01	
Chloromethane	1.0 U	1.0	1	02/24/16 13:01	
Cyclohexane	1.0 U	1.0	1	02/24/16 13:01	
Dibromochloromethane	1.0 U	1.0	1	02/24/16 13:01	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/24/16 13:01	
Dichloromethane	1.0 U	1.0	1	02/24/16 13:01	
Ethylbenzene	1.0 U	1.0	1	02/24/16 13:01	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/24/16 13:01	
Methyl Acetate	2.0 U	2.0	1	02/24/16 13:01	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/24/16 13:01	
Methylcyclohexane	1.0 U	1.0	1	02/24/16 13:01	
Styrene	1.0 U	1.0	1	02/24/16 13:01	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/17/16
Date Received: 02/18/16 09:40

Sample Name: TRIP BLANK 1
Lab Code: R1601413-009

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/24/16 13:01	
Toluene	1.0 U	1.0	1	02/24/16 13:01	
Trichloroethene (TCE)	1.0 U	1.0	1	02/24/16 13:01	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/24/16 13:01	
Vinyl Chloride	1.0 U	1.0	1	02/24/16 13:01	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 13:01	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 13:01	
m,p-Xylenes	2.0 U	2.0	1	02/24/16 13:01	
n-Propylbenzene	1.0 U	1.0	1	02/24/16 13:01	
o-Xylene	1.0 U	1.0	1	02/24/16 13:01	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 13:01	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 13:01	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	02/24/16 13:01	
Dibromofluoromethane	114	89 - 119	02/24/16 13:01	
Toluene-d8	111	87 - 121	02/24/16 13:01	

ALS Group USA, Corp.
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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/18/16 09:11
Date Received: 02/19/16 10:40

Sample Name: IW-7
Lab Code: R1601413-010

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/24/16 15:34	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/24/16 15:34	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/24/16 15:34	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/24/16 15:34	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/24/16 15:34	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/24/16 15:34	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/24/16 15:34	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/24/16 15:34	
1,2,4-Trimethylbenzene	7.3	1.0	1	02/24/16 15:34	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/24/16 15:34	
1,2-Dibromoethane	1.0 U	1.0	1	02/24/16 15:34	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/24/16 15:34	
1,2-Dichloroethane	1.0 U	1.0	1	02/24/16 15:34	
1,2-Dichloropropane	1.0 U	1.0	1	02/24/16 15:34	
1,3,5-Trimethylbenzene	26	1.0	1	02/24/16 15:34	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/24/16 15:34	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/24/16 15:34	
1,4-Dioxane	40 U	40	1	02/24/16 15:34	
2-Butanone (MEK)	5.0 U	5.0	1	02/24/16 15:34	
2-Hexanone	5.0 U	5.0	1	02/24/16 15:34	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/24/16 15:34	
Acetone	5.0 U	5.0	1	02/24/16 15:34	
Benzene	1.0 U	1.0	1	02/24/16 15:34	
Bromochloromethane	1.0 U	1.0	1	02/24/16 15:34	
Bromodichloromethane	1.0 U	1.0	1	02/24/16 15:34	
Bromoform	1.0 U	1.0	1	02/24/16 15:34	
Bromomethane	1.0 U	1.0	1	02/24/16 15:34	
Carbon Disulfide	1.0 U	1.0	1	02/24/16 15:34	
Carbon Tetrachloride	1.0 U	1.0	1	02/24/16 15:34	
Chlorobenzene	1.0 U	1.0	1	02/24/16 15:34	
Chloroethane	1.0 U	1.0	1	02/24/16 15:34	
Chloroform	1.0 U	1.0	1	02/24/16 15:34	
Chloromethane	1.0 U	1.0	1	02/24/16 15:34	
Cyclohexane	1.0 U	1.0	1	02/24/16 15:34	
Dibromochloromethane	1.0 U	1.0	1	02/24/16 15:34	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/24/16 15:34	
Dichloromethane	1.0 U	1.0	1	02/24/16 15:34	
Ethylbenzene	1.0 U	1.0	1	02/24/16 15:34	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/24/16 15:34	
Methyl Acetate	2.0 U	2.0	1	02/24/16 15:34	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/24/16 15:34	
Methylcyclohexane	1.0 U	1.0	1	02/24/16 15:34	
Styrene	1.0 U	1.0	1	02/24/16 15:34	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/18/16 09:11
Date Received: 02/19/16 10:40

Sample Name: IW-7
Lab Code: R1601413-010

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/24/16 15:34	
Toluene	1.0 U	1.0	1	02/24/16 15:34	
Trichloroethene (TCE)	1.0 U	1.0	1	02/24/16 15:34	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/24/16 15:34	
Vinyl Chloride	1.0 U	1.0	1	02/24/16 15:34	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 15:34	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 15:34	
m,p-Xylenes	2.0 U	2.0	1	02/24/16 15:34	
n-Propylbenzene	1.0 U	1.0	1	02/24/16 15:34	
o-Xylene	13	1.0	1	02/24/16 15:34	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 15:34	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 15:34	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	109	85 - 122	02/24/16 15:34	
Dibromofluoromethane	110	89 - 119	02/24/16 15:34	
Toluene-d8	114	87 - 121	02/24/16 15:34	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/18/16 11:00
Date Received: 02/19/16 10:40

Sample Name: IW-1
Lab Code: R1601413-011

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/25/16 18:01	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/25/16 18:01	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/25/16 18:01	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/25/16 18:01	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/25/16 18:01	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/25/16 18:01	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/25/16 18:01	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/25/16 18:01	
1,2,4-Trimethylbenzene	61	1.0	1	02/25/16 18:01	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/25/16 18:01	
1,2-Dibromoethane	1.0 U	1.0	1	02/25/16 18:01	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/25/16 18:01	
1,2-Dichloroethane	1.0 U	1.0	1	02/25/16 18:01	
1,2-Dichloropropane	1.0 U	1.0	1	02/25/16 18:01	
1,3,5-Trimethylbenzene	24	1.0	1	02/25/16 18:01	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/25/16 18:01	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/25/16 18:01	
1,4-Dioxane	40 U	40	1	02/25/16 18:01	
2-Butanone (MEK)	5.0 U	5.0	1	02/25/16 18:01	
2-Hexanone	5.0 U	5.0	1	02/25/16 18:01	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/25/16 18:01	
Acetone	5.0 U	5.0	1	02/25/16 18:01	
Benzene	1.0 U	1.0	1	02/25/16 18:01	
Bromochloromethane	1.0 U	1.0	1	02/25/16 18:01	
Bromodichloromethane	1.0 U	1.0	1	02/25/16 18:01	
Bromoform	1.0 U	1.0	1	02/25/16 18:01	
Bromomethane	1.0 U	1.0	1	02/25/16 18:01	
Carbon Disulfide	1.0 U	1.0	1	02/25/16 18:01	
Carbon Tetrachloride	1.0 U	1.0	1	02/25/16 18:01	
Chlorobenzene	1.0 U	1.0	1	02/25/16 18:01	
Chloroethane	1.0 U	1.0	1	02/25/16 18:01	
Chloroform	1.0 U	1.0	1	02/25/16 18:01	
Chloromethane	1.0 U	1.0	1	02/25/16 18:01	
Cyclohexane	1.0 U	1.0	1	02/25/16 18:01	
Dibromochloromethane	1.0 U	1.0	1	02/25/16 18:01	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/25/16 18:01	
Dichloromethane	1.0 U	1.0	1	02/25/16 18:01	
Ethylbenzene	1.0 U	1.0	1	02/25/16 18:01	
Isopropylbenzene (Cumene)	4.1	1.0	1	02/25/16 18:01	
Methyl Acetate	2.0 U	2.0	1	02/25/16 18:01	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/25/16 18:01	
Methylcyclohexane	1.0 U	1.0	1	02/25/16 18:01	
Styrene	1.0 U	1.0	1	02/25/16 18:01	

ALS Group USA, Corp.
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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/18/16 11:00
Date Received: 02/19/16 10:40

Sample Name: IW-1
Lab Code: R1601413-011

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/25/16 18:01	
Toluene	1.0 U	1.0	1	02/25/16 18:01	
Trichloroethene (TCE)	1.0 U	1.0	1	02/25/16 18:01	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/25/16 18:01	
Vinyl Chloride	1.0 U	1.0	1	02/25/16 18:01	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/25/16 18:01	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/25/16 18:01	
m,p-Xylenes	3.5	2.0	1	02/25/16 18:01	
n-Propylbenzene	5.9	1.0	1	02/25/16 18:01	
o-Xylene	40	1.0	1	02/25/16 18:01	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/25/16 18:01	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/25/16 18:01	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	02/25/16 18:01	
Dibromofluoromethane	108	89 - 119	02/25/16 18:01	
Toluene-d8	109	87 - 121	02/25/16 18:01	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/18/16 13:21
Date Received: 02/19/16 10:40

Sample Name: VRI-1
Lab Code: R1601413-012

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/25/16 18:31	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/25/16 18:31	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/25/16 18:31	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/25/16 18:31	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/25/16 18:31	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/25/16 18:31	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/25/16 18:31	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/25/16 18:31	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/25/16 18:31	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/25/16 18:31	
1,2-Dibromoethane	1.0 U	1.0	1	02/25/16 18:31	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/25/16 18:31	
1,2-Dichloroethane	1.0 U	1.0	1	02/25/16 18:31	
1,2-Dichloropropane	1.0 U	1.0	1	02/25/16 18:31	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/25/16 18:31	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/25/16 18:31	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/25/16 18:31	
1,4-Dioxane	40 U	40	1	02/25/16 18:31	
2-Butanone (MEK)	5.0 U	5.0	1	02/25/16 18:31	
2-Hexanone	5.0 U	5.0	1	02/25/16 18:31	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/25/16 18:31	
Acetone	5.0 U	5.0	1	02/25/16 18:31	
Benzene	1.0 U	1.0	1	02/25/16 18:31	
Bromochloromethane	1.0 U	1.0	1	02/25/16 18:31	
Bromodichloromethane	1.0 U	1.0	1	02/25/16 18:31	
Bromoform	1.0 U	1.0	1	02/25/16 18:31	
Bromomethane	1.0 U	1.0	1	02/25/16 18:31	
Carbon Disulfide	1.0 U	1.0	1	02/25/16 18:31	
Carbon Tetrachloride	1.0 U	1.0	1	02/25/16 18:31	
Chlorobenzene	1.0 U	1.0	1	02/25/16 18:31	
Chloroethane	1.0 U	1.0	1	02/25/16 18:31	
Chloroform	1.0 U	1.0	1	02/25/16 18:31	
Chloromethane	1.0 U	1.0	1	02/25/16 18:31	
Cyclohexane	1.0 U	1.0	1	02/25/16 18:31	
Dibromochloromethane	1.0 U	1.0	1	02/25/16 18:31	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/25/16 18:31	
Dichloromethane	1.0 U	1.0	1	02/25/16 18:31	
Ethylbenzene	1.0 U	1.0	1	02/25/16 18:31	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/25/16 18:31	
Methyl Acetate	2.0 U	2.0	1	02/25/16 18:31	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/25/16 18:31	
Methylcyclohexane	1.0 U	1.0	1	02/25/16 18:31	
Styrene	1.0 U	1.0	1	02/25/16 18:31	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/18/16 13:21
Date Received: 02/19/16 10:40

Sample Name: VRI-1
Lab Code: R1601413-012

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/25/16 18:31	
Toluene	1.0 U	1.0	1	02/25/16 18:31	
Trichloroethene (TCE)	1.0 U	1.0	1	02/25/16 18:31	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/25/16 18:31	
Vinyl Chloride	1.0 U	1.0	1	02/25/16 18:31	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/25/16 18:31	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/25/16 18:31	
m,p-Xylenes	2.0 U	2.0	1	02/25/16 18:31	
n-Propylbenzene	1.0 U	1.0	1	02/25/16 18:31	
o-Xylene	1.0 U	1.0	1	02/25/16 18:31	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/25/16 18:31	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/25/16 18:31	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	02/25/16 18:31	
Dibromofluoromethane	110	89 - 119	02/25/16 18:31	
Toluene-d8	115	87 - 121	02/25/16 18:31	

ALS Group USA, Corp.
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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/18/16 14:41
Date Received: 02/19/16 10:40

Sample Name: IW-5
Lab Code: R1601413-013

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	50 U	50	50	02/25/16 20:33	
1,1,2,2-Tetrachloroethane	50 U	50	50	02/25/16 20:33	
1,1,2-Trichloroethane	50 U	50	50	02/25/16 20:33	
1,1,2-Trichloro-1,2,2-trifluoroethane	50 U	50	50	02/25/16 20:33	
1,1-Dichloroethane (1,1-DCA)	50 U	50	50	02/25/16 20:33	
1,1-Dichloroethene (1,1-DCE)	50 U	50	50	02/25/16 20:33	
1,2,3-Trichlorobenzene	50 U	50	50	02/25/16 20:33	
1,2,4-Trichlorobenzene	50 U	50	50	02/25/16 20:33	
1,2,4-Trimethylbenzene	8800	50	50	02/25/16 20:33	
1,2-Dibromo-3-chloropropane (DBCP)	100 U	100	50	02/25/16 20:33	
1,2-Dibromoethane	50 U	50	50	02/25/16 20:33	
1,2-Dichlorobenzene	50 U	50	50	02/25/16 20:33	
1,2-Dichloroethane	50 U	50	50	02/25/16 20:33	
1,2-Dichloropropane	50 U	50	50	02/25/16 20:33	
1,3,5-Trimethylbenzene	4400	50	50	02/25/16 20:33	
1,3-Dichlorobenzene	50 U	50	50	02/25/16 20:33	
1,4-Dichlorobenzene	50 U	50	50	02/25/16 20:33	
1,4-Dioxane	2000 U	2000	50	02/25/16 20:33	
2-Butanone (MEK)	250 U	250	50	02/25/16 20:33	
2-Hexanone	250 U	250	50	02/25/16 20:33	
4-Methyl-2-pentanone	250 U	250	50	02/25/16 20:33	
Acetone	250 U	250	50	02/25/16 20:33	
Benzene	50 U	50	50	02/25/16 20:33	
Bromochloromethane	50 U	50	50	02/25/16 20:33	
Bromodichloromethane	50 U	50	50	02/25/16 20:33	
Bromoform	50 U	50	50	02/25/16 20:33	
Bromomethane	50 U	50	50	02/25/16 20:33	
Carbon Disulfide	50 U	50	50	02/25/16 20:33	
Carbon Tetrachloride	50 U	50	50	02/25/16 20:33	
Chlorobenzene	50 U	50	50	02/25/16 20:33	
Chloroethane	50 U	50	50	02/25/16 20:33	
Chloroform	50 U	50	50	02/25/16 20:33	
Chloromethane	50 U	50	50	02/25/16 20:33	
Cyclohexane	50 U	50	50	02/25/16 20:33	
Dibromochloromethane	50 U	50	50	02/25/16 20:33	
Dichlorodifluoromethane (CFC 12)	50 U	50	50	02/25/16 20:33	
Dichloromethane	50 U	50	50	02/25/16 20:33	
Ethylbenzene	50 U	50	50	02/25/16 20:33	
Isopropylbenzene (Cumene)	520	50	50	02/25/16 20:33	
Methyl Acetate	100 U	100	50	02/25/16 20:33	
Methyl tert-Butyl Ether	50 U	50	50	02/25/16 20:33	
Methylcyclohexane	50 U	50	50	02/25/16 20:33	
Styrene	50 U	50	50	02/25/16 20:33	

ALS Group USA, Corp.
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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/18/16 14:41
Date Received: 02/19/16 10:40

Sample Name: IW-5
Lab Code: R1601413-013

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	50 U	50	50	02/25/16 20:33	
Toluene	50 U	50	50	02/25/16 20:33	
Trichloroethene (TCE)	50 U	50	50	02/25/16 20:33	
Trichlorofluoromethane (CFC 11)	50 U	50	50	02/25/16 20:33	
Vinyl Chloride	50 U	50	50	02/25/16 20:33	
cis-1,2-Dichloroethene	50 U	50	50	02/25/16 20:33	
cis-1,3-Dichloropropene	50 U	50	50	02/25/16 20:33	
m,p-Xylenes	180	100	50	02/25/16 20:33	
n-Propylbenzene	580	50	50	02/25/16 20:33	
o-Xylene	2800	50	50	02/25/16 20:33	
trans-1,2-Dichloroethene	50 U	50	50	02/25/16 20:33	
trans-1,3-Dichloropropene	50 U	50	50	02/25/16 20:33	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	02/25/16 20:33	
Dibromofluoromethane	109	89 - 119	02/25/16 20:33	
Toluene-d8	115	87 - 121	02/25/16 20:33	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/18/16
Date Received: 02/19/16 10:40

Sample Name: TRIP BLANK 2
Lab Code: R1601413-014

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/24/16 13:31	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/24/16 13:31	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/24/16 13:31	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/24/16 13:31	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/24/16 13:31	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/24/16 13:31	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/24/16 13:31	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/24/16 13:31	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/24/16 13:31	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/24/16 13:31	
1,2-Dibromoethane	1.0 U	1.0	1	02/24/16 13:31	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/24/16 13:31	
1,2-Dichloroethane	1.0 U	1.0	1	02/24/16 13:31	
1,2-Dichloropropane	1.0 U	1.0	1	02/24/16 13:31	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/24/16 13:31	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/24/16 13:31	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/24/16 13:31	
1,4-Dioxane	40 U	40	1	02/24/16 13:31	
2-Butanone (MEK)	5.0 U	5.0	1	02/24/16 13:31	
2-Hexanone	5.0 U	5.0	1	02/24/16 13:31	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/24/16 13:31	
Acetone	5.0 U	5.0	1	02/24/16 13:31	
Benzene	1.0 U	1.0	1	02/24/16 13:31	
Bromochloromethane	1.0 U	1.0	1	02/24/16 13:31	
Bromodichloromethane	1.0 U	1.0	1	02/24/16 13:31	
Bromoform	1.0 U	1.0	1	02/24/16 13:31	
Bromomethane	1.0 U	1.0	1	02/24/16 13:31	
Carbon Disulfide	1.0 U	1.0	1	02/24/16 13:31	
Carbon Tetrachloride	1.0 U	1.0	1	02/24/16 13:31	
Chlorobenzene	1.0 U	1.0	1	02/24/16 13:31	
Chloroethane	1.0 U	1.0	1	02/24/16 13:31	
Chloroform	1.0 U	1.0	1	02/24/16 13:31	
Chloromethane	1.0 U	1.0	1	02/24/16 13:31	
Cyclohexane	1.0 U	1.0	1	02/24/16 13:31	
Dibromochloromethane	1.0 U	1.0	1	02/24/16 13:31	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/24/16 13:31	
Dichloromethane	1.0 U	1.0	1	02/24/16 13:31	
Ethylbenzene	1.0 U	1.0	1	02/24/16 13:31	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/24/16 13:31	
Methyl Acetate	2.0 U	2.0	1	02/24/16 13:31	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/24/16 13:31	
Methylcyclohexane	1.0 U	1.0	1	02/24/16 13:31	
Styrene	1.0 U	1.0	1	02/24/16 13:31	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/18/16
Date Received: 02/19/16 10:40

Sample Name: TRIP BLANK 2
Lab Code: R1601413-014

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/24/16 13:31	
Toluene	1.0 U	1.0	1	02/24/16 13:31	
Trichloroethene (TCE)	1.0 U	1.0	1	02/24/16 13:31	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/24/16 13:31	
Vinyl Chloride	1.0 U	1.0	1	02/24/16 13:31	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 13:31	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 13:31	
m,p-Xylenes	2.0 U	2.0	1	02/24/16 13:31	
n-Propylbenzene	1.0 U	1.0	1	02/24/16 13:31	
o-Xylene	1.0 U	1.0	1	02/24/16 13:31	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 13:31	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 13:31	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	107	85 - 122	02/24/16 13:31	
Dibromofluoromethane	109	89 - 119	02/24/16 13:31	
Toluene-d8	113	87 - 121	02/24/16 13:31	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/19/16 09:10
Date Received: 02/20/16 09:50

Sample Name: IW-6
Lab Code: R1601413-015

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	10 U	10	10	02/25/16 20:03	
1,1,2,2-Tetrachloroethane	10 U	10	10	02/25/16 20:03	
1,1,2-Trichloroethane	10 U	10	10	02/25/16 20:03	
1,1,2-Trichloro-1,2,2-trifluoroethane	10 U	10	10	02/25/16 20:03	
1,1-Dichloroethane (1,1-DCA)	10 U	10	10	02/25/16 20:03	
1,1-Dichloroethene (1,1-DCE)	10 U	10	10	02/25/16 20:03	
1,2,3-Trichlorobenzene	10 U	10	10	02/25/16 20:03	
1,2,4-Trichlorobenzene	10 U	10	10	02/25/16 20:03	
1,2,4-Trimethylbenzene	300	10	10	02/25/16 20:03	
1,2-Dibromo-3-chloropropane (DBCP)	20 U	20	10	02/25/16 20:03	
1,2-Dibromoethane	10 U	10	10	02/25/16 20:03	
1,2-Dichlorobenzene	10 U	10	10	02/25/16 20:03	
1,2-Dichloroethane	10 U	10	10	02/25/16 20:03	
1,2-Dichloropropane	10 U	10	10	02/25/16 20:03	
1,3,5-Trimethylbenzene	380	10	10	02/25/16 20:03	
1,3-Dichlorobenzene	10 U	10	10	02/25/16 20:03	
1,4-Dichlorobenzene	10 U	10	10	02/25/16 20:03	
1,4-Dioxane	400 U	400	10	02/25/16 20:03	
2-Butanone (MEK)	50 U	50	10	02/25/16 20:03	
2-Hexanone	50 U	50	10	02/25/16 20:03	
4-Methyl-2-pentanone	50 U	50	10	02/25/16 20:03	
Acetone	50 U	50	10	02/25/16 20:03	
Benzene	10 U	10	10	02/25/16 20:03	
Bromochloromethane	10 U	10	10	02/25/16 20:03	
Bromodichloromethane	10 U	10	10	02/25/16 20:03	
Bromoform	10 U	10	10	02/25/16 20:03	
Bromomethane	10 U	10	10	02/25/16 20:03	
Carbon Disulfide	10 U	10	10	02/25/16 20:03	
Carbon Tetrachloride	10 U	10	10	02/25/16 20:03	
Chlorobenzene	10 U	10	10	02/25/16 20:03	
Chloroethane	10 U	10	10	02/25/16 20:03	
Chloroform	10 U	10	10	02/25/16 20:03	
Chloromethane	10 U	10	10	02/25/16 20:03	
Cyclohexane	10 U	10	10	02/25/16 20:03	
Dibromochloromethane	10 U	10	10	02/25/16 20:03	
Dichlorodifluoromethane (CFC 12)	10 U	10	10	02/25/16 20:03	
Dichloromethane	10 U	10	10	02/25/16 20:03	
Ethylbenzene	10 U	10	10	02/25/16 20:03	
Isopropylbenzene (Cumene)	94	10	10	02/25/16 20:03	
Methyl Acetate	20 U	20	10	02/25/16 20:03	
Methyl tert-Butyl Ether	10 U	10	10	02/25/16 20:03	
Methylcyclohexane	10 U	10	10	02/25/16 20:03	
Styrene	10 U	10	10	02/25/16 20:03	

ALS Group USA, Corp.
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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/19/16 09:10
Date Received: 02/20/16 09:50

Sample Name: IW-6
Lab Code: R1601413-015

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	10 U	10	10	02/25/16 20:03	
Toluene	10 U	10	10	02/25/16 20:03	
Trichloroethene (TCE)	10 U	10	10	02/25/16 20:03	
Trichlorofluoromethane (CFC 11)	10 U	10	10	02/25/16 20:03	
Vinyl Chloride	10 U	10	10	02/25/16 20:03	
cis-1,2-Dichloroethene	10 U	10	10	02/25/16 20:03	
cis-1,3-Dichloropropene	10 U	10	10	02/25/16 20:03	
m,p-Xylenes	35	20	10	02/25/16 20:03	
n-Propylbenzene	120	10	10	02/25/16 20:03	
o-Xylene	260	10	10	02/25/16 20:03	
trans-1,2-Dichloroethene	10 U	10	10	02/25/16 20:03	
trans-1,3-Dichloropropene	10 U	10	10	02/25/16 20:03	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	02/25/16 20:03	
Dibromofluoromethane	108	89 - 119	02/25/16 20:03	
Toluene-d8	117	87 - 121	02/25/16 20:03	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/19/16 11:10
Date Received: 02/20/16 09:50

Sample Name: VRI-4
Lab Code: R1601413-016

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/25/16 19:02	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/25/16 19:02	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/25/16 19:02	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/25/16 19:02	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/25/16 19:02	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/25/16 19:02	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/25/16 19:02	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/25/16 19:02	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/25/16 19:02	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/25/16 19:02	
1,2-Dibromoethane	1.0 U	1.0	1	02/25/16 19:02	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/25/16 19:02	
1,2-Dichloroethane	1.0 U	1.0	1	02/25/16 19:02	
1,2-Dichloropropane	1.0 U	1.0	1	02/25/16 19:02	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/25/16 19:02	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/25/16 19:02	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/25/16 19:02	
1,4-Dioxane	40 U	40	1	02/25/16 19:02	
2-Butanone (MEK)	5.0 U	5.0	1	02/25/16 19:02	
2-Hexanone	5.0 U	5.0	1	02/25/16 19:02	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/25/16 19:02	
Acetone	5.0 U	5.0	1	02/25/16 19:02	
Benzene	1.0 U	1.0	1	02/25/16 19:02	
Bromochloromethane	1.0 U	1.0	1	02/25/16 19:02	
Bromodichloromethane	1.0 U	1.0	1	02/25/16 19:02	
Bromoform	1.0 U	1.0	1	02/25/16 19:02	
Bromomethane	1.0 U	1.0	1	02/25/16 19:02	
Carbon Disulfide	1.0 U	1.0	1	02/25/16 19:02	
Carbon Tetrachloride	1.0 U	1.0	1	02/25/16 19:02	
Chlorobenzene	1.0 U	1.0	1	02/25/16 19:02	
Chloroethane	1.0 U	1.0	1	02/25/16 19:02	
Chloroform	1.0 U	1.0	1	02/25/16 19:02	
Chloromethane	1.0 U	1.0	1	02/25/16 19:02	
Cyclohexane	1.0 U	1.0	1	02/25/16 19:02	
Dibromochloromethane	1.0 U	1.0	1	02/25/16 19:02	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/25/16 19:02	
Dichloromethane	1.0 U	1.0	1	02/25/16 19:02	
Ethylbenzene	1.0 U	1.0	1	02/25/16 19:02	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/25/16 19:02	
Methyl Acetate	2.0 U	2.0	1	02/25/16 19:02	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/25/16 19:02	
Methylcyclohexane	1.0 U	1.0	1	02/25/16 19:02	
Styrene	1.0 U	1.0	1	02/25/16 19:02	

ALS Group USA, Corp.
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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/19/16 11:10
Date Received: 02/20/16 09:50

Sample Name: VRI-4
Lab Code: R1601413-016

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/25/16 19:02	
Toluene	1.0 U	1.0	1	02/25/16 19:02	
Trichloroethene (TCE)	1.0 U	1.0	1	02/25/16 19:02	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/25/16 19:02	
Vinyl Chloride	1.0 U	1.0	1	02/25/16 19:02	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/25/16 19:02	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/25/16 19:02	
m,p-Xylenes	2.0 U	2.0	1	02/25/16 19:02	
n-Propylbenzene	1.0 U	1.0	1	02/25/16 19:02	
o-Xylene	1.0 U	1.0	1	02/25/16 19:02	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/25/16 19:02	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/25/16 19:02	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	107	85 - 122	02/25/16 19:02	
Dibromofluoromethane	108	89 - 119	02/25/16 19:02	
Toluene-d8	99	87 - 121	02/25/16 19:02	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/19/16 14:30
Date Received: 02/20/16 09:50

Sample Name: GT-15
Lab Code: R1601413-017

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/25/16 19:32	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/25/16 19:32	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/25/16 19:32	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/25/16 19:32	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/25/16 19:32	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/25/16 19:32	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/25/16 19:32	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/25/16 19:32	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/25/16 19:32	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/25/16 19:32	
1,2-Dibromoethane	1.0 U	1.0	1	02/25/16 19:32	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/25/16 19:32	
1,2-Dichloroethane	1.0 U	1.0	1	02/25/16 19:32	
1,2-Dichloropropane	1.0 U	1.0	1	02/25/16 19:32	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/25/16 19:32	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/25/16 19:32	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/25/16 19:32	
1,4-Dioxane	40 U	40	1	02/25/16 19:32	
2-Butanone (MEK)	5.0 U	5.0	1	02/25/16 19:32	
2-Hexanone	5.0 U	5.0	1	02/25/16 19:32	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/25/16 19:32	
Acetone	5.0 U	5.0	1	02/25/16 19:32	
Benzene	1.0 U	1.0	1	02/25/16 19:32	
Bromochloromethane	1.0 U	1.0	1	02/25/16 19:32	
Bromodichloromethane	1.0 U	1.0	1	02/25/16 19:32	
Bromoform	1.0 U	1.0	1	02/25/16 19:32	
Bromomethane	1.0 U	1.0	1	02/25/16 19:32	
Carbon Disulfide	1.0 U	1.0	1	02/25/16 19:32	
Carbon Tetrachloride	1.0 U	1.0	1	02/25/16 19:32	
Chlorobenzene	1.0 U	1.0	1	02/25/16 19:32	
Chloroethane	1.0 U	1.0	1	02/25/16 19:32	
Chloroform	1.0 U	1.0	1	02/25/16 19:32	
Chloromethane	1.0 U	1.0	1	02/25/16 19:32	
Cyclohexane	1.0 U	1.0	1	02/25/16 19:32	
Dibromochloromethane	1.0 U	1.0	1	02/25/16 19:32	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/25/16 19:32	
Dichloromethane	1.0 U	1.0	1	02/25/16 19:32	
Ethylbenzene	1.0 U	1.0	1	02/25/16 19:32	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/25/16 19:32	
Methyl Acetate	2.0 U	2.0	1	02/25/16 19:32	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/25/16 19:32	
Methylcyclohexane	1.0 U	1.0	1	02/25/16 19:32	
Styrene	1.0 U	1.0	1	02/25/16 19:32	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/19/16 14:30
Date Received: 02/20/16 09:50

Sample Name: GT-15
Lab Code: R1601413-017

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/25/16 19:32	
Toluene	1.0 U	1.0	1	02/25/16 19:32	
Trichloroethene (TCE)	2.2	1.0	1	02/25/16 19:32	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/25/16 19:32	
Vinyl Chloride	1.0 U	1.0	1	02/25/16 19:32	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/25/16 19:32	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/25/16 19:32	
m,p-Xylenes	2.0 U	2.0	1	02/25/16 19:32	
n-Propylbenzene	1.0 U	1.0	1	02/25/16 19:32	
o-Xylene	1.0 U	1.0	1	02/25/16 19:32	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/25/16 19:32	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/25/16 19:32	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	02/25/16 19:32	
Dibromofluoromethane	111	89 - 119	02/25/16 19:32	
Toluene-d8	100	87 - 121	02/25/16 19:32	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/19/16
Date Received: 02/20/16 09:50

Sample Name: TRIP BLANK 3
Lab Code: R1601413-018

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/24/16 14:02	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/24/16 14:02	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/24/16 14:02	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/24/16 14:02	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/24/16 14:02	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/24/16 14:02	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/24/16 14:02	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/24/16 14:02	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/24/16 14:02	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/24/16 14:02	
1,2-Dibromoethane	1.0 U	1.0	1	02/24/16 14:02	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/24/16 14:02	
1,2-Dichloroethane	1.0 U	1.0	1	02/24/16 14:02	
1,2-Dichloropropane	1.0 U	1.0	1	02/24/16 14:02	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/24/16 14:02	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/24/16 14:02	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/24/16 14:02	
1,4-Dioxane	40 U	40	1	02/24/16 14:02	
2-Butanone (MEK)	5.0 U	5.0	1	02/24/16 14:02	
2-Hexanone	5.0 U	5.0	1	02/24/16 14:02	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/24/16 14:02	
Acetone	5.0 U	5.0	1	02/24/16 14:02	
Benzene	1.0 U	1.0	1	02/24/16 14:02	
Bromochloromethane	1.0 U	1.0	1	02/24/16 14:02	
Bromodichloromethane	1.0 U	1.0	1	02/24/16 14:02	
Bromoform	1.0 U	1.0	1	02/24/16 14:02	
Bromomethane	1.0 U	1.0	1	02/24/16 14:02	
Carbon Disulfide	1.0 U	1.0	1	02/24/16 14:02	
Carbon Tetrachloride	1.0 U	1.0	1	02/24/16 14:02	
Chlorobenzene	1.0 U	1.0	1	02/24/16 14:02	
Chloroethane	1.0 U	1.0	1	02/24/16 14:02	
Chloroform	1.0 U	1.0	1	02/24/16 14:02	
Chloromethane	1.0 U	1.0	1	02/24/16 14:02	
Cyclohexane	1.0 U	1.0	1	02/24/16 14:02	
Dibromochloromethane	1.0 U	1.0	1	02/24/16 14:02	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/24/16 14:02	
Dichloromethane	1.0 U	1.0	1	02/24/16 14:02	
Ethylbenzene	1.0 U	1.0	1	02/24/16 14:02	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/24/16 14:02	
Methyl Acetate	2.0 U	2.0	1	02/24/16 14:02	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/24/16 14:02	
Methylcyclohexane	1.0 U	1.0	1	02/24/16 14:02	
Styrene	1.0 U	1.0	1	02/24/16 14:02	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/19/16
Date Received: 02/20/16 09:50

Sample Name: TRIP BLANK 3
Lab Code: R1601413-018

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/24/16 14:02	
Toluene	1.0 U	1.0	1	02/24/16 14:02	
Trichloroethene (TCE)	1.0 U	1.0	1	02/24/16 14:02	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/24/16 14:02	
Vinyl Chloride	1.0 U	1.0	1	02/24/16 14:02	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 14:02	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 14:02	
m,p-Xylenes	2.0 U	2.0	1	02/24/16 14:02	
n-Propylbenzene	1.0 U	1.0	1	02/24/16 14:02	
o-Xylene	1.0 U	1.0	1	02/24/16 14:02	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 14:02	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 14:02	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	109	85 - 122	02/24/16 14:02	
Dibromofluoromethane	108	89 - 119	02/24/16 14:02	
Toluene-d8	114	87 - 121	02/24/16 14:02	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ1601983-04

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/24/16 12:29	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/24/16 12:29	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/24/16 12:29	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/24/16 12:29	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/24/16 12:29	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/24/16 12:29	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/24/16 12:29	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/24/16 12:29	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/24/16 12:29	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/24/16 12:29	
1,2-Dibromoethane	1.0 U	1.0	1	02/24/16 12:29	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/24/16 12:29	
1,2-Dichloroethane	1.0 U	1.0	1	02/24/16 12:29	
1,2-Dichloropropane	1.0 U	1.0	1	02/24/16 12:29	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/24/16 12:29	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/24/16 12:29	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/24/16 12:29	
1,4-Dioxane	40 U	40	1	02/24/16 12:29	
2-Butanone (MEK)	5.0 U	5.0	1	02/24/16 12:29	
2-Hexanone	5.0 U	5.0	1	02/24/16 12:29	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/24/16 12:29	
Acetone	5.0 U	5.0	1	02/24/16 12:29	
Benzene	1.0 U	1.0	1	02/24/16 12:29	
Bromochloromethane	1.0 U	1.0	1	02/24/16 12:29	
Bromodichloromethane	1.0 U	1.0	1	02/24/16 12:29	
Bromoform	1.0 U	1.0	1	02/24/16 12:29	
Bromomethane	1.0 U	1.0	1	02/24/16 12:29	
Carbon Disulfide	1.0 U	1.0	1	02/24/16 12:29	
Carbon Tetrachloride	1.0 U	1.0	1	02/24/16 12:29	
Chlorobenzene	1.0 U	1.0	1	02/24/16 12:29	
Chloroethane	1.0 U	1.0	1	02/24/16 12:29	
Chloroform	1.0 U	1.0	1	02/24/16 12:29	
Chloromethane	1.0 U	1.0	1	02/24/16 12:29	
Cyclohexane	1.0 U	1.0	1	02/24/16 12:29	
Dibromochloromethane	1.0 U	1.0	1	02/24/16 12:29	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/24/16 12:29	
Dichloromethane	1.0 U	1.0	1	02/24/16 12:29	
Ethylbenzene	1.0 U	1.0	1	02/24/16 12:29	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/24/16 12:29	
Methyl Acetate	2.0 U	2.0	1	02/24/16 12:29	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/24/16 12:29	
Methylcyclohexane	1.0 U	1.0	1	02/24/16 12:29	
Styrene	1.0 U	1.0	1	02/24/16 12:29	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ1601983-04

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/24/16 12:29	
Toluene	1.0 U	1.0	1	02/24/16 12:29	
Trichloroethene (TCE)	1.0 U	1.0	1	02/24/16 12:29	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/24/16 12:29	
Vinyl Chloride	1.0 U	1.0	1	02/24/16 12:29	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 12:29	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 12:29	
m,p-Xylenes	2.0 U	2.0	1	02/24/16 12:29	
n-Propylbenzene	1.0 U	1.0	1	02/24/16 12:29	
o-Xylene	1.0 U	1.0	1	02/24/16 12:29	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/24/16 12:29	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/24/16 12:29	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	02/24/16 12:29	
Dibromofluoromethane	111	89 - 119	02/24/16 12:29	
Toluene-d8	115	87 - 121	02/24/16 12:29	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ1602026-04

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/25/16 12:22	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/25/16 12:22	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/25/16 12:22	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/25/16 12:22	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/25/16 12:22	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/25/16 12:22	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/25/16 12:22	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/25/16 12:22	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/25/16 12:22	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/25/16 12:22	
1,2-Dibromoethane	1.0 U	1.0	1	02/25/16 12:22	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/25/16 12:22	
1,2-Dichloroethane	1.0 U	1.0	1	02/25/16 12:22	
1,2-Dichloropropane	1.0 U	1.0	1	02/25/16 12:22	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/25/16 12:22	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/25/16 12:22	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/25/16 12:22	
1,4-Dioxane	40 U	40	1	02/25/16 12:22	
2-Butanone (MEK)	5.0 U	5.0	1	02/25/16 12:22	
2-Hexanone	5.0 U	5.0	1	02/25/16 12:22	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/25/16 12:22	
Acetone	5.0 U	5.0	1	02/25/16 12:22	
Benzene	1.0 U	1.0	1	02/25/16 12:22	
Bromochloromethane	1.0 U	1.0	1	02/25/16 12:22	
Bromodichloromethane	1.0 U	1.0	1	02/25/16 12:22	
Bromoform	1.0 U	1.0	1	02/25/16 12:22	
Bromomethane	1.0 U	1.0	1	02/25/16 12:22	
Carbon Disulfide	1.0 U	1.0	1	02/25/16 12:22	
Carbon Tetrachloride	1.0 U	1.0	1	02/25/16 12:22	
Chlorobenzene	1.0 U	1.0	1	02/25/16 12:22	
Chloroethane	1.0 U	1.0	1	02/25/16 12:22	
Chloroform	1.0 U	1.0	1	02/25/16 12:22	
Chloromethane	1.0 U	1.0	1	02/25/16 12:22	
Cyclohexane	1.0 U	1.0	1	02/25/16 12:22	
Dibromochloromethane	1.0 U	1.0	1	02/25/16 12:22	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/25/16 12:22	
Dichloromethane	1.0 U	1.0	1	02/25/16 12:22	
Ethylbenzene	1.0 U	1.0	1	02/25/16 12:22	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/25/16 12:22	
Methyl Acetate	2.0 U	2.0	1	02/25/16 12:22	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/25/16 12:22	
Methylcyclohexane	1.0 U	1.0	1	02/25/16 12:22	
Styrene	1.0 U	1.0	1	02/25/16 12:22	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ1602026-04

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/25/16 12:22	
Toluene	1.0 U	1.0	1	02/25/16 12:22	
Trichloroethene (TCE)	1.0 U	1.0	1	02/25/16 12:22	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/25/16 12:22	
Vinyl Chloride	1.0 U	1.0	1	02/25/16 12:22	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/25/16 12:22	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/25/16 12:22	
m,p-Xylenes	2.0 U	2.0	1	02/25/16 12:22	
n-Propylbenzene	1.0 U	1.0	1	02/25/16 12:22	
o-Xylene	1.0 U	1.0	1	02/25/16 12:22	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/25/16 12:22	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/25/16 12:22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	109	85 - 122	02/25/16 12:22	
Dibromofluoromethane	110	89 - 119	02/25/16 12:22	
Toluene-d8	114	87 - 121	02/25/16 12:22	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Analyzed: 02/24/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1601983-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	19.5	20.0	98	74-120
1,1,2,2-Tetrachloroethane	8260C	16.8	20.0	84	78-122
1,1,2-Trichloroethane	8260C	18.8	20.0	94	82-118
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	19.6	20.0	98	75-124
1,1-Dichloroethane (1,1-DCA)	8260C	19.8	20.0	99	78-117
1,1-Dichloroethene (1,1-DCE)	8260C	19.0	20.0	95	74-135
1,2,3-Trichlorobenzene	8260C	22.7	20.0	114	56-164
1,2,4-Trichlorobenzene	8260C	21.9	20.0	109	68-147
1,2,4-Trimethylbenzene	8260C	19.4	20.0	97	81-123
1,2-Dibromo-3-chloropropane (DBCP)	8260C	15.5	20.0	77	55-149
1,2-Dibromoethane	8260C	17.1	20.0	86	81-125
1,2-Dichlorobenzene	8260C	19.9	20.0	100	80-119
1,2-Dichloroethane	8260C	20.5	20.0	103	71-127
1,2-Dichloropropane	8260C	20.4	20.0	102	80-119
1,3,5-Trimethylbenzene	8260C	20.2	20.0	101	79-123
1,3-Dichlorobenzene	8260C	19.6	20.0	98	79-121
1,4-Dichlorobenzene	8260C	20.8	20.0	104	79-119
1,4-Dioxane	8260C	378	400	94	69-151
2-Butanone (MEK)	8260C	18.3	20.0	92	61-137
2-Hexanone	8260C	17.6	20.0	88	63-124
4-Methyl-2-pentanone	8260C	18.1	20.0	90	66-124
Acetone	8260C	17.6	20.0	88	40-161
Benzene	8260C	19.5	20.0	97	76-118
Bromochloromethane	8260C	17.2	20.0	86	81-126
Bromodichloromethane	8260C	17.7	20.0	88	78-126
Bromoform	8260C	16.1	20.0	80	71-136
Bromomethane	8260C	14.7	20.0	74	42-166
Carbon Disulfide	8260C	18.6	20.0	93	65-127
Carbon Tetrachloride	8260C	18.5	20.0	92	68-125
Chlorobenzene	8260C	19.1	20.0	95	80-121
Chloroethane	8260C	19.1	20.0	96	70-127
Chloroform	8260C	17.7	20.0	89	76-120
Chloromethane	8260C	17.8	20.0	89	69-145

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Analyzed: 02/24/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1601983-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyclohexane	8260C	19.1	20.0	96	63-121
Dibromochloromethane	8260C	17.7	20.0	89	77-128
Dichlorodifluoromethane (CFC 12)	8260C	17.6	20.0	88	65-152
Dichloromethane	8260C	16.7	20.0	84	73-122
Ethylbenzene	8260C	19.1	20.0	95	76-120
Isopropylbenzene (Cumene)	8260C	19.3	20.0	96	78-126
Methyl Acetate	8260C	15.8	20.0	79	62-131
Methyl tert-Butyl Ether	8260C	16.9	20.0	84	78-125
Methylcyclohexane	8260C	18.3	20.0	92	51-129
Styrene	8260C	18.9	20.0	94	80-124
Tetrachloroethene (PCE)	8260C	20.2	20.0	101	78-124
Toluene	8260C	19.0	20.0	95	77-120
Trichloroethene (TCE)	8260C	18.5	20.0	92	78-123
Trichlorofluoromethane (CFC 11)	8260C	20.7	20.0	103	68-126
Vinyl Chloride	8260C	20.0	20.0	100	69-133
cis-1,2-Dichloroethene	8260C	17.5	20.0	88	80-121
cis-1,3-Dichloropropene	8260C	18.3	20.0	92	74-126
m,p-Xylenes	8260C	37.6	40.0	94	78-123
n-Propylbenzene	8260C	19.3	20.0	96	80-127
o-Xylene	8260C	18.8	20.0	94	80-120
trans-1,2-Dichloroethene	8260C	18.5	20.0	93	80-120
trans-1,3-Dichloropropene	8260C	18.2	20.0	91	67-135

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Analyzed: 02/25/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1602026-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	21.7	20.0	108	74-120
1,1,2,2-Tetrachloroethane	8260C	20.5	20.0	102	78-122
1,1,2-Trichloroethane	8260C	21.2	20.0	106	82-118
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	22.7	20.0	113	75-124
1,1-Dichloroethane (1,1-DCA)	8260C	22.2	20.0	111	78-117
1,1-Dichloroethene (1,1-DCE)	8260C	23.0	20.0	115	74-135
1,2,3-Trichlorobenzene	8260C	24.2	20.0	121	56-164
1,2,4-Trichlorobenzene	8260C	23.9	20.0	120	68-147
1,2,4-Trimethylbenzene	8260C	21.7	20.0	108	81-123
1,2-Dibromo-3-chloropropane (DBCP)	8260C	18.2	20.0	91	55-149
1,2-Dibromoethane	8260C	20.7	20.0	104	81-125
1,2-Dichlorobenzene	8260C	22.1	20.0	110	80-119
1,2-Dichloroethane	8260C	23.4	20.0	117	71-127
1,2-Dichloropropane	8260C	22.4	20.0	112	80-119
1,3,5-Trimethylbenzene	8260C	21.9	20.0	110	79-123
1,3-Dichlorobenzene	8260C	21.5	20.0	108	79-121
1,4-Dichlorobenzene	8260C	22.8	20.0	114	79-119
1,4-Dioxane	8260C	483	400	121	69-151
2-Butanone (MEK)	8260C	21.1	20.0	106	61-137
2-Hexanone	8260C	19.8	20.0	99	63-124
4-Methyl-2-pentanone	8260C	20.7	20.0	103	66-124
Acetone	8260C	20.2	20.0	101	40-161
Benzene	8260C	22.2	20.0	111	76-118
Bromochloromethane	8260C	19.0	20.0	95	81-126
Bromodichloromethane	8260C	19.7	20.0	98	78-126
Bromoform	8260C	18.9	20.0	94	71-136
Bromomethane	8260C	16.9	20.0	84	42-166
Carbon Disulfide	8260C	21.8	20.0	109	65-127
Carbon Tetrachloride	8260C	21.2	20.0	106	68-125
Chlorobenzene	8260C	21.1	20.0	105	80-121
Chloroethane	8260C	22.5	20.0	113	70-127
Chloroform	8260C	20.3	20.0	101	76-120
Chloromethane	8260C	20.3	20.0	101	69-145

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Analyzed: 02/25/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1602026-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyclohexane	8260C	20.8	20.0	104	63-121
Dibromochloromethane	8260C	19.4	20.0	97	77-128
Dichlorodifluoromethane (CFC 12)	8260C	20.7	20.0	103	65-152
Dichloromethane	8260C	19.1	20.0	95	73-122
Ethylbenzene	8260C	21.5	20.0	108	76-120
Isopropylbenzene (Cumene)	8260C	21.5	20.0	107	78-126
Methyl Acetate	8260C	19.8	20.0	99	62-131
Methyl tert-Butyl Ether	8260C	20.4	20.0	102	78-125
Methylcyclohexane	8260C	20.6	20.0	103	51-129
Styrene	8260C	21.0	20.0	105	80-124
Tetrachloroethene (PCE)	8260C	23.1	20.0	115	78-124
Toluene	8260C	21.6	20.0	108	77-120
Trichloroethene (TCE)	8260C	20.6	20.0	103	78-123
Trichlorofluoromethane (CFC 11)	8260C	23.8	20.0	119	68-126
Vinyl Chloride	8260C	23.2	20.0	116	69-133
cis-1,2-Dichloroethene	8260C	20.7	20.0	103	80-121
cis-1,3-Dichloropropene	8260C	20.8	20.0	104	74-126
m,p-Xylenes	8260C	43.0	40.0	108	78-123
n-Propylbenzene	8260C	21.8	20.0	109	80-127
o-Xylene	8260C	21.2	20.0	106	80-120
trans-1,2-Dichloroethene	8260C	21.7	20.0	108	80-120
trans-1,3-Dichloropropene	8260C	20.9	20.0	105	67-135

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: CB&I
Project: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/18/16
Date Received: 02/19/16
Date Analyzed: 02/24/16
Date Extracted: NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name: IW-7
Lab Code: R1601413-010
Analysis Method: 8260C
Prep Method: EPA 5030C

Units: ug/L
Basis: NA

Analyte Name	Sample Result	Matrix Spike RQ1601983-05			Duplicate Matrix Spike RQ1601983-06			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	1.0 U	48.2	50.0	96	49.8	50.0	100	74-127	3	30
1,1,2,2-Tetrachloroethane	1.0 U	48.1	50.0	96	50.2	50.0	100	72-122	4	30
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	49.6	50.0	99	52.5	50.0	105	59-131	6	30
1,1,2-Trichloroethane	1.0 U	48.9	50.0	98	50.4	50.0	101	79-119	3	30
1,1-Dichloroethane (1,1-DCA)	1.0 U	50.6	50.0	101	53.0	50.0	106	74-132	5	30
1,1-Dichloroethene (1,1-DCE)	1.0 U	51.0	50.0	102	52.0	50.0	104	74-139	2	30
1,2,3-Trichlorobenzene	1.0 U	47.9	50.0	96	56.2	50.0	112	54-143	16	30
1,2,4-Trichlorobenzene	1.0 U	48.6	50.0	97	55.1	50.0	110	56-140	13	30
1,2,4-Trimethylbenzene	7.3	59.4	50.0	104	55.6	50.0	97	47-153	7	30
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	45.0	50.0	90	44.4	50.0	89	65-137	1	30
1,2-Dibromoethane	1.0 U	47.7	50.0	95	49.9	50.0	100	80-117	4	30
1,2-Dichlorobenzene	1.0 U	49.5	50.0	99	52.4	50.0	105	77-120	6	30
1,2-Dichloroethane	1.0 U	54.6	50.0	109	57.1	50.0	114	68-130	5	30
1,2-Dichloropropane	1.0 U	52.4	50.0	105	56.4	50.0	113	79-124	7	30
1,3,5-Trimethylbenzene	26	84.5	50.0	118	75.2	50.0	99	49-149	12	30
1,3-Dichlorobenzene	1.0 U	48.4	50.0	97	50.8	50.0	102	74-125	5	30
1,4-Dichlorobenzene	1.0 U	51.9	50.0	104	53.7	50.0	107	72-124	3	30
1,4-Dioxane	40 U	1120	1000	112	1090	1000	109	48-143	3	30
2-Butanone (MEK)	5.0 U	48.4	50.0	97	53.1	50.0	106	46-141	9	30
2-Hexanone	5.0 U	48.8	50.0	98	51.9	50.0	104	56-132	6	30
4-Methyl-2-pentanone	5.0 U	55.7	50.0	111	58.3	50.0	117	60-141	5	30
Acetone	5.0 U	44.5	50.0	89	44.6	50.0	89	29-151	<1	30
Benzene	1.0 U	51.6	50.0	103	53.3	50.0	107	76-129	3	30
Bromochloromethane	1.0 U	46.2	50.0	92	47.0	50.0	94	82-125	2	30
Bromodichloromethane	1.0 U	47.4	50.0	95	48.9	50.0	98	76-127	3	30
Bromoform	1.0 U	38.1	50.0	76	43.3	50.0	87	58-133	13	30
Bromomethane	1.0 U	35.3	50.0	71	42.0	50.0	84	10-162	17	30
Carbon Disulfide	1.0 U	30.7	50.0	61	38.8	50.0	78	34-162	23	30
Carbon Tetrachloride	1.0 U	45.5	50.0	91	48.8	50.0	98	65-135	7	30
Chlorobenzene	1.0 U	48.8	50.0	98	50.1	50.0	100	76-125	2	30
Chloroethane	1.0 U	49.3	50.0	99	50.0	50.0	100	70-140	2	30
Chloroform	1.0 U	44.9	50.0	90	46.5	50.0	93	75-130	4	30
Chloromethane	1.0 U	46.0	50.0	92	45.9	50.0	92	55-160	<1	30
cis-1,2-Dichloroethene	1.0 U	47.5	50.0	95	47.7	50.0	95	72-133	<1	30
cis-1,3-Dichloropropene	1.0 U	49.1	50.0	98	50.4	50.0	101	52-134	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

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: Von Roll - VRI/15287
Sample Matrix: Water

Service Request: R1601413
Date Collected: 02/18/16
Date Received: 02/19/16
Date Analyzed: 02/24/16
Date Extracted: NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name: IW-7
Lab Code: R1601413-010
Analysis Method: 8260C
Prep Method: EPA 5030C

Units: ug/L
Basis: NA

Analyte Name	Sample Result	Matrix Spike RQ1601983-05			Duplicate Matrix Spike RQ1601983-06			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Cyclohexane	1.0 U	51.7	50.0	103	51.6	50.0	103	52-145	<1	30
Dibromochloromethane	1.0 U	44.0	50.0	88	46.4	50.0	93	72-128	5	30
Dichlorodifluoromethane (CFC 12)	1.0 U	47.5	50.0	95	47.9	50.0	96	49-154	<1	30
Dichloromethane	1.0 U	43.7	50.0	87	45.5	50.0	91	75-121	4	30
Ethylbenzene	1.0 U	47.6	50.0	95	50.2	50.0	100	72-134	5	30
Isopropylbenzene (Cumene)	1.0 U	49.4	50.0	99	51.4	50.0	103	76-136	4	30
m,p-Xylenes	2.0 U	96.9	100	97	99.5	100	99	68-138	3	30
Methyl Acetate	2.0 U	44.0	50.0	88	46.5	50.0	93	36-146	6	30
Methyl tert-Butyl Ether	1.0 U	47.8	50.0	96	48.6	50.0	97	74-130	2	30
Methylcyclohexane	1.0 U	48.3	50.0	96	50.4	50.0	101	45-146	4	30
n-Propylbenzene	1.0 U	48.8	50.0	98	50.6	50.0	101	71-140	3	30
o-Xylene	13	61.8	50.0	98	61.8	50.0	98	68-134	<1	30
Styrene	1.0 U	44.7	50.0	89	45.7	50.0	91	34-156	2	30
Tetrachloroethene (PCE)	1.0 U	53.7	50.0	107	57.5	50.0	115	67-137	7	30
Toluene	1.0 U	50.2	50.0	100	52.0	50.0	104	79-125	4	30
trans-1,2-Dichloroethene	1.0 U	47.0	50.0	94	49.3	50.0	99	77-125	5	30
trans-1,3-Dichloropropene	1.0 U	50.6	50.0	101	51.6	50.0	103	50-142	2	30
Trichloroethene (TCE)	1.0 U	49.2	50.0	98	50.4	50.0	101	62-142	2	30
Trichlorofluoromethane (CFC 11)	1.0 U	55.2	50.0	110	56.0	50.0	112	72-142	1	30
Vinyl Chloride	1.0 U	53.1	50.0	106	54.7	50.0	109	60-157	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

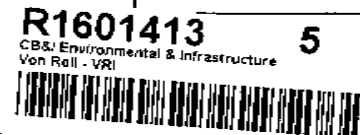
Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

33657

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: Von Roll		Project Number: 152587		ANALYSIS REQUESTED (Include Method Number and Container Preservative)														
Project Manager: Matt Sausville		Report CC:		PRESERVATIVE: 1														
Company Address: CB&I 13 British American Blvd Latham, NY 12110				NUMBER OF CONTAINERS	GC/MS VOCs • 8250 • 824 • CLP GC/MS SVOCs • 8270 • 825 GC VOCs • 8021 • 801802 PESTICIDES • 8081 • 808 PCBs • 8082 • 808 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) PRESERVATIVE KEY 0. NONE 1. HCL 2. HNO₃ 3. H₂SO₄ 4. NaOH 5. Zn Acetate 6. MeOH 7. NaHSO₄ 8. Other _____													
Phone: 518-785-2355		Email: matt.sausville@cbi.com																
Sampler's Signature: <i>[Signature]</i>		Sampler's Printed Name: TM & DH																
Remarks/ALTERNATE DESCRIPTION																		
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE		TIME	MATRIX													
GT-9R		2-16-16	11:15	GW	3	✓	see comment box ← Took 6 VOAS because of excess silt and sand											
VRI-2		2-16-16	13:31	GW	3	✓												
IW-2		2-16-16	14:41	GW	3	✓												
GT-7		2-17-16	09:21	GW	3	✓												
VRI-9		2-17-16	10:41	GW	6	✓												
IW-3		2-17-16	11:41	GW	3	✓												
IW-4		2-17-16	14:41	GW	3	✓												
DUP		—	—	GW	3	✓												
Trip Blank		—	—	—	3	✓												
SPECIAL INSTRUCTIONS/COMMENTS Analyze samples for TCL VOCs and non-standard VOCs (1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, isopropylbenzene, and n-propylbenzene). Samples IW-2, IW-3, and IW-4 are historically elevated for VOC detections. See QAPP [X]						TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day 2 day 3 day 4 day 5 day Standard REQUESTED REPORT DATE Standard				REPORT REQUIREMENTS I. Results Only ☒ II. Results + QC Summaries (C.S. DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data NY 3-tab EQUIS EDD Edata Yes No				INVOICE INFORMATION PO # BILL TO:				
STATE WHERE SAMPLES WERE COLLECTED NY																		
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY								
Signature: <i>T. Mui</i>		Signature: <i>[Signature]</i>		Signature: <i>[Signature]</i>		Signature: <i>[Signature]</i>		Signature: <i>[Signature]</i>		Signature: <i>[Signature]</i>								
Printed Name: CB&I		Printed Name: DINA AYERS		Printed Name: DINA AYERS		Printed Name: Gregory Smerian		Printed Name: ALS		Printed Name: ALS								
Firm: 02-17-2016		Firm: ALS		Firm: ALS		Firm: ALS		Firm: ALS		Firm: ALS								
Date/Time: 1555		Date/Time: 2/17/16 1555		Date/Time: 2/17/16 1700		Date/Time: 2/18/16 09:40		Date/Time: 2/18/16 09:40		Date/Time: 2/18/16 09:40								





Cooler Receipt and Preservat

R1601413

CBI Environmental & Infrastructure
Von Roll - VRI

5

Project/Client CB+I Folder Number _____Cooler received on 2-18-16 by: HE

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	☒ Y ☐ N
2	Custody papers properly completed (ink, signed)?	☒ Y ☐ N
3	Did all bottles arrive in good condition (unbroken)?	☒ Y ☐ N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	☒ Y ☐ N

5a	Perchlorate samples have required headspace?	☐ Y ☐ N ☒ NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	☒ Y ☐ N ☐ NA
6	Where did the bottles originate?	ALS/ROC CLIENT <u>ALS</u>
7	Soil VOA received as:	Bulk Encore 5035set <u>NA</u>

8. Temperature Readings Date 2-18-16 Time 09:56 ID: IR#3 IR#5 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>3.3</u>						
Correction Factor (°C)	<u>-0.9</u>						
Corrected Temp (°C)	<u>2.4</u>						
Within 0-6°C?	☒ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N
If <0°C, were samples frozen?	☐ 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: R-002 by HE on 2-18-16 at 10:00
5035 samples placed in storage location: _____ by _____ on _____ at _____PC Secondary Review: MS 2/18/16Cooler Breakdown: Date: 2/18/16 Time: 13:21 by: ADS

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
≥12	NaOH								
≤2	HNO ₃								
≤2	H ₂ SO ₄								
<4	NaHSO ₄								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na ₂ S ₂ O ₃ (CN), ascorbic (phenol).					
	Na ₂ S ₂ O ₃	-	-						
	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: Client

Other Comments:

* VRI-9 : 1 of 6 vials has sig. headspace

GT-7 : 1 of 3 vials has sig. headspace.

PC Secondary Review: MS 2/18/16

*significant air bubbles: VOA > 5-6 mm ; WC > 1 in. diameter



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

33656

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 Von Roll		Project Number 152587		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																									
Project Manager Matt Sausville		Report CC		PRESERVATIVE																									
Company/Address CB&I 13 British American Blvd. Latham, NY 12110		Phone # 518-785-2355		Email matt.sausville@cbi.com		NUMBER OF CONTAINERS GC/MS VOCs 8210 • 824 CLP GC/MS SVOCs 8210 • 825 GC VOCs 8021 • 801802 PESTICIDES 8061 • 808 PCBs 8082 • 808 METALS, TOTAL (List in comments below) METALS, DISSOLVED (List in comments below) PRESERVATIVE KEY 0. NONE 1. HCL 2. HNO₃ 3. H₂SO₄ 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO₄ 8. Other _____																							
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name T. Mui & D. Howe																											
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE		TIME	MATRIX	REMARKS/ ALTERNATE DESCRIPTION																							
IW-6		2-19-16	0910	GW	3 ✓	see comment box																							
VRI-4		2-19-16	1110	GW	6 ✓																								
GT-15		2-19-16	1430	GW	6 ✓																								
Trip Blank		—	—	W	3 ✓																								
SPECIAL INSTRUCTIONS/COMMENTS Analyze samples for TCL VOCs and non-standard VOCs (1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, isopropylbenzene, and n-propylbenzene). Sample IW-6 historically high for VOCs. Took 6 VOAs due to high turbidity with sand/silt. See QAPP ☐ STATE WHERE SAMPLES WERE COLLECTED NY																													
														RELINQUISHED BY				RECEIVED BY				RELINQUISHED BY				RECEIVED BY			
														Signature T. Mui				Signature D. Avers				Signature [Signature]				Signature [Signature]			
														Printed Name CB&I				Printed Name DINA AVERS				Printed Name [Name]				Printed Name [Name]			
Firm 02-19-2016				Firm ALS				Firm ALS				Firm ALS																	
Date/Time 1516				Date/Time 2/19/16 1516				Date/Time 2/19/16 1700				Date/Time 2/20/16 0950																	
TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day 2 day 3 day 4 day 5 day Standard REQUESTED REPORT DATE Standard												REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries ILCS, DJP, MS/MSD as required; III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data NY 3-tab EQUIS EDD Edata Yes No		INVOICE INFORMATION PO # BILL TO:															



Cooler Receipt and Preservation

R1601413

5

CBSI Environmental & Infrastructure
Von Roll - VRI

Project/Client

CBEL

Folder Number

Cooler received on

2/20/16

by

MDS

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	☒ Y ☐ N
2	Custody papers properly completed (ink, signed)?	☒ Y ☐ N
3	Did all bottles arrive in good condition (unbroken)?	☒ Y ☐ N
4	Circle: Wet Ice Dry Ice Gel packs present?	☒ Y ☐ N

5a	Perchlorate samples have required headspace?	☐ Y ☐ N ☒ NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	☐ Y ☒ N ☐ NA
6	Where did the bottles originate?	ALS/ROC CLIENT
7	Soil VOA received as:	Bulk Encore 5035set NA

8. Temperature Readings

Date: 2/20/16 Time: 1000

ID: IR#3 IR#5

From: Temp Blank Sample Bottle

Observed Temp (°C)	7.8						
Correction Factor (°C)	-0.6						
Corrected Temp (°C)	4.2						
Within 0-6°C?	☒ N	☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N	☐ Y ☐ N
If <0°C, were samples frozen?	☐ 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:	IL-002	by	MDS	on	2/20/16	at	1100
5035 samples placed in storage location:		by		on		at	

PC Secondary Review: CMS 2/20/16

Cooler Breakdown: Date: 2/20/16 Time: 3109 by: MDS

- Were all bottle labels complete (i.e. analysis, preservation, etc.)?
- Did all bottle labels and tags agree with custody papers?
- Were correct containers used for the tests indicated?
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO ₃								
<2	H ₂ SO ₄								
<4	NaHSO ₄								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na ₂ S ₂ O ₃ (CN), ascorbic (phenol).					
	Na ₂ S ₂ O ₃	-	-						
	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: 5-182-001

Other Comments:

PC Secondary Review: CMS 2/22/16

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



Cooler Receipt and Preservation Check Form

R1601413

5

CBS: Environmental & Infrastructure
Von Roll - VRIProject/Client CB&I Folder Number R16-1413Cooler received on 2/19/16 by MDSCOURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	☒ N
2	Custody papers properly completed (ink, signed)?	☒ N
3	Did all bottles arrive in good condition (unbroken)?	☒ N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	☒ N

5a	Perchlorate samples have required headspace?	Y N <u>NA</u>
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y <u>N</u> NA
6	Where did the bottles originate?	ALS/ROC <u>CLIENT</u>
7	Soil VOA received as:	Bulk Encore 5035set <u>NA</u>

8. Temperature Readings Date: 2/19/16 Time: 1043 ID: IR#3 IR#5 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>3.7</u>						
Correction Factor (°C)	<u>-0.6</u>						
Corrected Temp (°C)	<u>3.3</u>						
Within 0-6°C?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	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: 12-002 by MDS on 2/19/16 at 1044
5035 samples placed in storage location: by on at PC Secondary Review: LMV 2/22/16Cooler Breakdown: Date: 2/19/16 Time: 1528 by: LMV

- | | | |
|---|-----------------------|----------------------------------|
| 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 <u>N/A</u> |

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO ₃								
≤2	H ₂ SO ₄								
<4	NaHSO ₄								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na ₂ S ₂ O ₃ (CN), ascorbic (phenol).					
	Na ₂ S ₂ O ₃	-	-						
	ZnAcetate	-	-						
	HCl	**	**	Client label					

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: client label

Other Comments:

PC Secondary Review: LMV 2/22/16 *significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



March 04, 2016

Service Request No:R1601537

Mr. Matt Sausville
CB&I Environmental & Infrastructure
13 British American Blvd.
Latham, NY 12110

Laboratory Results for: Von Roll - VRI

Dear Mr.Sausville,

Enclosed are the results of the sample(s) submitted to our laboratory February 23, 2016
For your reference, these analyses have been assigned our service request number **R1601537**.

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.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

PHONE +1 585 288 5380 | FAX +1 585 288 8475

ALS Group USA, Corp.

dba ALS Environmental

ALS Environmental

Client: CB&I
Service Request No.: R1601537
Project: Von Roll
Date Received: 02/23/16
Sample Matrix: Water
Project/Case No.:

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 data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Control Sample (LCS).

Sample Receipt

Water samples were received for analysis at ALS Environmental on 02/23/16. The samples were received in good condition and consistent with the accompanying chain of custody form. All sampling activities performed by ALS personnel have been in accordance with "ALS Field Procedures and Measurements Manual" or by client specifications. The samples were stored in a refrigerator between 1°C and 6°C upon receipt at the laboratory.

Volatile Organics

Water samples were analyzed for a site list of Volatile Organics by Method 8260C from SW-846.

All Tuning criteria for BFB were within QC limits.

All the initial calibration criteria were met for all analytes. All Continuing Calibration Verification (CCV) standards were within 20% Difference (D) except Bromomethane on the 02/29/16 CCV and 1,2-Dibromo-3-chloropropane on the 03/02/16 CCV. All detected concentrations for these compounds associated with this CCV should be considered as estimated.

All Internal Standard Areas (IS) were within QC limits.

All surrogate standard recoveries were acceptable.

All Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS/LCSD) recoveries were within limits.

Site specific QC was not requested on these samples.

The Method Blanks associated with these samples were free of contamination.

No other analytical or QC problems were encountered.

Client: CB&I
Project: Von Roll - VRI/152587

Service Request:R1601537

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R1601537-001	GT-14	2/22/2016	0921
R1601537-002	VRI-3	2/22/2016	1041
R1601537-003	Drum	2/22/2016	1340
R1601537-004	Trip Blank	2/22/2016	

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.	+	Correlation coefficient for MSA is <0.995.
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).	N	Inorganics- Matrix spike recovery was outside laboratory limits.
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.	N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.	S	Concentration has been determined using Method of Standard Additions (MSA).
E	Organics- Concentration has exceeded the calibration range for that specific analysis.	W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
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.	P	Concentration >40% (25% for CLP) difference between the two GC columns.
*	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.	C	Confirmed by GC/MS
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.	Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (100% Difference between two GC columns).
#	Spike was diluted out.	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 Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID #
Delaware Accredited	Nebraska Accredited	294100 A/B
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

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 case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to <http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads>

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Collected: 02/22/16 09:21
Date Received: 02/23/16 13:30

Sample Name: GT-14
Lab Code: R1601537-001

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/29/16 16:51	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/29/16 16:51	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/29/16 16:51	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/29/16 16:51	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/29/16 16:51	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/29/16 16:51	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/29/16 16:51	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/29/16 16:51	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/29/16 16:51	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/29/16 16:51	
1,2-Dibromoethane	1.0 U	1.0	1	02/29/16 16:51	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/29/16 16:51	
1,2-Dichloroethane	1.0 U	1.0	1	02/29/16 16:51	
1,2-Dichloropropane	1.0 U	1.0	1	02/29/16 16:51	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/29/16 16:51	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/29/16 16:51	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/29/16 16:51	
1,4-Dioxane	40 U	40	1	02/29/16 16:51	
2-Butanone (MEK)	5.0 U	5.0	1	02/29/16 16:51	
2-Hexanone	5.0 U	5.0	1	02/29/16 16:51	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/29/16 16:51	
Acetone	5.0 U	5.0	1	02/29/16 16:51	
Benzene	1.0 U	1.0	1	02/29/16 16:51	
Bromochloromethane	1.0 U	1.0	1	02/29/16 16:51	
Bromodichloromethane	1.0 U	1.0	1	02/29/16 16:51	
Bromoform	1.0 U	1.0	1	02/29/16 16:51	
Bromomethane	1.0 U	1.0	1	02/29/16 16:51	
Carbon Disulfide	1.0 U	1.0	1	02/29/16 16:51	
Carbon Tetrachloride	1.0 U	1.0	1	02/29/16 16:51	
Chlorobenzene	1.0 U	1.0	1	02/29/16 16:51	
Chloroethane	1.0 U	1.0	1	02/29/16 16:51	
Chloroform	1.0 U	1.0	1	02/29/16 16:51	
Chloromethane	1.0 U	1.0	1	02/29/16 16:51	
Cyclohexane	1.0 U	1.0	1	02/29/16 16:51	
Dibromochloromethane	1.0 U	1.0	1	02/29/16 16:51	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/29/16 16:51	
Dichloromethane	1.0 U	1.0	1	02/29/16 16:51	
Ethylbenzene	1.0 U	1.0	1	02/29/16 16:51	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/29/16 16:51	
Methyl Acetate	2.0 U	2.0	1	02/29/16 16:51	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/29/16 16:51	
Methylcyclohexane	1.0 U	1.0	1	02/29/16 16:51	
Styrene	1.0 U	1.0	1	02/29/16 16:51	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Collected: 02/22/16 09:21
Date Received: 02/23/16 13:30

Sample Name: GT-14
Lab Code: R1601537-001

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/29/16 16:51	
Toluene	1.0 U	1.0	1	02/29/16 16:51	
Trichloroethene (TCE)	1.0 U	1.0	1	02/29/16 16:51	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/29/16 16:51	
Vinyl Chloride	1.0 U	1.0	1	02/29/16 16:51	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/29/16 16:51	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/29/16 16:51	
m,p-Xylenes	2.0 U	2.0	1	02/29/16 16:51	
n-Propylbenzene	1.0 U	1.0	1	02/29/16 16:51	
o-Xylene	1.0 U	1.0	1	02/29/16 16:51	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/29/16 16:51	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/29/16 16:51	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	108	85 - 122	02/29/16 16:51	
Dibromofluoromethane	107	89 - 119	02/29/16 16:51	
Toluene-d8	107	87 - 121	02/29/16 16:51	

ALS Group USA, Corp.
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Analytical Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Collected: 02/22/16 10:41
Date Received: 02/23/16 13:30

Sample Name: VRI-3
Lab Code: R1601537-002

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/29/16 17:22	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/29/16 17:22	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/29/16 17:22	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/29/16 17:22	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/29/16 17:22	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/29/16 17:22	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/29/16 17:22	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/29/16 17:22	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/29/16 17:22	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/29/16 17:22	
1,2-Dibromoethane	1.0 U	1.0	1	02/29/16 17:22	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/29/16 17:22	
1,2-Dichloroethane	1.0 U	1.0	1	02/29/16 17:22	
1,2-Dichloropropane	1.0 U	1.0	1	02/29/16 17:22	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/29/16 17:22	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/29/16 17:22	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/29/16 17:22	
1,4-Dioxane	40 U	40	1	02/29/16 17:22	
2-Butanone (MEK)	5.0 U	5.0	1	02/29/16 17:22	
2-Hexanone	5.0 U	5.0	1	02/29/16 17:22	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/29/16 17:22	
Acetone	5.0 U	5.0	1	02/29/16 17:22	
Benzene	1.0 U	1.0	1	02/29/16 17:22	
Bromochloromethane	1.0 U	1.0	1	02/29/16 17:22	
Bromodichloromethane	1.0 U	1.0	1	02/29/16 17:22	
Bromoform	1.0 U	1.0	1	02/29/16 17:22	
Bromomethane	1.0 U	1.0	1	02/29/16 17:22	
Carbon Disulfide	1.0 U	1.0	1	02/29/16 17:22	
Carbon Tetrachloride	1.0 U	1.0	1	02/29/16 17:22	
Chlorobenzene	1.0 U	1.0	1	02/29/16 17:22	
Chloroethane	1.0 U	1.0	1	02/29/16 17:22	
Chloroform	1.0 U	1.0	1	02/29/16 17:22	
Chloromethane	1.0 U	1.0	1	02/29/16 17:22	
Cyclohexane	1.0 U	1.0	1	02/29/16 17:22	
Dibromochloromethane	1.0 U	1.0	1	02/29/16 17:22	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/29/16 17:22	
Dichloromethane	1.0 U	1.0	1	02/29/16 17:22	
Ethylbenzene	1.0 U	1.0	1	02/29/16 17:22	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/29/16 17:22	
Methyl Acetate	2.0 U	2.0	1	02/29/16 17:22	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/29/16 17:22	
Methylcyclohexane	1.0 U	1.0	1	02/29/16 17:22	
Styrene	1.0 U	1.0	1	02/29/16 17:22	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Collected: 02/22/16 10:41
Date Received: 02/23/16 13:30

Sample Name: VRI-3
Lab Code: R1601537-002

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/29/16 17:22	
Toluene	1.0 U	1.0	1	02/29/16 17:22	
Trichloroethene (TCE)	1.0 U	1.0	1	02/29/16 17:22	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/29/16 17:22	
Vinyl Chloride	1.0 U	1.0	1	02/29/16 17:22	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/29/16 17:22	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/29/16 17:22	
m,p-Xylenes	2.0 U	2.0	1	02/29/16 17:22	
n-Propylbenzene	1.0 U	1.0	1	02/29/16 17:22	
o-Xylene	1.0 U	1.0	1	02/29/16 17:22	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/29/16 17:22	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/29/16 17:22	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	111	85 - 122	02/29/16 17:22	
Dibromofluoromethane	111	89 - 119	02/29/16 17:22	
Toluene-d8	105	87 - 121	02/29/16 17:22	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Collected: 02/22/16 13:40
Date Received: 02/23/16 13:30

Sample Name: Drum
Lab Code: R1601537-003

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	03/02/16 13:28	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	03/02/16 13:28	
1,1,2-Trichloroethane	1.0 U	1.0	1	03/02/16 13:28	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	03/02/16 13:28	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	03/02/16 13:28	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	03/02/16 13:28	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	03/02/16 13:28	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	03/02/16 13:28	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	03/02/16 13:28	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	03/02/16 13:28	
1,2-Dibromoethane	1.0 U	1.0	1	03/02/16 13:28	
1,2-Dichlorobenzene	1.0 U	1.0	1	03/02/16 13:28	
1,2-Dichloroethane	1.0 U	1.0	1	03/02/16 13:28	
1,2-Dichloropropane	1.0 U	1.0	1	03/02/16 13:28	
1,3,5-Trimethylbenzene	59	1.0	1	03/02/16 13:28	
1,3-Dichlorobenzene	1.0 U	1.0	1	03/02/16 13:28	
1,4-Dichlorobenzene	1.0 U	1.0	1	03/02/16 13:28	
1,4-Dioxane	40 U	40	1	03/02/16 13:28	
2-Butanone (MEK)	25	5.0	1	03/02/16 13:28	
2-Hexanone	5.0 U	5.0	1	03/02/16 13:28	
4-Methyl-2-pentanone	5.0 U	5.0	1	03/02/16 13:28	
Acetone	11	5.0	1	03/02/16 13:28	
Benzene	1.0 U	1.0	1	03/02/16 13:28	
Bromochloromethane	1.0 U	1.0	1	03/02/16 13:28	
Bromodichloromethane	1.0 U	1.0	1	03/02/16 13:28	
Bromoform	1.0 U	1.0	1	03/02/16 13:28	
Bromomethane	1.0 U	1.0	1	03/02/16 13:28	
Carbon Disulfide	1.0 U	1.0	1	03/02/16 13:28	
Carbon Tetrachloride	1.0 U	1.0	1	03/02/16 13:28	
Chlorobenzene	1.0 U	1.0	1	03/02/16 13:28	
Chloroethane	1.0 U	1.0	1	03/02/16 13:28	
Chloroform	1.0 U	1.0	1	03/02/16 13:28	
Chloromethane	1.0 U	1.0	1	03/02/16 13:28	
Cyclohexane	1.0 U	1.0	1	03/02/16 13:28	
Dibromochloromethane	1.0 U	1.0	1	03/02/16 13:28	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	03/02/16 13:28	
Dichloromethane	1.0 U	1.0	1	03/02/16 13:28	
Ethylbenzene	1.0 U	1.0	1	03/02/16 13:28	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	03/02/16 13:28	
Methyl Acetate	2.0 U	2.0	1	03/02/16 13:28	
Methyl tert-Butyl Ether	1.0 U	1.0	1	03/02/16 13:28	
Methylcyclohexane	1.0 U	1.0	1	03/02/16 13:28	
Styrene	1.0 U	1.0	1	03/02/16 13:28	

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Analytical Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Collected: 02/22/16 13:40
Date Received: 02/23/16 13:30

Sample Name: Drum
Lab Code: R1601537-003

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	03/02/16 13:28	
Toluene	1.0 U	1.0	1	03/02/16 13:28	
Trichloroethene (TCE)	1.0 U	1.0	1	03/02/16 13:28	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	03/02/16 13:28	
Vinyl Chloride	1.0 U	1.0	1	03/02/16 13:28	
cis-1,2-Dichloroethene	1.0 U	1.0	1	03/02/16 13:28	
cis-1,3-Dichloropropene	1.0 U	1.0	1	03/02/16 13:28	
m,p-Xylenes	2.0 U	2.0	1	03/02/16 13:28	
n-Propylbenzene	1.0 U	1.0	1	03/02/16 13:28	
o-Xylene	81	1.0	1	03/02/16 13:28	
trans-1,2-Dichloroethene	1.0 U	1.0	1	03/02/16 13:28	
trans-1,3-Dichloropropene	1.0 U	1.0	1	03/02/16 13:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	03/02/16 13:28	
Dibromofluoromethane	109	89 - 119	03/02/16 13:28	
Toluene-d8	118	87 - 121	03/02/16 13:28	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Collected: 02/22/16
Date Received: 02/23/16 13:30

Sample Name: Trip Blank
Lab Code: R1601537-004

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/29/16 16:21	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/29/16 16:21	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/29/16 16:21	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/29/16 16:21	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/29/16 16:21	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/29/16 16:21	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/29/16 16:21	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/29/16 16:21	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/29/16 16:21	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/29/16 16:21	
1,2-Dibromoethane	1.0 U	1.0	1	02/29/16 16:21	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/29/16 16:21	
1,2-Dichloroethane	1.0 U	1.0	1	02/29/16 16:21	
1,2-Dichloropropane	1.0 U	1.0	1	02/29/16 16:21	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/29/16 16:21	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/29/16 16:21	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/29/16 16:21	
1,4-Dioxane	40 U	40	1	02/29/16 16:21	
2-Butanone (MEK)	5.0 U	5.0	1	02/29/16 16:21	
2-Hexanone	5.0 U	5.0	1	02/29/16 16:21	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/29/16 16:21	
Acetone	5.4	5.0	1	02/29/16 16:21	
Benzene	1.0 U	1.0	1	02/29/16 16:21	
Bromochloromethane	1.0 U	1.0	1	02/29/16 16:21	
Bromodichloromethane	1.0 U	1.0	1	02/29/16 16:21	
Bromoform	1.0 U	1.0	1	02/29/16 16:21	
Bromomethane	1.0 U	1.0	1	02/29/16 16:21	
Carbon Disulfide	1.0 U	1.0	1	02/29/16 16:21	
Carbon Tetrachloride	1.0 U	1.0	1	02/29/16 16:21	
Chlorobenzene	1.0 U	1.0	1	02/29/16 16:21	
Chloroethane	1.0 U	1.0	1	02/29/16 16:21	
Chloroform	1.0 U	1.0	1	02/29/16 16:21	
Chloromethane	1.0 U	1.0	1	02/29/16 16:21	
Cyclohexane	1.0 U	1.0	1	02/29/16 16:21	
Dibromochloromethane	1.0 U	1.0	1	02/29/16 16:21	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/29/16 16:21	
Dichloromethane	1.0 U	1.0	1	02/29/16 16:21	
Ethylbenzene	1.0 U	1.0	1	02/29/16 16:21	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/29/16 16:21	
Methyl Acetate	2.0 U	2.0	1	02/29/16 16:21	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/29/16 16:21	
Methylcyclohexane	1.0 U	1.0	1	02/29/16 16:21	
Styrene	1.0 U	1.0	1	02/29/16 16:21	

ALS Group USA, Corp.
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Analytical Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Collected: 02/22/16
Date Received: 02/23/16 13:30

Sample Name: Trip Blank
Lab Code: R1601537-004

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/29/16 16:21	
Toluene	1.0 U	1.0	1	02/29/16 16:21	
Trichloroethene (TCE)	1.0 U	1.0	1	02/29/16 16:21	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/29/16 16:21	
Vinyl Chloride	1.0 U	1.0	1	02/29/16 16:21	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/29/16 16:21	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/29/16 16:21	
m,p-Xylenes	2.0 U	2.0	1	02/29/16 16:21	
n-Propylbenzene	1.0 U	1.0	1	02/29/16 16:21	
o-Xylene	1.0 U	1.0	1	02/29/16 16:21	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/29/16 16:21	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/29/16 16:21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	116	85 - 122	02/29/16 16:21	
Dibromofluoromethane	105	89 - 119	02/29/16 16:21	
Toluene-d8	116	87 - 121	02/29/16 16:21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ1602123-04

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	02/29/16 12:16	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	02/29/16 12:16	
1,1,2-Trichloroethane	1.0 U	1.0	1	02/29/16 12:16	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	02/29/16 12:16	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	02/29/16 12:16	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	02/29/16 12:16	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	02/29/16 12:16	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	02/29/16 12:16	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	02/29/16 12:16	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	02/29/16 12:16	
1,2-Dibromoethane	1.0 U	1.0	1	02/29/16 12:16	
1,2-Dichlorobenzene	1.0 U	1.0	1	02/29/16 12:16	
1,2-Dichloroethane	1.0 U	1.0	1	02/29/16 12:16	
1,2-Dichloropropane	1.0 U	1.0	1	02/29/16 12:16	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	02/29/16 12:16	
1,3-Dichlorobenzene	1.0 U	1.0	1	02/29/16 12:16	
1,4-Dichlorobenzene	1.0 U	1.0	1	02/29/16 12:16	
1,4-Dioxane	40 U	40	1	02/29/16 12:16	
2-Butanone (MEK)	5.0 U	5.0	1	02/29/16 12:16	
2-Hexanone	5.0 U	5.0	1	02/29/16 12:16	
4-Methyl-2-pentanone	5.0 U	5.0	1	02/29/16 12:16	
Acetone	5.0 U	5.0	1	02/29/16 12:16	
Benzene	1.0 U	1.0	1	02/29/16 12:16	
Bromochloromethane	1.0 U	1.0	1	02/29/16 12:16	
Bromodichloromethane	1.0 U	1.0	1	02/29/16 12:16	
Bromoform	1.0 U	1.0	1	02/29/16 12:16	
Bromomethane	1.0 U	1.0	1	02/29/16 12:16	
Carbon Disulfide	1.0 U	1.0	1	02/29/16 12:16	
Carbon Tetrachloride	1.0 U	1.0	1	02/29/16 12:16	
Chlorobenzene	1.0 U	1.0	1	02/29/16 12:16	
Chloroethane	1.0 U	1.0	1	02/29/16 12:16	
Chloroform	1.0 U	1.0	1	02/29/16 12:16	
Chloromethane	1.0 U	1.0	1	02/29/16 12:16	
Cyclohexane	1.0 U	1.0	1	02/29/16 12:16	
Dibromochloromethane	1.0 U	1.0	1	02/29/16 12:16	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	02/29/16 12:16	
Dichloromethane	1.0 U	1.0	1	02/29/16 12:16	
Ethylbenzene	1.0 U	1.0	1	02/29/16 12:16	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	02/29/16 12:16	
Methyl Acetate	2.0 U	2.0	1	02/29/16 12:16	
Methyl tert-Butyl Ether	1.0 U	1.0	1	02/29/16 12:16	
Methylcyclohexane	1.0 U	1.0	1	02/29/16 12:16	
Styrene	1.0 U	1.0	1	02/29/16 12:16	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ1602123-04

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	02/29/16 12:16	
Toluene	1.0 U	1.0	1	02/29/16 12:16	
Trichloroethene (TCE)	1.0 U	1.0	1	02/29/16 12:16	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	02/29/16 12:16	
Vinyl Chloride	1.0 U	1.0	1	02/29/16 12:16	
cis-1,2-Dichloroethene	1.0 U	1.0	1	02/29/16 12:16	
cis-1,3-Dichloropropene	1.0 U	1.0	1	02/29/16 12:16	
m,p-Xylenes	2.0 U	2.0	1	02/29/16 12:16	
n-Propylbenzene	1.0 U	1.0	1	02/29/16 12:16	
o-Xylene	1.0 U	1.0	1	02/29/16 12:16	
trans-1,2-Dichloroethene	1.0 U	1.0	1	02/29/16 12:16	
trans-1,3-Dichloropropene	1.0 U	1.0	1	02/29/16 12:16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	110	85 - 122	02/29/16 12:16	
Dibromofluoromethane	108	89 - 119	02/29/16 12:16	
Toluene-d8	116	87 - 121	02/29/16 12:16	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ1602241-04

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.0 U	1.0	1	03/02/16 12:58	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	1	03/02/16 12:58	
1,1,2-Trichloroethane	1.0 U	1.0	1	03/02/16 12:58	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0 U	1.0	1	03/02/16 12:58	
1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	1	03/02/16 12:58	
1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	1	03/02/16 12:58	
1,2,3-Trichlorobenzene	1.0 U	1.0	1	03/02/16 12:58	
1,2,4-Trichlorobenzene	1.0 U	1.0	1	03/02/16 12:58	
1,2,4-Trimethylbenzene	1.0 U	1.0	1	03/02/16 12:58	
1,2-Dibromo-3-chloropropane (DBCP)	2.0 U	2.0	1	03/02/16 12:58	
1,2-Dibromoethane	1.0 U	1.0	1	03/02/16 12:58	
1,2-Dichlorobenzene	1.0 U	1.0	1	03/02/16 12:58	
1,2-Dichloroethane	1.0 U	1.0	1	03/02/16 12:58	
1,2-Dichloropropane	1.0 U	1.0	1	03/02/16 12:58	
1,3,5-Trimethylbenzene	1.0 U	1.0	1	03/02/16 12:58	
1,3-Dichlorobenzene	1.0 U	1.0	1	03/02/16 12:58	
1,4-Dichlorobenzene	1.0 U	1.0	1	03/02/16 12:58	
1,4-Dioxane	40 U	40	1	03/02/16 12:58	
2-Butanone (MEK)	5.0 U	5.0	1	03/02/16 12:58	
2-Hexanone	5.0 U	5.0	1	03/02/16 12:58	
4-Methyl-2-pentanone	5.0 U	5.0	1	03/02/16 12:58	
Acetone	5.0 U	5.0	1	03/02/16 12:58	
Benzene	1.0 U	1.0	1	03/02/16 12:58	
Bromochloromethane	1.0 U	1.0	1	03/02/16 12:58	
Bromodichloromethane	1.0 U	1.0	1	03/02/16 12:58	
Bromoform	1.0 U	1.0	1	03/02/16 12:58	
Bromomethane	1.0 U	1.0	1	03/02/16 12:58	
Carbon Disulfide	1.0 U	1.0	1	03/02/16 12:58	
Carbon Tetrachloride	1.0 U	1.0	1	03/02/16 12:58	
Chlorobenzene	1.0 U	1.0	1	03/02/16 12:58	
Chloroethane	1.0 U	1.0	1	03/02/16 12:58	
Chloroform	1.0 U	1.0	1	03/02/16 12:58	
Chloromethane	1.0 U	1.0	1	03/02/16 12:58	
Cyclohexane	1.0 U	1.0	1	03/02/16 12:58	
Dibromochloromethane	1.0 U	1.0	1	03/02/16 12:58	
Dichlorodifluoromethane (CFC 12)	1.0 U	1.0	1	03/02/16 12:58	
Dichloromethane	1.0 U	1.0	1	03/02/16 12:58	
Ethylbenzene	1.0 U	1.0	1	03/02/16 12:58	
Isopropylbenzene (Cumene)	1.0 U	1.0	1	03/02/16 12:58	
Methyl Acetate	2.0 U	2.0	1	03/02/16 12:58	
Methyl tert-Butyl Ether	1.0 U	1.0	1	03/02/16 12:58	
Methylcyclohexane	1.0 U	1.0	1	03/02/16 12:58	
Styrene	1.0 U	1.0	1	03/02/16 12:58	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ1602241-04

Units: ug/L
Basis: NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Q
Tetrachloroethene (PCE)	1.0 U	1.0	1	03/02/16 12:58	
Toluene	1.0 U	1.0	1	03/02/16 12:58	
Trichloroethene (TCE)	1.0 U	1.0	1	03/02/16 12:58	
Trichlorofluoromethane (CFC 11)	1.0 U	1.0	1	03/02/16 12:58	
Vinyl Chloride	1.0 U	1.0	1	03/02/16 12:58	
cis-1,2-Dichloroethene	1.0 U	1.0	1	03/02/16 12:58	
cis-1,3-Dichloropropene	1.0 U	1.0	1	03/02/16 12:58	
m,p-Xylenes	2.0 U	2.0	1	03/02/16 12:58	
n-Propylbenzene	1.0 U	1.0	1	03/02/16 12:58	
o-Xylene	1.0 U	1.0	1	03/02/16 12:58	
trans-1,2-Dichloroethene	1.0 U	1.0	1	03/02/16 12:58	
trans-1,3-Dichloropropene	1.0 U	1.0	1	03/02/16 12:58	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	03/02/16 12:58	
Dibromofluoromethane	110	89 - 119	03/02/16 12:58	
Toluene-d8	114	87 - 121	03/02/16 12:58	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Analyzed: 02/29/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1602123-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	20.0	20.0	100	74-120
1,1,2,2-Tetrachloroethane	8260C	18.7	20.0	93	78-122
1,1,2-Trichloroethane	8260C	19.0	20.0	95	82-118
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	19.8	20.0	99	75-124
1,1-Dichloroethane (1,1-DCA)	8260C	21.9	20.0	110	78-117
1,1-Dichloroethene (1,1-DCE)	8260C	20.2	20.0	101	74-135
1,2,3-Trichlorobenzene	8260C	21.7	20.0	109	56-164
1,2,4-Trichlorobenzene	8260C	22.1	20.0	111	68-147
1,2,4-Trimethylbenzene	8260C	20.7	20.0	104	81-123
1,2-Dibromo-3-chloropropane (DBCP)	8260C	15.3	20.0	76	55-149
1,2-Dibromoethane	8260C	18.3	20.0	91	81-125
1,2-Dichlorobenzene	8260C	20.3	20.0	102	80-119
1,2-Dichloroethane	8260C	21.3	20.0	107	71-127
1,2-Dichloropropane	8260C	22.2	20.0	111	80-119
1,3,5-Trimethylbenzene	8260C	21.3	20.0	106	79-123
1,3-Dichlorobenzene	8260C	20.8	20.0	104	79-121
1,4-Dichlorobenzene	8260C	21.2	20.0	106	79-119
1,4-Dioxane	8260C	393	400	98	69-151
2-Butanone (MEK)	8260C	17.4	20.0	87	61-137
2-Hexanone	8260C	18.6	20.0	93	63-124
4-Methyl-2-pentanone	8260C	20.4	20.0	102	66-124
Acetone	8260C	18.6	20.0	93	40-161
Benzene	8260C	21.4	20.0	107	76-118
Bromochloromethane	8260C	18.1	20.0	91	81-126
Bromodichloromethane	8260C	19.8	20.0	99	78-126
Bromoform	8260C	17.2	20.0	86	71-136
Bromomethane	8260C	16.0	20.0	80	42-166
Carbon Disulfide	8260C	20.5	20.0	102	65-127
Carbon Tetrachloride	8260C	19.7	20.0	99	68-125
Chlorobenzene	8260C	20.0	20.0	100	80-121
Chloroethane	8260C	19.1	20.0	96	70-127
Chloroform	8260C	18.9	20.0	94	76-120
Chloromethane	8260C	18.9	20.0	94	69-145

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Analyzed: 02/29/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1602123-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyclohexane	8260C	20.0	20.0	100	63-121
Dibromochloromethane	8260C	17.5	20.0	88	77-128
Dichlorodifluoromethane (CFC 12)	8260C	19.2	20.0	96	65-152
Dichloromethane	8260C	18.6	20.0	93	73-122
Ethylbenzene	8260C	19.9	20.0	99	76-120
Isopropylbenzene (Cumene)	8260C	20.7	20.0	103	78-126
Methyl Acetate	8260C	18.0	20.0	90	62-131
Methyl tert-Butyl Ether	8260C	19.1	20.0	95	78-125
Methylcyclohexane	8260C	19.9	20.0	100	51-129
Styrene	8260C	19.2	20.0	96	80-124
Tetrachloroethene (PCE)	8260C	20.6	20.0	103	78-124
Toluene	8260C	20.9	20.0	104	77-120
Trichloroethene (TCE)	8260C	20.1	20.0	100	78-123
Trichlorofluoromethane (CFC 11)	8260C	21.8	20.0	109	68-126
Vinyl Chloride	8260C	20.7	20.0	104	69-133
cis-1,2-Dichloroethene	8260C	19.5	20.0	97	80-121
cis-1,3-Dichloropropene	8260C	20.1	20.0	100	74-126
m,p-Xylenes	8260C	40.3	40.0	101	78-123
n-Propylbenzene	8260C	21.2	20.0	106	80-127
o-Xylene	8260C	19.0	20.0	95	80-120
trans-1,2-Dichloroethene	8260C	19.9	20.0	99	80-120
trans-1,3-Dichloropropene	8260C	20.2	20.0	101	67-135

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Analyzed: 03/02/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1602241-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	20.6	20.0	103	74-120
1,1,2,2-Tetrachloroethane	8260C	18.4	20.0	92	78-122
1,1,2-Trichloroethane	8260C	19.6	20.0	98	82-118
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	19.9	20.0	100	75-124
1,1-Dichloroethane (1,1-DCA)	8260C	20.7	20.0	103	78-117
1,1-Dichloroethene (1,1-DCE)	8260C	19.8	20.0	99	74-135
1,2,3-Trichlorobenzene	8260C	20.4	20.0	102	56-164
1,2,4-Trichlorobenzene	8260C	19.8	20.0	99	68-147
1,2,4-Trimethylbenzene	8260C	21.5	20.0	108	81-123
1,2-Dibromo-3-chloropropane (DBCP)	8260C	14.1	20.0	70	55-149
1,2-Dibromoethane	8260C	17.8	20.0	89	81-125
1,2-Dichlorobenzene	8260C	20.8	20.0	104	80-119
1,2-Dichloroethane	8260C	20.7	20.0	104	71-127
1,2-Dichloropropane	8260C	21.2	20.0	106	80-119
1,3,5-Trimethylbenzene	8260C	21.6	20.0	108	79-123
1,3-Dichlorobenzene	8260C	20.6	20.0	103	79-121
1,4-Dichlorobenzene	8260C	21.5	20.0	107	79-119
1,4-Dioxane	8260C	352	400	88	69-151
2-Butanone (MEK)	8260C	18.8	20.0	94	61-137
2-Hexanone	8260C	17.0	20.0	85	63-124
4-Methyl-2-pentanone	8260C	19.5	20.0	97	66-124
Acetone	8260C	16.4	20.0	82	40-161
Benzene	8260C	21.0	20.0	105	76-118
Bromochloromethane	8260C	18.6	20.0	93	81-126
Bromodichloromethane	8260C	19.6	20.0	98	78-126
Bromoform	8260C	15.6	20.0	78	71-136
Bromomethane	8260C	18.4	20.0	92	42-166
Carbon Disulfide	8260C	20.8	20.0	104	65-127
Carbon Tetrachloride	8260C	19.6	20.0	98	68-125
Chlorobenzene	8260C	20.5	20.0	102	80-121
Chloroethane	8260C	21.1	20.0	106	70-127
Chloroform	8260C	19.9	20.0	100	76-120
Chloromethane	8260C	19.7	20.0	98	69-145

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: CB&I
Project: Von Roll - VRI/152587
Sample Matrix: Water

Service Request: R1601537
Date Analyzed: 03/02/16

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1602241-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyclohexane	8260C	21.3	20.0	107	63-121
Dibromochloromethane	8260C	17.2	20.0	86	77-128
Dichlorodifluoromethane (CFC 12)	8260C	18.2	20.0	91	65-152
Dichloromethane	8260C	17.9	20.0	90	73-122
Ethylbenzene	8260C	20.0	20.0	100	76-120
Isopropylbenzene (Cumene)	8260C	21.5	20.0	107	78-126
Methyl Acetate	8260C	17.1	20.0	86	62-131
Methyl tert-Butyl Ether	8260C	17.7	20.0	89	78-125
Methylcyclohexane	8260C	21.1	20.0	106	51-129
Styrene	8260C	19.2	20.0	96	80-124
Tetrachloroethene (PCE)	8260C	21.6	20.0	108	78-124
Toluene	8260C	21.8	20.0	109	77-120
Trichloroethene (TCE)	8260C	19.3	20.0	96	78-123
Trichlorofluoromethane (CFC 11)	8260C	22.4	20.0	112	68-126
Vinyl Chloride	8260C	21.4	20.0	107	69-133
cis-1,2-Dichloroethene	8260C	19.5	20.0	97	80-121
cis-1,3-Dichloropropene	8260C	20.5	20.0	103	74-126
m,p-Xylenes	8260C	39.7	40.0	99	78-123
n-Propylbenzene	8260C	21.7	20.0	109	80-127
o-Xylene	8260C	19.4	20.0	97	80-120
trans-1,2-Dichloroethene	8260C	19.7	20.0	98	80-120
trans-1,3-Dichloropropene	8260C	20.6	20.0	103	67-135



Cooler Receipt and Preservation

R1601537

5

CBSI Environmental & Infrastructure
Von Roll - VRIProject/Client CBE Folder Number _____Cooler received on 2/23/16 by: DPWCOURIER: ALS UPS ~~FEDEX~~ VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y ☒ N
2	Custody papers properly completed (ink, signed)?	☒ N
3	Did all bottles arrive in good condition (unbroken)?	☒ N
4	Circle: Wet Ice Dry Ice Gel packs present?	☒ N

5a	Perchlorate samples have required headspace?	Y N ☒ NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y ☒ NA
6	Where did the bottles originate?	ALS/ROC ☒ CLIENT
7	Soil VOA received as:	Bulk Encore 5035set ☒ NA

8. Temperature Readings Date: 2/23/16 Time: 1341 ID: IR#3 IR#5 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>31.1</u>						
Correction Factor (°C)	<u>±0.0</u>						
Corrected Temp (°C)	<u>31.1</u>						
Within 0-6°C?	☒ N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	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: R-002 by DPW on 2/23/16 at 1341
5035 samples placed in storage location: _____ by _____ on _____ at _____PC Secondary Review: SMW 2/23/16Cooler Breakdown: Date: 2/23/16 Time: 1349 by: MDS

- 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 ₃								
≤2	H ₂ SO ₄								
<4	NaHSO ₄								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na ₂ S ₂ O ₃ (CN), ascorbic (phenol).					
	Na ₂ S ₂ O ₃	-	-						
	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: Client

Other Comments:

PC Secondary Review: SMW 2/23/16

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter