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August 15, 2017
File No. 01.0024065.19

Ms. Josephine Acevedo Esquilin
Puerto Rico Environmental Quality Board
Land Pollution Branch
Cruz A. Matos Environmental Agencies Building
1375 Ponce de Leon Ave.
San Juan, Puerto Rico 00926-2604

Re: Semi-Annual Project Progress Report
January 2017 (Q1) through June 2017 (Q2)
HP Inc. Voluntary Remediation Project
San German, Puerto Rico

Dear Ms. Esquilin:

GZA GeoEnvironmental, Inc., on behalf of HP Inc. (formerly Hewlett-Packard Company), is submitting the semi-annual Project Progress Report for the San German voluntary remediation project (reporting period January 2017 (Q1) through June 2017 (Q2)). During this reporting period evaluation continued of the Intrinsic Biodegradation Study as a remedial strategy for the subject site. Implementation of the Intrinsic Biodegradation Study commenced in late October 2010.

Please contact the undersigned or Mr. Jeff Miller (HP Inc.) at 970-898-8803 or jeffrey.s.miller@hp.com, if you have any questions.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

John A. Colbert
Senior Project Manager

Karen Kinsella
Consultant/Reviewer

Charles A. Lindberg
Senior Principal

Attachment: January 2017 (Q1) through June 2017 (Q2) Project Progress Report

cc: Díaz, Lorena Rodríguez; Puerto Rico Environmental Quality Board
Aviles, Jesse; United States Environmental Protection Agency Region II
Morales, Jorge; Puerto Rico Industrial Development Company
Meléndez, Joel; Puerto Rico Industrial Development Company
Fornés, Karen; Puerto Rico Industrial Development Company
Miller, Jeff; HP Inc.
Anderson, Roger; TRC Solutions
File

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# JANUARY 2017 (Q1) THROUGH JUNE 2017 (Q2)
# HP INC.
# VOLUNTARY REMEDIAL ACTIONS
# SAN GERMAN, PUERTO RICO

**PREPARED ON BEHALF OF:**
HP Inc.
Fort Collins, Colorado

**PREPARED BY:**
GZA GeoEnvironmental, Inc.
Norwood, Massachusetts

August 2017
File No. 01.0024065.19

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## 1.0 INTRODUCTION

This Semi-Annual Project Progress Report is submitted in support of HP Inc.'s (HP - formerly Hewlett-Packard Company) Voluntary Soil and Groundwater Remediation project at the Former Digital Equipment Corporation[1] facility in San German, Puerto Rico (the "Site"). Refer to Figure 1 for a Site Locus Plan and to Figure 2 for a Site Plan. HP has retained GZA GeoEnvironmental, Inc. (GZA) to manage this project. The work performed is in accordance with the Intrinsic Biodegradation (IB) Study Work Plan[2] ("IB Work Plan") previously submitted to the Environmental Quality Board of Puerto Rico (EQB) and the United States Environmental Protection Agency (EPA). The October 2015 revision to the IB Work Plan included implementation of an Enhanced Reductive Dechlorination (ERD) pilot test that was initiated in March 2016.

Groundwater sampling was performed in accordance with the Quality Assurance Project Plan (QAPP) (Revision 4, Voluntary Remediation Project, San German, dated April 2015 and revised October 2015) developed for the HP Voluntary Soil and Groundwater Remediation Project. EQB concurred with the IB Study Work Plan in a letter dated November 2, 2015. Pertinent project analytical data have been certified by a Puerto Rico-certified chemist. Please note that the findings, opinions, conclusions, and recommendations presented in this report are subject to the Limitations provided in Appendix A.

## 2.0 REPORTING PERIOD

This progress report covers the period from January 1, 2017 (beginning of first quarter 2017) through June 30, 2017 (end of second quarter 2017).

## 3.0 REMEDIAL SYSTEM DESCRIPTION

A Groundwater Containment and Treatment System (GWCTS) was installed and operated at the site, beginning in October 1995. In accordance with the IB Work Plan, operation of this system was discontinued on November 1, 2010, with EQB's concurrence as described in their letter dated October 29, 2010.

The objective of the IB study is to evaluate whether IB of the residual chlorinated volatile organic compounds (cVOCs) in groundwater can continue to reduce dissolved concentrations while maintaining a condition of no significant risk to human or environmental receptors.

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[1] Hewlett-Packard Company and Compaq Computer Corporation merged in 2003 and Compaq Computer Corporation had acquired Digital Equipment Corporation in 1998. Hewlett-Packard Company split into Hewlett Packard Enterprises and HP Inc. in November 2015.

[2] GZA, October 14, 2015, Revised Intrinsic Biodegradation Study Work Plan – Revision 1, Hewlett-Packard, Voluntary Remedial Actions, San German, Puerto Rico.

## 4.0 KEY SITE ACTIVITIES FOR REPORTING PERIOD

In April 2017 and in accordance with the IB Work Plan, GZA and On-Site Environmental, Inc. (On-Site) personnel obtained water level readings and conducted low-flow groundwater quality sampling. A supplemental sampling event was conducted by On-Site in June 2017. Additional information on these activities is described in Section 7.0 of this progress report.

## 5.0 KEY PROJECT DOCUMENTS FOR REPORTING PERIOD

Key project documents generated during this reporting period are presented below.

| AUTHOR | TITLE | DATE |
|---|---|---|
| GZA | Response to PREQB's Comments on Q3-Q4 2016 Status Report | 6/23/2017 |
| GZA | Revised Semi-Annual Project Progress Report (No. 44) July 2016 (Q3) through December 2016 (Q4) | 06/27/2017 |

## 6.0 OPERATION AND MAINTENANCE ACTIVITIES

This section discusses operation and maintenance (O&M) activities performed during this reporting period.

### 6.1 GWTS O&M

The GWTS was not in operation during this reporting period. Various housekeeping/monitoring activities were conducted as needed. These activities include observation and photo-documentation of the GWTS surrounding area, removal of trash and debris from the GWTS area, and observation of the GWTS for abnormal conditions. Additionally, PRIDCO personnel regularly maintain the landscaped areas at the Site. During the April 2017 Site visit, additional evidence of vandalism was observed. Specifically, portions of the chain link fence surrounding the drum storage area were removed to allow unauthorized access. The equipment and supplies stolen included four canopies, four coolers, a low-flow pump regulator for down hole pumps, field filters, spray bottles, 5-gallon buckets, nitrile gloves, and graduated cylinders. No additional evidence of vandalism was observed during On-Site's June 2017 Site visit.

### 6.2 WASTE MANAGEMENT

Approximately 50 gallons of groundwater was generated during the April 2017 and June 2017 groundwater sampling events. This water was treated on April 13, 2017 and June 27, 2017 using liquid-phase carbon, was discharged to the GWTS's equalization tank for temporary storage, and a water

sample was collected in April 2017 from the equalization tank and analyzed for VOCs. No water sample could be collected during June 2017 because the volume of water treated was insufficient to cause discharge from the liquid-phase carbon drum. No VOCs were detected in the sample above the laboratory detection limits or above the discharge criteria. The treated water is presently being stored in the equalization tank.

Water associated with the October 2016 Site activities evaporated prior to the April 2017 sampling event.

### 6.3 PRASA DISCHARGE AUTHORIZATION MONITORING

During the prior reporting period, GZA collected a sample of the groundwater sampling purge water following treatment with liquid-phase carbon. The results obtained in November 2016 indicated VOC concentrations were below laboratory detection limits; however, the water associated with the October 2016 Site activities evaporated by April 2017. Therefore, no discharge occurred to the sanitary sewer during this reporting period.

As noted in Section 6.2, groundwater purged from monitoring wells during the April 2017 and June 2017 Site activities was treated with liquid-phase carbon and stored in the equalization tank. A treated purge water sample was collected following water treatment, if there was a discharge from the liquid-phase carbon drum. Results indicate VOCs from the purge water sample were below the laboratory detection limit and below the discharge criteria. Due to the small quantities of water being generated and the prior abandonment of the groundwater pumping wells HP has elected to discontinue the PRASA permit (AUA-E-06-313-018) and will be issuing PRASA a letter documenting the action.[3] Groundwater produced during future sampling events will be treated by granular activated carbon, sampled and will be pumped to the equalization tank for temporary storage/evaporation purposes. Excess water that may not evaporate prior to next sampling event will be containerized for appropriate off-site disposal.

## 7.0 IB WORK PLAN IMPLEMENTATION

On October 26, 2010, implementation of the IB Work Plan began with the baseline groundwater gauging and sampling conducted October 26 through 29, 2010 and November 1, 2010. On November 1, 2010, the GWCTS was deactivated. This work was performed in accordance with the IB Work Plan and EQB's concurrence letter dated October 29, 2010. Groundwater monitoring wells were gauged for groundwater elevations and sampled for laboratory and/or field analyses to meet the principal objectives of:

(i) Evaluating whether dissolved cVOC concentrations at the Site continue to decline;

[3] A copy of the PRASA permit termination letter will be provided to EQB.

(ii) Assessing the relative proportion of trichloroethene (TCE) to its daughter compounds, and quantifying other biologically-sensitive parameters, to confirm biodegradation is occurring along expected degradation pathways; and,

(iii) Evaluating the potential for off-Site migration of impacted groundwater via evaluation of groundwater elevation/flow contours and perimeter well monitoring.

This section discusses the data collected during this reporting period and the associated preliminary findings.

During this reporting period, GZA and On-Site personnel gauged Site wells and collected groundwater samples from twenty-nine monitoring wells on April 10-13 and On-Site personnel collected groundwater samples from six monitoring wells on June 26 and 27, 2017. Samples collected in April 2017 were analyzed for cVOCs and IB screening parameters in accordance with the revised IB Work Plan and QAPP Revision 4, dated October 14, 2015. Samples collected in June 2017 were analyzed for cVOCs only. The June 2017 samples were collected due to the laboratory-reported observed air bubbles within all three sample vials from wells GZ-505R, GZ-701R, GZ-702R, GZ-703R, OW-304L, and WB-3L during the April 2017 sampling. Although the presence of bubbles in the sample bottles does not necessarily invalidate the sample results, the bubbles may bias the reported cVOC concentrations. Sample results from samples collected from wells in both April 2017 and June 2017 were similar. The results of the April 2017 and June 2017 groundwater sampling events are presented in Tables 1 and 2. Table 3 summarizes the wells sampled during the April 2017 and June 2017 groundwater sampling events as compared to those scheduled to be sampled per the IB Work Plan.

With the exception of well BR-308, which is a deep six-inch diameter bedrock well, and the three injection wells (IW-1, IW-2, and IW-3), which are four inches in diameter, the monitoring wells consist of two-inch-diameter screens and casings that have been installed in the fill/alluvium, saprolite, and bedrock units. Each monitoring well is covered by a road box or a stand pipe to protect it from vehicular traffic. A lockable well plug is installed at the top of each monitoring well casing within the road box or stand pipe.

The sentinel groundwater monitoring wells installed north of the Site in 2012 (GZ-601L and GZ-601R) were included in the gauging and sampling event conducted in April 2017. Sampling during this reporting period also included monitoring wells, GZ-701L and GZ-701R (north of GZ-507R), GZ-703R (southern portion of the Site), GZ-702U and GZ-702R (west of GZ-513R) which were installed in 2014. Additionally, injection wells IW-1 (east of OW-101) and IW-2 and IW-3 (east of OW-307), installed in March 2016, were included in the April 2017 sampling event.

## 7.1 GROUNDWATER ELEVATION MONITORING

During this reporting period, groundwater elevations were gauged in accordance with the revised IB Work Plan. The elevation data was collected on April 10, 2017, using a water level indicator[4]. These data, along with previous data dating back to January 2011 are presented in Table 4.

Bedrock groundwater elevation contours for the most recent monitoring round (April 10, 2017) are presented on Figure 3. These data show that, under non-pumping conditions, groundwater generally flows west to north-west toward the adjacent property owned by PREPA. When extraction wells W-1 and W-8 were active, there were localized areas of bedrock groundwater capture associated with these extraction wells, as depicted in the March 19, 2010 progress report for the period of July through December 2009.

## 7.2 APRIL AND JUNE 2017 GROUNDWATER SAMPLING

During the April 2017 and June 2017 sampling rounds, select wells were sampled for cVOCs and a subset of these wells were sampled for specific IB parameters[5]. The groundwater cVOC concentrations are used to monitor cVOC distribution and temporal trends, and the cVOC concentrations plus IB parameters are used to evaluate the evidence for IB at the Site. Analyses conducted for each well were in general accordance with Table 2 of the IB Work Plan. Refer to Table 3 for the list of wells that were sampled and Figure 2 for the locations of these wells.

Groundwater sampling was conducted employing low-flow techniques in accordance with Revision 4 of the QAPP (dated October 2015.) This April 2017 sampling event took three days to complete (April 11, 12, and 13) and the June 2017 sampling took two days to complete (June 26 and 27). The groundwater elevation at each well was measured using a water level indicator prior to well purging. The well was then purged at a rate that limited drawdown until the low-flow parameters (temperature, pH, dissolved oxygen (DO), oxidation-reduction potential (ORP), and specific conductance (SC)) stabilized. If a well was purged dry, it was allowed to recharge and was sampled upon recharge or the next day. Trip blanks were placed in each cooler and field blanks were collected at the beginning of each day of sampling. Two equipment blanks were collected when dedicated pumps could not be used. Each equipment blank was collected following decontamination of the pump. Four field duplicates and two pairs of matrix spikes/matrix spike duplicates were collected on April 11 and 12, 2017. Field blanks, trip blanks, duplicates, matrix spikes, and matrix spike duplicates were analyzed for cVOCs only. Temperature blanks were included in each cooler, but were only used to aid the laboratory in measuring the temperature of the cooler upon arrival.

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[4] Transducers installed in former monitoring wells GZ-507R, GZ-508R, GZ-509R, GZ-510R, GZ-512R, and GZ-513R on the PREPA property are no longer reliable or repairable; therefore, data from these transducers was not and will no longer be collected.

[5] The "VOCs & IB Parameters" include cVOCs and dissolved iron, methane, ethane, ethene, TOC, and the field parameters DO, ORP, and pH. The "VOCs" set includes cVOCs, and the field parameters DO, ORP, and pH.

Purge water generated from the groundwater sampling event was temporarily stored and secured in 55-gallon drums and was processed on Site through the liquid-phase carbon drum.

Groundwater samples were submitted to TestAmerica of Tampa, Florida, and were analyzed for cVOCs by EPA Method 8260B; dissolved iron by EPA Method 6010B; methane, ethane, and ethene by EPA Method RSK-175; and total organic carbon (TOC) by SM 5310B. The analytical results for cVOCs were certified by a Puerto Rico-certified chemist and were validated by GZA as required by QAPP Revision 4.

## 7.3 GROUNDWATER MONITORING RESULTS

Laboratory analytical results for groundwater samples collected in April 2017 and June 2017 are summarized in Table 1 (cVOCs) and Table 2 (IB Parameters). These tables also provide results from recent analyses for each well[6]. Aqueous concentrations for TCE in fill, TCE in saprolite/bedrock, *cis*-1,2-dichloroethene (1,2-DCE) in fill, 1,2-DCE in saprolite/bedrock, vinyl chloride (VC) in fill, and VC in saprolite/bedrock are shown in Figures 4A through 4F, respectively. The laboratory analytical reports for the April and June 2017 sampling events are provided in Appendix B.

The cVOC concentrations for April 2017 and June 2017 are, with a few exceptions that are discussed below, generally comparable to the concentrations observed during the previous groundwater sampling rounds. The data collected during this reporting period have been utilized to assess trends, especially post GWCTS deactivation, as outlined below.

*cVOC (Molarity) Temporal Trend*

Given that one mole of TCE yields one mole of 1,2-DCE via a reductive dechlorination pathway, comparisons using mass per volume measurements are biased by the mass difference between the two chemical compounds due to the replacement of the heavier chlorine atom with a lighter hydrogen atom (i.e., while one mole of TCE yields one mole of 1,2-DCE, one gram of TCE yields less than one gram of 1,2-DCE via dechlorination). To normalize the data for the purpose of evaluating the TCE to 1,2-DCE transformation path, GZA converted the data for these compounds from mass per volume (concentrations) to their molar equivalencies.

Graphs showing molarities of TCE, 1,2-DCE, and VC over time for 31 monitoring wells are presented in Appendix C. The molarity trend analysis illustrates the 1,2-DCE dominance at the Site, which is consistent with the reductive dechlorination of TCE.

Because there has been no known release of 1,2-DCE on Site, the most plausible explanation for the 1,2-DCE dominance at the Site is that biodegradation is occurring via a reductive dechlorination pathway[7],

[6] For wells that have been sampled on a semi-annual basis since the 2010 baseline sampling, up to thirteen rounds of sampling starting with the baseline sampling event are shown in the tables. For the remaining wells and where data are available, at least the five most recent sampling rounds, including the April 2017 and June 2017 (if conducted) sampling events, are shown.

[7] There is also a co-metabolic pathway; however, that pathway is typically not a significant natural attenuation mechanism.

converting TCE to 1,2-DCE and liberating a chloride anion. While TCE is generally only biodegradable under anaerobic conditions, 1,2-DCE is biodegradable under both aerobic and anaerobic conditions. As a result, it is possible to have decreasing molarity of 1,2-DCE while TCE is concurrently degrading via reductive dechlorination and not reflect 1,2-DCE dominance.

In general, TCE concentrations have exhibited a downward temporal trend consistent with IB. Nine monitoring wells[8] (GZ-501L, GZ-504R, GZ-505R, GZ-519U, OW-307, OW-404R, WB-1U, WB-3L, and WB-4L) that were sampled during this reporting period have not exhibited a general downward temporal trend; however, these wells have concentrations of daughter products 1,2-DCE or 1,2-DCE and VC that suggest IB is ongoing. These wells are discussed below:

- Prior to the GWCTS shutdown on November 1, 2010, TCE concentrations in GZ-501L varied from 0.57 ppb in June 2003 to 24 ppb in December 2001 and March 2002. Since the shutdown of the GWCTS, TCE concentrations have generally increased to a maximum of 38 ppb in June 2015. Results since June 2015 have ranged from 30 to 36 ppb. Concurrent with the increase in TCE has been an increase in 1,2-DCE, indicating that IB is occurring at this location. TCE concentrations at GZ-501L appear to have stabilized over the last three years. This well will continue to be sampled semi-annually.
- Historically, the TCE concentrations at GZ-504R, WB-3L, and WB-4L were consistently non-detect or below the Puerto Rico Water Quality Standard (PRWQS) of 5.0 ppb. TCE concentrations at GZ-504R, WB-3L, and WB-4L have generally increased since GWCTS shutdown to maximums of 30 ppb, 79[9] ppb, and 120 ppb, respectively. These maximum concentrations were measured in March 2016, March 2016, and April 2017, respectively. GZ-504R, WB-3L, and WB-4L's results were 25 ppb (April 2017), 70 ppb (June 2017), and 120 ppb (April 2017) for TCE, respectively, slightly lower than or similar to the October 2016 result. IB is proceeding in the vicinity of all three monitoring wells, with 1,2-DCE concentrations of 22 ppb (April 2017), 94 ppb (June 2017), and 53 ppb (April 2017), respectively. These three wells will continue to be sampled semi-annually.
- The TCE concentrations at GZ-505R were consistently non-detect or below the PRWQS of 5.0 ppb prior to 2012. TCE concentrations at GZ-505R increased following GWCTS shutdown to a maximum concentration of 160 ppb in October 2016; however, TCE levels have generally stabilized since October 2014, and daughter product 1,2-DCE concentrations have been between 74 ppb and 100 ppb in the past three years. June 2017 TCE, 1,2-DCE, and VC concentrations were 120 ppb, 72 ppb, and 1.5 ppb, respectively. This well will continue to be sampled semi-annually.
- The TCE concentrations between 1992 and 2002 at well OW-307, which is screened in the saprolite, varied from 82 to 1,100 ppb. No samples were collected between July 2002 and September 2010. TCE concentrations at OW-307, generally increased subsequent to October 2010, reaching a high of 1,250 ppb[9] in the October 2014 sampling event; TCE concentrations decreased substantially to 36 ppb in April 2017. Based on the concentrations of daughter products 1,2-DCE (370 ppb) and VC (66 ppb) and several IB parameters (3.1 ppm dissolved iron,

[8] Data from a few other wells has recent increasing concentrations of TCE, but each have been below historic highs and the data sets have significant variability. The data set from these wells is insufficient to conclude there is an overall increasing trend.

[9] Average concentration of the parent and duplicate sample.

6.6 ppm methane, 3.4 ppb ethene, and an ORP of -48.5), it is likely that the ERD injections at IW-2 and IW-3 are beginning to treat the residual TCE concentrations at OW-307. This well will continue to be sampled semi-annually.

- The groundwater at GZ-519U has been sampled seventeen times between December 2002 and April 2017. Pre-GWCTS shutdown TCE concentrations varied from 36 ppb (March 2003) to 99 ppb (October 2010) and post-GWCTS concentrations have varied from 57 ppb (April 2011 and 2012) to 230 ppb (October 2016). The concentration of TCE in April 2017 was 120 ppb. The concentration of 1,2-DCE (57 ppb in April 2017) indicates that IB is ongoing at this location. This well will continue to be sampled semi-annually.
- The groundwater at WB-1U has been sampled thirty-one times between March 2000 and April 2017. Pre-GWCTS shutdown TCE concentrations varied from <1 ppb (June 2001) to 310 ppb (December 2003) and post-GWCTS concentrations have varied from <1.0 ppb (March 2016) to 130 ppb (October 2016). The April 2017 TCE concentration was 56 ppb. The concentrations of 1,2-DCE and VC (72 ppb and 2.1 ppb, respectively, in April 2017) indicates that IB is ongoing at this location. This well will continue to be sampled semi-annually.
- The groundwater at OW-404R has been sampled forty times between August 2000 and April 2017. Pre-GWCTS shutdown TCE concentrations varied from <1 ppb (June 2001) to 260 ppb (December 2002) and post-GWCTS concentrations have varied from 22 ppb (March 2016) to 130 ppb (October 2015) with 110 ppb reported in October 2016 and April 2017. The concentration of 1,2-DCE and VC (150 ppb and 2 ppb, respectively, in April 2017) indicate that IB is ongoing at this location. This well will continue to be sampled semi-annually.

The TCE concentrations in samples from the recently installed injection wells are less than the concentrations detected in nearby wells OW-101 (2,400 ppb) and OW-307 (36 ppb). IW-1 was screened in fill and installed 37 feet upgradient of OW-101. IW-2 and IW-3 were screened in saprolite and were installed upgradient of OW-307 at distances of 33 and 32 feet, respectively. Wells IW-1, IW-2 and IW-3 had TCE concentrations of 46 ppb, <1.0 ppb and <1.0 ppb, respectively. These concentrations represent noticeable decreases from their pre-ERD injection concentrations of 670 ppb, 55 ppb, and 31 ppb, respectively. As described above, concentrations of cVOCs and IB parameters in OW-307 indicate the injections at OW-307 are decreasing the concentration of TCE via the reductive dichlorination pathway. Based on the limited quantity of ERD substrate which was injected at IW-1, we do not expect similar significant TCE reductions on OW-101. The future semi-annual testing of these wells will serve to evaluate enhanced IB in the injection wells and downgradient of these locations.

Table 5 shows the proposed wells to be sampled during the next sampling event scheduled for October 2017.

*Biodegradation Indicator Trend*

The April 2017 biodegradation indicator data provide a snapshot of the Site conditions after about five years of the IB Study.

The April 2017 data set for these indicator parameters was tabulated for each hydrogeological unit (fill/alluvium, saprolite, and bedrock - see Table 2). There is no clear trend for any of the parameters on a Site-wide basis; however, several wells do show elevated dissolved iron and methane concentrations, measurable ethane or ethene, low DO concentrations, and low ORP since the shutdown of the GWCTS. All show favorable, near-neutral pH. Although TOC concentrations remain low in more than half of the wells sampled, IB can proceed by recycling microbial biomass when groundwater TOC is low. The geochemical trends suggest predominantly favorable conditions for intrinsic anaerobic cVOC biodegradation via a reductive dechlorination pathway in the vicinities of those wells.

Many of the bedrock and saprolite wells have favorably low DO concentrations. Approximately two thirds of the wells had higher ORP levels in October 2016 than in the April 2017 sampling event; however, fourteen of the wells presented in Table 2 had favorable ORPs (below 50 mV) during the April 2017 sampling round, and seven wells had moderately favorable ORPs, between 50 and 100 mV. GZA attempted to collect readings from the injection wells; however, the residual Anaerobic Biochem (ABC) substrate observed in wells IW-2 and IW-3 appeared to damage the DO sensor. As such, DO readings were only obtained for IW-1 and ORP/pH readings were only collected for IW-1 and IW-2. GZA will not collect DO, ORP, or pH from these wells until there is no longer any visual indication of the residual ABC substrate. Concentrations of total organic carbon, dissolved iron, and methane increased notably from pre-ERD levels, indicating that the ERD injections have been successful in enhancing biological activity within the injection areas. The April 2017 VOC and IB data continues to suggest that the ERD injections are also beginning to affect conditions within downgradient well OW-307. The ERD pilot program is directed at improving reductive dechlorination conditions; continued monitoring will provide additional data in this regard.

*Summary*

In general, the data collected to date, specifically the cVOC temporal trends discussed above, are consistent with the occurrence of IB via a reductive dechlorination pathway. Importantly, these data provide primary lines of evidence for cVOC biodegradation at the site. Additionally, a pilot program to evaluate enhanced biodegradation at certain key locations is in progress.

## 7.4 DEVIATIONS FROM QAPP REVISION 4

QAPP Revision 4 was followed with no exceptions noted.

## 7.5 DATA VALIDATION

In accordance with Revision 4 of the QAPP, select groundwater analytical data (cVOCs) were certified by a Puerto Rico-certified chemist and were validated by a GZA chemist. GZA performed the data validation in accordance with the EPA Region II Data Validation Standard Operating Procedures (SOPs) (located on the EPA Region II webpage at *http://www.epa.gov/region02/qa/documents.htm*). The criteria for

accepting, rejecting, or qualifying data are included in these SOPs. The IB results do not require certification of validation based on the QAPP. Only the target cVOCs were reviewed as part of data validation. Overall, the quality assurance/quality control (QA/QC) results met the limits established by the QAPP with the exception of some minor deficiencies discussed in Appendix D. The minor deficiencies would not affect the usability of the data evaluated in this data validation.

### 7.6 CONCLUSIONS

As described in more detail in Sections 7.1 and 7.3 above, the groundwater appears to generally flow toward the northwest across the Site. Semi-annual groundwater gauging and data evaluation will be conducted over the next reporting period.

Consistent with previous observations, the biodegradation indicators yield data which support the conclusion that cVOC biodegradation is occurring at the Site. The majority of wells sampled for cVOCs during this reporting period show lower or comparable TCE concentrations relative to previous results. Additionally, certain other indicator parameters are consistent with the occurrence of IB at the site via a reductive dechlorination pathway.

A pilot ERD injection program was conducted in accordance with the IB work plan, and future semi-annual sampling rounds will be used to evaluate the efficacy of ERD injections at the Site. TCE concentrations in ERD injection wells IW-2 and IW-3 have decreased to less than 1 ppb. In monitoring well OW-307, directly downgradient of IW-2 and IW-3, increases in 1,2-DCE and VC, a significant decrease in TCE concentration, and an order of magnitude increase in methane and dissolved iron concentrations suggest that this location has already been affected by the ERD injections. Evaluation of the ERD pilot test's efficacy will continue over the next several years.

## 8.0 PLANNED ACTIVITIES FOR NEXT REPORTING PERIOD

The planned activities for the next reporting period (July through December 2017) are summarized below.

- Selected monitoring wells will be sampled for cVOCs, dissolved iron, methane, ethane, ethene, TOC, and the field parameters DO, ORP, and pH using the low-flow methodology during the next semi-annual monitoring round in October 2017 as shown in Table 5;
- Groundwater elevations will be measured in October 2017; and
- HP will continue to monitor the ERD pilot test as proposed in the IB Work Plan – Revision 1, submitted on October 14, 2015, through 2018.

# TABLES

**TABLE 1**
**SUMMARY OF GROUNDWATER TESTING RESULTS - VOCS**
HP Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Trichloroethene (TCE) | Vinyl chloride | cis-1,2 Dichloroethene (DCE) | trans-1,2 Dichloroethylene | Chloroethane | Chloroform | 1,1- Dichloroethane (DCA) | 1,1-Dichloroethene | 1,2-Dichloropropane | Chloromethane |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fill and Alluvium Wells** | | | | | | | | | | | |
| **Puerto Rico Water Quality Standards or *MCLs*** | | 5.0 | 0.25 | *70* | 100 | NE | 57 | NE | 7.0 | 5.0 | NE |
| GZ-501U | 10/27/2010 | <1.0 | <1.0 | 1.2 | <1.0 | <1.0 | 0.29 JB | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/18/2011 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 10/25/2011 | <1.0 | <1.0 | 0.39 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/11/2012 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/18/2012 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ |
| | 10/29/2014 | <1.0 | <1.0 | 0.88 J | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/27/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| GZ-503U | 10/27/2010 | <1.0 | <1.0 | 8.3 | <1.0 | <1.0 | 0.27 JB | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/18/2011 | 0.54 J | <1.0 | 22 | 0.42 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/24/2011 | 0.28 J | <1.0 | 9.4 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/12/2012 | <1.0 | <1.0 | 13 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/17/2012 | <1.0 | <1.0 U | 8.3 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ |
| | 4/24/2013 | 0.26 J | <1.0 | 8.9 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/30/2013 | 0.23 J | <1.0 | 16 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/15/2014 | 0.60 J | <1.0 | 24 | 0.71 J | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/28/2014 | 1.5 | <1.0 | 15 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/27/2016 | 0.85 J | <1.0 | 7.1 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| GZ-504U | 10/26/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/18/2011 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 10/24/2011 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/12/2012 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 10/15/2012 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/23/2013 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 10/29/2013 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/15/2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 10/28/2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 6/2/2015 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 10/20/2015 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 3/11/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | 29 | <1.0 | <1.0 UJ | <1.0 | <4.0 UJ |
| | 10/27/2016 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/12/2017 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| GZ-506U | 10/27/2010 | 0.26 J | <1.0 | 12 | <1.0 | <1.0 | 0.42 JB | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/19/2011 | 0.77 J | <1.0 | 0.29 J | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/24/2011 | 3.3 | <1.0 | 3.6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 UJ |
| | 4/10/2012 | 2.5 | <1.0 | 2.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/16/2012 | 2.9 | <1.0 | 1.0 J | <1.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/24/2013 | 2.7 | <1.0 | 1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/30/2013 | 1.8 | <1.0 | 0.48 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/16/2014 | 1.3 | <1.0 | 0.55 J | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ |
| | 10/29/2014 | 2.6 | <1.0 | 0.94 J | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/25/2016 | 0.98 J | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| GZ-511U | 6/3/2003 | **65** | **2.0** | 37 | 1.0 | <1.0 | 0.59 J | 0.33 J | 0.99 J | <1.0 | <1.0 |
| | 10/28/2010 | **95** | **0.87 J** | 69 | 1.2 | <1.0 | <1.0 | <1.0 | 0.31 J | <1.0 | <1.0 |
| | 10/17/2012 | **30** | **0.49 J** | 20 | 0.29 J | <1.0 UJ | 0.33 J | <1.0 | <1.0 | <1.0 | <1.0 UJ |
| | 10/29/2014 | **50** | <1.0 | 25 | 0.69 J | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/27/2016 | **110** | **0.75 J** | **71** | 5.1 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| GZ-515U | 6/24/2010 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/20/2011 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/20/2011 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/25/2011 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/11/2012 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/17/2012 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ |
| | 4/24/2013 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/29/2013 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/15/2014 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/28/2014 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/27/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| GZ-519U | 10/29/2010 | **99** | <1.0 | 52 | 1.9 | <1.0 | 6.2 | <1.0 | 1.4 | <1.0 | <1.0 |
| | 4/20/2011 | **57** | <1.0 | 23 | 0.83 J | <1.0 | 5.9 | <1.0 | 1.1 | <1.0 | <1.0 |
| | 10/26/2011 | **110 J** | **0.45 J** | 65 J | 2.3 J | <1.0 | 4.5 J | <1.0 | 2.0 J | <1.0 | <1.0 UJ |
| | 4/10/2012 | **57** | <1.0 | 26 | 0.83 J | <1.0 | 3.5 | <1.0 | 0.79 J | <1.0 | <1.0 |
| | 10/15/2012 | **88** | **0.38 J** | 60 J | 2.0 J | <1.0 | 4.6 J | 0.42 J | 1.6 J | <1.0 | <1.0 |
| | 4/23/2013 | **87** | <1.0 | 33 | 0.96 J | <1.0 UJ | 4.0 | 0.23 J | 1.5 | <1.0 | <1.0 |
| | 10/30/2013 | **96** | **0.49 J** | 53 | 1.7 | <1.0 | 3.5 | 0.31 J | 1.4 | <1.0 | <1.0 UJ |
| | 4/16/2014 | **110** | <1.0 | 44 | 1.2 | <5.0 | 2.7 | <1.0 | 1.1 | <1.0 | <1.0 UJ |
| | 10/29/2014 | **130** | <1.0 | 63 | 2.3 | <5.0 UJ | 3.8 | <1.0 | 1.2 | <1.0 | <4.0 UJ |
| | 6/2/2015 | **130 J** | <1.0 | **75** | 2.9 | <5.0 UJ | 2.7 | <1.0 | 1.9 | <1.0 | <4.0 |
| | 10/20/2015 | **84** | <1.0 | 33 | 1.5 | <5.0 | 1.6 | <1.0 | 1.0 J | <1.0 | <4.0 |
| | 3/15/2016 | **140** | <1.0 | 68 | 2.8 | <5.0 | 2.5 | <1.0 | 1.9 | <1.0 | <4.0 |
| | 10/26/2016 | **230** | <1.0 | **110** | 6.0 | <5.0 | 1.9 | <1.0 | 2.8 | <1.0 | <4.0 |
| | 4/12/2017 | **120** | <1.0 | 57 | 2.5 | <5.0 UJ | 2.1 | <1.0 | 1.8 | <1.0 | <4.0 |

**TABLE 1**
**SUMMARY OF GROUNDWATER TESTING RESULTS - VOCS**
HP Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Trichloroethene (TCE) | Vinyl chloride | cis-1,2 Dichloroethene (DCE) | trans-1,2 Dichloroethylene | Chloroethane | Chloroform | 1,1- Dichloroethane (DCA) | 1,1-Dichloroethene | 1,2-Dichloropropane | Chloromethane |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fill and Alluvium Wells** | | | | | | | | | | | |
| **Puerto Rico Water Quality Standards or *MCLs*** | | 5.0 | 0.25 | *70* | 100 | NE | 57 | NE | 7.0 | 5.0 | NE |
| GZ-702U | 4/17/2014 | <1.0 | <1.0 | 0.35 J | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/30/2014 | 2.9 | <1.0 | 4.6 | <1.0 UJ | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 6/3/2015 | 0.66 J | <1.0 | 0.85 J | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/19/2015 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 3/11/2016 | 3.2 | <1.0 | 2.5 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 UJ |
| | 10/27/2016 | **14** | <1.0 | 4.7 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 4/12/2017 | **11** | <1.0 UJ | 11 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 |
| IW-1 | 3/16/2016 | **670** | **12** | **320** | 98 | <5.0 | 8.0 | 0.68 J | **17** | <1.0 | <4.0 |
| | 10/26/2016 | **110** | **9.2** | **140** | 35 | <5.0 | <1.0 | <1.0 | 6.4 | <1.0 | <4.0 |
| | 4/13/2017 | **46 J** | **14 J** | **480 J** | 35 J | <5.0 UJ | <1.0 UJ | <1.0 UJ | 3.1 J | <1.0 UJ | <4.0 UJ |
| OW-101 | 6/25/2010 | **1100** | <100 | **760** | **210** | <100 | <100 | <100 | <100 | <100 | <100 |
| | 4/21/2011 | **990** | **2.6** | **830** | 89 | <1.0 | <1.0 | 1.0 | **20 J** | <1.0 | <1.0 UJ |
| | 10/27/2011 | **830** | <20 | **600** | **160** | <20 | <20 | <20 | **15 J** | <20 | <20 |
| | 4/10/2012 | **700** | <20 | **550** | 88 | <20 | <20 | <20 | **8.2 J** | <20 | <20 |
| | 10/18/2012 | **36** | <20 | **950** | **120** | <20 | <20 | <20 | **9.2 J** | <20 | <20 |
| | 4/23/2013 | **1100** | <20 UJ | **920** | 56 | <20 | <20 | <20 | **11 J** | <20 | <20 |
| | 10/30/2013 | **980 J** | **11 J** | **1,300 J** | **230** | <20 | <20 | <20 | **17 J** | <20 | <20 UJ |
| | 4/16/2014 | **520** | **13** | **730** | **120** | <25 | <5.0 | <5.0 | **9.2** | <5.0 | <5.0 |
| | 10/28/2014 | **330** | **12** | **270** | 51 | <10.0 | <2.0 | <2.0 | 4.3 | <2.0 | <8.0 |
| | 6/2/2015 | **1600 J** | **13** | **1300** | **200** | <10 UJ | <2.0 | <2.0 | **19** | <2.0 | <8.0 |
| | 10/20/2015 | **2000** | **7.5 J** | **1400** | **200** | <50 | <10 | <10 | **14 J** | <10 | <40 |
| | 3/15/2016 | **3200** | <5.0 | **1800** | 32 | <25 | <5.0 | <5.0 | **11** | <5 | <20 |
| | 10/26/2016 | **630** | **13** | **540** | **160** | <10 | <2.0 | <2.0 | **13** | <2.0 | <8.0 |
| | 4/12/2017 | **2400** | <10 | **1600** | **220** | <50 UJ | <10 | <10 | **14** | <10 | <40 |
| OW-105 | 10/27/2010 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.30 JB | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/27/2010 | 0.34 J | <1.0 | <1.0 | <1.0 | <1.0 | 0.29 JB | <1.0 | <1.0 | <1.0 | 0.47 J |
| | 4/20/2011 | 0.60 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/24/2011 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/10/2012 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/17/2012 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 J |
| | 10/29/2014 | 1.7 | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 J |
| | 10/25/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/25/2016 | 0.65 J | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| OW-304U | 10/26/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/19/2011 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 10/25/2011 | <1.0 | <1.0 | 0.68 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/12/2012 | 0.35 J | <1.0 | 1.2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/17/2012 | 0.92 J | <1.0 UJ | 1.4 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ |
| | 4/23/2013 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 10/30/2013 | 0.32 J | **0.32 J** | 1.5 | <1.0 | 0.79 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ |
| | 4/17/2014 | <1.0 | <1.0 | 1.3 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/29/2014 | 0.81 J | <1.0 | 1.4 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/26/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| OW-305I | 6/25/2010 | **150** | **120** | **290** | 10 | <10 | <10 | <10 | <10 | <10 | <10 |
| | 4/19/2011 | **230** | **240** | **420** | 17 | <10 | <10 | <10 | <10 | <10 | <10 |
| | 10/26/2011 | **48** | **95** | **220** | 14 | <5.0 UJ | <5.0 | <5.0 | 1.9 J | <5.0 | <5.0 UJ |
| | 4/11/2012 | **100** | **65** | **280** | 12 | <10 | <10 | <10 | <10 | <10 | <10 |
| | 10/17/2012 | **27** | **52 J** | **200** | 9.2 | <5.0 UJ | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 UJ |
| | 4/23/2013 | **220** | **100 J** | **530** | 17 | <1.0 | <1.0 | 0.46 J | 2.0 | <1.0 | <1.0 |
| | 10/29/2013 | **54 J** | **91 J** | **280** | 14 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| | 10/29/2013 | **39 J** | **63 J** | **190 J** | 9.8 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 |
| | 4/15/2014 | **46** | **81** | **610** | 17 | <50 | <10 | <10 | <10 | <10 | <10 UJ |
| | 10/28/2014 | **12** | **99** | **390** | 14 | <5.0 | <1.0 | <1.0 | 1.9 | <1.0 | <4.0 |
| | 10/26/2016 | **19** | **120** | **510** | 16 | <10 | <2.0 | <2.0 | 2.1 J | <2.0 | <8.0 |
| OW-305U | 10/29/2010 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/20/2011 | <1.0 | **2.0** | <1.0 | <1.0 | 1.2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/26/2011 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/12/2012 | 0.46 J | **2.0** | 1.2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/18/2012 | 4.1 | <1.0 UJ | 3.9 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ |
| | 4/24/2013 | 0.17 J | <1.0 | 0.23 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/29/2013 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/15/2014 | **25** | **0.93 J** | 51 | 0.87 J | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ |
| | 10/29/2014 | 4.4 | <1.0 | 28 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/26/2016 | **96** | **5.2** | **180** | **5.7** | <5.0 | <1.0 | <1.0 | 0.69 J | <1.0 | <4.0 |
| OW-402U | 10/29/2010 | **22** | <1.0 | 17 | 0.37 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/20/2011 | **12** | <1.0 | 9.5 | 0.40 J | <1.0 | 0.98 J | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/25/2011 | **13** | <1.0 | 5.2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.27 J | <1.0 |
| | 4/10/2012 | **24** | <1.0 | 13 | 0.39 J | <1.0 | 0.23 J | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/15/2012 | **15** | <1.0 | 6.7 J | <1.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/23/2013 | **29** | <1.0 | 11 | 0.42 J | <1.0 UJ | 0.43 J | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/31/2013 | **14** | <1.0 | 31 | 0.89 J | <1.0 | 0.16 J | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/16/2014 | **39** | <1.0 | 17 | 0.55 J | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ |
| | 10/29/2014 | **84** | <1.0 UJ | 42 | 1.6 J | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 UJ |
| | 6/2/2015 | **53 J** | <1.0 | 22 | 0.89 J | <5.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/20/2015 | **59** | <1.0 | 21 | 1.1 | <5.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 |
| | 3/15/2016 | **62** | <1.0 | 19 | 1.2 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 3/15/2016 | **61** | <1.0 | 19 | 0.98 J | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/25/2016 | **71** | <1.0 | 35 | 1.6 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/25/2016 | **69** | <1.0 | 34 | 1.6 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 4/12/2017 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |

**TABLE 1**
**SUMMARY OF GROUNDWATER TESTING RESULTS - VOCS**
HP Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Trichloroethene (TCE) | Vinyl chloride | cis-1,2 Dichloroethene (DCE) | trans-1,2 Dichloroethylene | Chloroethane | Chloroform | 1,1- Dichloroethane (DCA) | 1,1-Dichloroethene | 1,2-Dichloropropane | Chloromethane |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fill and Alluvium Wells** | | | | | | | | | | | |
| **Puerto Rico Water Quality Standards or *MCLs*** | | 5.0 | 0.25 | *70* | 100 | NE | 57 | NE | 7.0 | 5.0 | NE |
| OW-404U | 9/9/2009 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 6/25/2010 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/15/2012 | <1.0 | <1.0 | <1.0 UJ | <1.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/15/2012 | <1.0 | <1.0 | <1.0 UJ | <1.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/27/2014 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 6/3/2015 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/19/2015 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 3/15/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/27/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 4/11/2017 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| WB-1U[3,4] | 6/25/2010 | 1.1 | <1.0 | 0.76 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/18/2011 | 1.0 | **0.30 J** | 2.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/19/2011 | 0.92 J | <1.0 | 1.9 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/25/2011 | 2.9 | <1.0 | 1.9 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/12/2012 | 4.2 | <1.0 | 4.9 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/16/2012 | 3.3 | <1.0 | 2.6 J | <1.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 |
| | 6/4/2013 | 4.1 | <2.0 UJ | 7.0 | <2.0 | <2.0 UJ | <2.0 | <2.0 | <2.0 | <2.0 UJ | <2.0 UJ |
| | 10/29/2013 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/15/2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 10/27/2014 | **120** | <1.0 | **150** | 2.9 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 6/3/2015 | **36 J** | <1.0 | 32 | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 6/3/2015 | **40** | <1.0 | 32 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/19/2015 | **7.6** | <1.0 | 3.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 |
| | 3/15/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/27/2016 | **130** | <1.0 | **87** | 2.5 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 4/11/2017 | **56** | **2.1** | **72** | 0.93 J | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| WB-2U | 3/8/2004 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/26/2010 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.27 JB | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/15/2012 | <1.0 | <1.0 | <1.0 UJ | <1.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/27/2014 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 6/3/2015 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/19/2015 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 3/15/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 10/27/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |
| | 4/12/2017 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 |

**Notes:**

1. All units are micrograms per liter (ug/L).
2. Wells were not sampled due to the wells being dry or having insufficient volumes of water.
3. On April 18, 2011, only one vial could be collected for VOCs at WB-1U before it went dry. The lab inadvertantly ran the additional vials collected for dilutions on April 19, 2011 as an additional sample.
4. Inadvertantly, no sample was collected from WB-1U during the April 2013 sampling event. The sample was, therefore, collected on June 4, 2013.
5. **Bold** values indicate the reference concentration exceeds the applicable Puerto Rico Water Quality Standards (PRWQS) or USEPA Maximum Contaminant Level (MCL) if no PRWQS is available. MCLs are indicated in *italics*.
6. "--" = analyte not tested for; "J" = the concentration reported was at or below the reporting limit; "B" = the analyte in question was detected in the associated laboratory blank; "UJ" = the analyte was detected above the reported sample quantitation limit; however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample; "E" = the reported value exceeds the calibration range; "<" = the compound was not detected above the method quantification limit shown; "NS" = no sample was taken because the well was dry or inaccessible; "NE" = no groundwater quality standard established; "DUP" = duplicate sample.

**TABLE 1**
SUMMARY OF GROUNDWATER TESTING RESULTS - VOCS
Hewlett-Packard Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Trichloroethene (TCE) | Vinyl chloride | cis-1,2 Dichloroethene (DCE) | trans-1,2 Dichloroethylene | Tetrachloroethene (PCE) | Bromoform | Chloroform | Dichlorodifluoromethane | 1,1- Dichloroethane (DCA) | 1,2-Dichloroethane | 1,1-Dichloroethene | 1,2-Dichloropropane | 1,2-Dichlorobenzene | 1,1,1-Trichloroethane (TCA) | 1,1,2-Trichloroethane | Chloromethane | MTBE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Saprolite Wells** | | | | | | | | | | | | | | | | | | |
| **Puerto Rico Water Quality Standards or *MCLs*** | | 5.0 | 0.25 | *70* | 100 | 5.0 | 43 | 57 | NE | NE | 3.8 | 7.0 | 5.0 | 420 | 200 | 5.0 | NE | NE |
| DEC-204O | 10/27/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- |
| | 4/20/2011 | 0.98 J | <1.0 | <1.0 | <1.0 | 3.3 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/27/2011 | 0.31 J | <1.0 | <1.0 | <1.0 | 2.6 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/12/2012 | <1.0 | <1.0 | <1.0 | <1.0 | 1.6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/16/2012 | 0.48 J | <1.0 | <1.0 UJ | <1.0 UJ | 2.2 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/23/2013 | 0.44 J | <1.0 | <1.0 | <1.0 | 1.9 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/30/2013 | 0.46 J | <1.0 | <1.0 | <1.0 | 1.9 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.46 J | <1.0 | <1.0 | -- |
| | 4/16/2014 | 0.56 J | <1.0 | <1.0 | <1.0 | 1.5 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | 0.11 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/28/2014 | 0.68 J | <1.0 | <1.0 | <1.0 | 1.5 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/28/2016 | <1.0 | <1.0 | <1.0 | <1.0 | 1.8 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| GZ-501L | 10/27/2010 | **8.9** | **0.67 J** | 24 | 0.36 J | <1.0 | <1.0 | 0.28 JB | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/27/2010 | **8.0** | **0.70 J** | 21 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.30 J | -- |
| | 4/18/2011 | **9.4** | **0.86 J** | 23 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/18/2011 | **9.3** | **1.0** | 23 | 0.25 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/24/2011 | 4.7 | **0.51 J** | 12 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | 0.22 J | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/11/2012 | 3.8 | <1.0 | 7.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.21 J | <1.0 | <1.0 | <1.0 | -- |
| | 10/17/2012 | **6.7** | <1.0 UJ | 5.4 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.20 J | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/25/2013 | **12** | **0.26 J** | 7.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.16 J | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/29/2013 | **21** | **0.36 J** | 11 | <1.0 | 0.40 J | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | 0.27 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/15/2014 | **22** | <1.0 | 13 | <1.0 | 0.68 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.41 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/29/2014 | **30** | <1.0 | 17 | <1.0 | 1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 6/3/2015 | **38** | <1.0 | 35 | <1.0 | 2.3 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/20/2015 | **35** | **0.80 J** | <1.0 | 1.9 J | <1.0 | <1.0 UJ | <5.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 3/11/2016 | **36** | <1.0 | 27 | <1.0 | 1.8 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 UJ | -- |
| | 10/27/2016 | **30** | **0.79 J** | 37 | <1.0 | 2.2 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.73 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 4/11/2017 | **31** | <1.0 | 41 | <1.0 | 2.2 | <1.0 | <1.0 | <5.0 | 0.55 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| GZ-502L | 10/28/2010 | **60** | **1.5** | **92** | 1.5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.79 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/21/2011 | **46** | **1.3 J** | 70 | 1.1 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.66 J | <1.0 | <1.0 | <1.0 | <1.0 | <2.0 UJ | -- |
| | 10/26/2011 | **26** | **0.96 J** | 48 | 0.68 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.43 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/11/2012 | **14** | **0.57 J** | 28 | 0.36 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/18/2012 | **11** | **0.51 J** | 19 | 0.31 J | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/24/2013 | **9.2** | **0.55 J** | 15 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.16 J | <1.0 | <1.0 | <1.0 | -- |
| | 10/29/2013 | **10** | **0.61 J** | 14 | 0.30 J | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | 0.39 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/15/2014 | **13** | **0.56 J** | 22 | 0.27 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.34 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/29/2014 | **14** | **0.83 J** | 17 | 0.55 J | 0.57 J | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.51 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/27/2016 | **26** | **2.9** | 43 | <1.0 | 1.7 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 1.2 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| GZ-503L | 10/29/2010 | **12** | **0.73 J** | 15 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/20/2011 | **13** | **0.81 J** | 13 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/27/2011 | **22** | **0.93 J** | 24 | 0.34 J | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | 0.27 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/11/2012 | **26** | **0.93 J** | 30 | 0.41 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.31 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/17/2012 | **26** | **1.5 J** | 27 | 0.61 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.27 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/24/2013 | **51** | **2.5** | 45 | 1.7 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.60 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/29/2013 | **58** | **4.7** | 55 | 2.2 | 0.35 J | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | 0.44 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/15/2014 | **94** | **7.0** | **90** | 4.2 | 1.8 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.81 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/28/2014 | **75** | **7.7** | **81** | 4.0 | 1.9 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 UJ | 0.78 J | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 6/3/2015 | **61** | **6.8** | **78** | 3.7 | 1.9 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 UJ | 0.75 J | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/20/2015 | **68** | **11** | **73** | 4.1 | 2.4 J | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.73 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 3/11/2016 | **46** | **6.7** | 45 | 2.8 | 2.3 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 UJ | -- |
| | 10/27/2016 | **69** | **7.8** | **81** | 4.5 | 3.5 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.96 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 4/11/2017 | **60** | **6.7** | **73** | 4.5 | 2.9 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.84 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| GZ-504L | 10/27/2010 | 0.92 J | <1.0 | 2.8 | <1.0 | <1.0 | <1.0 | 0.32 JB | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.39 J | -- |
| | 10/15/2012 | 3.1 | <1.0 | 20 J | <1.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/24/2013 | **7.1** | **0.26 J** | 41 | 0.44 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.24 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/30/2013 | **5.3** | <1.0 | 32 | 0.30 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/15/2014 | **5.4** | <1.0 | 28 | 0.34 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.17 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/30/2014 | **6.0** | <1.0 | 29 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 6/3/2015 | 1.7 | <1.0 | 3.8 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/19/2015 | **5.4** | <1.0 | 25 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 3/11/2016 | 0.64 J | <1.0 | 2.4 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 UJ | -- |
| | 10/27/2016 | 3.6 | <1.0 | 14 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 4/11/2017 | **12** | <1.0 | 32 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| GZ-505L | 6/28/2010 | <1.0 | **1.2** | 16 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/18/2011 | <1.0 | **1.1** | 9.5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/24/2011 | <1.0 | **1.2** | 6.5 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/11/2012 | 0.27 J | **0.50 J** | 6.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/17/2012 | <1.0 | **0.47 J** | 3.4 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/24/2013 | 0.98 J | **0.48 J** | 5.8 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/29/2013 | 0.76 J | **0.62 J** | 4.5 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/15/2014 | <1.0 | <1.0 | 3.7 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/28/2014 | <1.0 | <1.0 | 3.6 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/27/2016 | <1.0 | <1.0 | 0.94 J | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |

**TABLE 1**
SUMMARY OF GROUNDWATER TESTING RESULTS - VOCS
Hewlett-Packard Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Trichloroethene (TCE) | Vinyl chloride | cis-1,2 Dichloroethene (DCE) | trans-1,2 Dichloroethylene | Tetrachloroethene (PCE) | Bromoform | Chloroform | Dichlorodifluoromethane | 1,1- Dichloroethane (DCA) | 1,2-Dichloroethane | 1,1-Dichloroethene | 1,2-Dichloropropane | 1,2-Dichlorobenzene | 1,1,1-Trichloroethane (TCA) | 1,1,2-Trichloroethane | Chloromethane | MTBE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Saprolite Wells** | | | | | | | | | | | | | | | | | | |
| **Puerto Rico Water Quality Standards or *MCLs*** | | 5.0 | 0.25 | *70* | 100 | 5.0 | 43 | 57 | NE | NE | 3.8 | 7.0 | 5.0 | 420 | 200 | 5.0 | NE | NE |
| GZ-601L | 4/12/2012 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 10/16/2012 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | 4/25/2013 | <1.0 | <1.0 UJ | 0.22 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | 2.3 |
| | 10/30/2013 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/17/2014 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.38 J |
| | 10/30/2014 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | <1.0 |
| | 10/27/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| GZ-701L | 4/17/2014 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | 0.58 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/30/2014 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | <1.0 |
| | 6/3/2015 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/19/2015 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 3/11/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 UJ | -- |
| | 10/28/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 4/12/2017 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| IW-2 | 3/16/2016 | **55** | **3.2** | **130** | 2.1 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/25/2016 | <1.0 | <1.0 | 16 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 4/13/2017 | <1.0 UJ | <1.0 UJ | 11 J | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <5.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <4.0 UJ | -- |
| IW-3 | 3/16/2016 | **31** | <1.0 | 42 | <1.0 | 1.4 J | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/25/2016 | <1.0 | **6.1** | 8.7 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 4/13/2017 | <1.0 UJ | **1.5 J** | 4.7 J | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <5.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <4.0 UJ | -- |
| OW-1 | 10/27/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- |
| | 4/19/2011 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- |
| | 10/24/2011 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/11/2012 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/16/2012 | <1.0 | <1.0 | <1.0 UJ | <1.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/28/2014 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/28/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| OW-101L | 10/27/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- |
| | 4/20/2011 | **37** | **0.95 J** | 39 | 0.66 J | 0.47 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.25 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/26/2011 | **11** | **27** | **82** | 1.3 J | 1.3 J | <2.0 | <2.0 | <2.0 UJ | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | -- |
| | 4/10/2012 | 4.0 | **19** | **80** | 1.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.38 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/18/2012 | 2.8 | **11 J** | **92** | 1.1 | <1.0 | <1.0 | <1.0 | <1.0 UJ | 0.31 J | <1.0 | 0.60 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/23/2013 | **5.8** | **3.8** | **140** | 1.5 | <1.0 | <1.0 | <1.0 | <1.0 | 0.34 J | <1.0 | 0.76 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/30/2013 | <1.0 | **2.4** | **81** | 0.98 J | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | 0.58 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/16/2014 | 3.2 | **0.85 J** | **70** | 0.91 J | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | 0.60 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/28/2014 | 3.6 | **0.54 J** | **76** | 1.1 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 UJ | 0.63 J | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 6/2/2015 | 3.7 J | <1.0 | 38 | <1.0 | <1.0 UJ | <1.0 UJ | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/20/2015 | 2.7 J | <1.0 | 52 | 0.73 J | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 3/15/2016 | 3.2 | <1.0 | 54 | 0.90 J | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 3/15/2016 | 3.8 | <1.0 | 55 | 0.84 J | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/26/2016 | 3.6 | <1.0 | 55 | 1.1 | <1.0 | <1.0 | <1.0 | <5.0 | 0.60 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 4/11/2017 | 2.6 | <1.0 | 41 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| OW-102 | 10/28/2010 | <1.0 | <1.0 | 7.2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/17/2012 | 3.8 | <1.0 UJ | 3.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/23/2013 | 2.1 | <1.0 UJ | 1.3 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/31/2013 | 1.0 | <1.0 | 0.43 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/16/2014 | 2.0 | <1.0 | 2.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/16/2014 | 1.7 | <1.0 | 2.3 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/29/2014 | 3.5 | <1.0 | 2.3 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/25/2016 | 0.98 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/25/2016 | 0.90 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| OW-301 | 6/24/2010 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/21/2011 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/26/2011 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/11/2012 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/16/2012 | <1.0 | <1.0 | <1.0 UJ | <1.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/25/2013 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/30/2013 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/16/2014 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/28/2014 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/28/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| OW-304L | 6/24/2010 | **5700 J** | <200 | **910 J** | <200 | <200 | <200 | <200 | <200 UJ | <200 | <200 | <200 | <200 | <200 | <200 | <200 | <200 | -- |
| | 4/21/2011 | **4000** | **67** | **710** | 2.7 | **5.2** | <1.0 | 0.64 J | <1.0 | 6.3 | **9.1** | **15 J** | <1.0 | <1.0 | <1.0 | 1.0 | <1.0 UJ | -- |
| | 10/27/2011 | **2000** | **33 J** | **530** | <50 | <50 | <50 | <50 | <50 UJ | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | -- |
| | 10/27/2011 | **1800** | **29 J** | **520** | <50 | <50 | <50 | <50 | <50 UJ | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | -- |
| | 4/12/2012 | **1500** | **15 J** | **530** | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | -- |
| | 10/16/2012 | **1200** | **12 J** | **410** | <20 UJ | <20 | <20 | <20 | <20 | <20 | <20 | 5.1 J | <20 | <20 | <20 | <20 | <20 | -- |
| | 4/25/2013 | **1700** | <50 UJ | **530** | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 UJ | -- |
| | 10/31/2013 | **1200** | **15** | **550** | 1.8 | 1.3 | <1.0 | 0.17 J | <1.0 | 5.8 | <1.0 | 5.8 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/17/2014 | **1600** | **33** | **590** | 5.3 J | 3.5 J | <10 | 4.3 J | <10 | 12 | <10 | **10** | <10 | <10 | <10 | <10 | 4 J | -- |
| | 4/17/2014 | **1600** | **28** | **510** | 3.5 J | 3.4 J | <10 | <10 | <10 | 7.1 J | **4.6 J** | 6.7 J | <10 | <10 | <10 | <10 | <10 | -- |
| | 10/29/2014 | **810** | **20** | **420** | <5.0 | <5.0 | <5.0 | <5.0 | <25.0 | 5 | <5.0 | 5.6 | <5.0 | <5.0 | <5.0 UJ | <5.0 | <20.0 | -- |
| | 6/2/2015 | **850 J** | **21** | **350** | <5.0 | <5.0 UJ | <5.0 UJ | <5.0 | <25 | 5.3 | <5.0 | 4.8 J | <5.0 | <5.0 | <5.0 | <5.0 | <20 | -- |
| | 10/20/2015 | **580** | **8.3** | **260** | 1.8 | 0.83 J | <1.0 | <1.0 | <5.0 | 4.3 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 3/15/2016 | **530 J** | **17** | **300** | 1.6 J | <2.0 UJ | <2.0 | <2.0 | <10 UJ | 4.1 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | <8.0 | -- |
| | 10/26/2016 | **560** | **11** | **280** | 1.6 | 0.85 J | <1.0 | <1.0 | <5.0 | 4.8 | <1.0 | 3.4 | <1.0 | <1.0 | <1..0 | <1.0 | <4.0 | -- |
| | 4/12/2017 | **530 J** | **13 J** | **250 J** | 1.5 J | <2.0 UJ | <2.0 UJ | <2.0 UJ | <10 UJ | 3.9 J | <2.0 UJ | <2.0 UJ | <2.0 UJ | <2.0 UJ | <2.0 UJ | <2.0 UJ | <8.0 UJ | -- |
| | 6/26/2017 | **590** | **16** | **260** | 1.7J | 1.0 J | <2.0 | <2.0 | <10 | 3.9 | <2.0 | 3.5 | <2.0 | <2.0 | <2.0 | <2.0 | <8.0 | -- |

**TABLE 1**
SUMMARY OF GROUNDWATER TESTING RESULTS - VOCS
Hewlett-Packard Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Trichloroethene (TCE) | Vinyl chloride | cis-1,2 Dichloroethene (DCE) | trans-1,2 Dichloroethylene | Tetrachloroethene (PCE) | Bromoform | Chloroform | Dichlorodifluoromethane | 1,1- Dichloroethane (DCA) | 1,2-Dichloroethane | 1,1-Dichloroethene | 1,2-Dichloropropane | 1,2-Dichlorobenzene | 1,1,1-Trichloroethane (TCA) | 1,1,2-Trichloroethane | Chloromethane | MTBE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Saprolite Wells** | | | | | | | | | | | | | | | | | | |
| **Puerto Rico Water Quality Standards or *MCLs*** | | 5.0 | 0.25 | *70* | 100 | 5.0 | 43 | 57 | NE | NE | 3.8 | 7.0 | 5.0 | 420 | 200 | 5.0 | NE | NE |
| OW-307 | 10/29/2010 | **31** | <1.0 | 49 | 0.57 J | <1.0 | <1.0 | <1.0 | 0.66 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/21/2011 | **100** | **22** | **170** | 2.2 | <1.0 | <1.0 | <1.0 | 0.63 J | <1.0 | <1.0 | 0.27 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/25/2011 | **380** | **4.4 J** | **260** | 3.9 J | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | -- |
| | 4/10/2012 | **640** | **6.1 J** | **550** | 6.5 J | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | -- |
| | 4/10/2012 | **640** | **7.6 J** | **560** | 6.5 J | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | -- |
| | 10/18/2012 | **710** | **4.4 J** | **540** | 9.2 J | <10 | <10 | <10 | <10 UJ | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 UJ | -- |
| | 10/18/2012 | **730** | **3.5 J** | **540** | 8.7 J | <10 | <10 | <10 | <10 UJ | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 UJ | -- |
| | 4/23/2013 | **300** | **9.3 J** | **280** | 3.6 | <1.0 | <1.0 | <1.0 | <1.0 UJ | 0.41 J | <1.0 | 0.64 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/23/2013 | **360** | **9.7 J** | **340** | 3 | <1.0 | <1.0 | <1.0 | <1.0 UJ | 0.38 J | <1.0 | 0.73 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/31/2013 | **480** | **12** | **540** | 6.6 J | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | -- |
| | 4/16/2014 | **930** | **1.9 J** | **500** | 7.3 | <5.0 | <5.0 | <5.0 | <5.0 UJ | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 UJ | -- |
| | 10/29/2014 | **1400 J** | <5.0 | **840 J** | 10 | <5.0 | <5.0 | <5.0 | <25.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 UJ | <5.0 | <20.0 | -- |
| | 10/29/2014 | **1100 J** | <4.0 | **640 J** | 10 | <4.0 | <4.0 | <4.0 | <20.0 | <4.0 | <4.0 | <4.0 | <4.0 | <4.0 | <4.0 | <4.0 | <16.0 UJ | -- |
| | 6/2/2015 | **360** | <5.0 | **280** | 3.8 J | <5.0 UJ | <5.0 | <5.0 | <25 | <5 UJ | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <20 | -- |
| | 10/19/2015 | **260** | **5.9** | **200** | 3.6 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.94 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/19/2015 | **260** | **6** | **200** | 3.6 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.75 J | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 J | -- |
| | 3/15/2016 | **200** | <1.0 | **140** | 1.9 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/26/2016 | **560** | **38** | **520** | 12 | <2.0 | <2.0 | <2.0 | <10 | <2.0 | <2.0 | 1.6 J | <2.0 | <2.0 | <2.0 | <2.0 | <8.0 | -- |
| | 4/12/2017 | **36** | **66** | **370** | 7.1 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| OW-401 | 6/3/2003 | **10** | **0.58 J** | 9.5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.49 J | 1.2 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/28/2010 | **29** | **1.3** | 53 | 0.79 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.38 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/18/2012 | 4.1 | <1.0 UJ | 8.2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/28/2014 | 2.3 | <1.0 | 37 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/26/2016 | **19** | **0.79 J** | 44 | 0.87 J | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.73 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| OW-402L | 10/29/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- |
| | 4/20/2011 | **36** | <1.0 | 29 | 0.40 J | 2.6 | <1.0 | <1.0 | 0.69 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/25/2011 | **48** | <1.0 | 43 | 0.55 J | **6.7** | <1.0 | <1.0 | 2.1 | <1.0 | <1.0 | 0.36 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/10/2012 | **54** | **0.76 J** | **80** | 0.94 J | **12** | <1.0 | 0.24 J | 1.3 | <1.0 | <1.0 | 0.79 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/15/2012 | **42** | **0.95 J** | **91 J** | 1.3 J | **12** | <1.0 | 0.26 J | 1.6 | 0.52 J | <1.0 | 0.88 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/23/2013 | **36** | **0.71 J** | **80** | 1.1 | **11** | <1.0 | 0.25 J | 1.2 | 0.50 J | <1.0 | 0.77 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/30/2013 | **33** | **0.81 J** | **77** | 1.3 | **10** | <1.0 | 0.28 J | 1.2 | <1.0 | <1.0 | 0.83 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/16/2014 | **34** | **0.38 J** | 49 | 0.68 J | **12** | <1.0 | 0.34 J | 0.77 J | 0.49 J | <1.0 | 0.52 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/29/2014 | **28** | **0.92 J** | 50 | 0.98 J | **5.6** | <1.0 | <1.0 | <5.0 | 0.90 J | <1.0 | 0.61 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 UJ | -- |
| | 10/25/2016 | **15** | <1.0 | 33 | <1.0 | 3.9 | <1.0 | <1.0 | <5.0 | 0.59 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/25/2016 | **15** | <1.0 | 34 | 0.74 J | 3.9 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| OW-403L | 10/29/2010 | **1400** | <100 | **89 J** | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | -- |
| | 4/21/2011 | **520** | <10 | 64 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | -- |
| | 10/26/2011 | **370 J** | <10 | **150 J** | <10 | 2.6 J | <10 UJ | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 UJ | -- |
| | 4/10/2012 | **210** | <10 | **96** | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | -- |
| | 10/16/2012 | **140** | **1.7 J** | **74** | 1.1 J | 1.2 J | <2.0 | <2.0 | 3.6 | <2.0 | <2.0 | 0.60 J | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | -- |
| | 10/16/2012 | **150** | **1.5 J** | **73** | 1.2 J | 1.4 J | <2.0 | <2.0 | 1.7 J | 0.57 J | <2.0 | 0.56 J | <2.0 | <2.0 | <2.0 | <2.0 | <2.0 | -- |
| | 4/23/2013 | **120** | **2.1** | **71** | 0.87 J | 1.1 | <1.0 | <1.0 | 4.4 | 0.76 J | <1.0 | 0.62 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/30/2013 | **85** | **3.6** | 55 | 0.88 J | 0.98 J | <1.0 UJ | <1.0 | 5.9 | 0.81 J | <1.0 | 0.64 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/30/2013 | **89 J** | **3.6 J** | 58 J | 0.84 J | 1.1 | <1.0 UJ | <1.0 | 5.9 | 0.87 J | <1.0 | 0.73 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/16/2014 | **66** | **2.0** | 47 | 0.53 J | 1.1 | <1.0 | <1.0 | 4.7 J | 0.92 J | <1.0 | 0.47 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/29/2014 | **57** | **2.5** | 36 | 0.65 J | 0.87 J | <1.0 | <1.0 | 9.4 | 0.99 J | <1.0 | 0.64 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 UJ | -- |
| | 10/29/2014 | **59** | **2.8** | 37 | 0.51 J | 0.91 J | <1.0 | <1.0 | 9.4 | 1.1 | <1.0 | 0.56 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 UJ | -- |
| | 10/25/2016 | **30** | **1.8** | 21 | <1.0 | 0.65 J | <1.0 | <1.0 | 14 | 1.5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| OW-404L | 9/9/2009 | 2.9 | <1.0 | 7.6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 6/25/2010 | 0.92 J | <1.0 | 3.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/15/2012 | <1.0 | <1.0 | <1.0 UJ | <1.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/27/2014 | 4.4 | <1.0 UJ | 10 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 UJ | -- |
| | 10/27/2016 | 3.0 | <1.0 | 4.1 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| OW-405 | 6/24/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- |
| | 10/28/2010 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/17/2012 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | 0.29 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/29/2014 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/28/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| OW-407 | 6/3/2003 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/27/2010 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 4.8 B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/16/2012 | <1.0 | <1.0 | <1.0 UJ | <1.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/28/2014 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/28/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| OW-408 | 6/24/2010 | **10** | <1.0 | 68 | 17 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.3 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/27/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- |
| | 10/16/2012 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- |
| | 4/25/2013 | **27** | **41 J** | **230** | 17 | <1.0 | <1.0 | 0.65 J | <1.0 | <1.0 | <1.0 | 0.88 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/30/2013 | 1.0 | **3.1** | **75** | 19 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | 1.9 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/16/2014 | 1.7 | **1.8** | 40 | 11 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | 1.2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/28/2014 | 3.1 | **3.0** | 62 | 19 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 UJ | 1.7 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/28/2016 | **25** | <1.0 | 19 | 7.5 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.73 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |

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Hewlett-Packard Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Trichloroethene (TCE) | Vinyl chloride | cis-1,2 Dichloroethene (DCE) | trans-1,2 Dichloroethylene | Tetrachloroethene (PCE) | Bromoform | Chloroform | Dichlorodifluoromethane | 1,1- Dichloroethane (DCA) | 1,2-Dichloroethane | 1,1-Dichloroethene | 1,2-Dichloropropane | 1,2-Dichlorobenzene | 1,1,1-Trichloroethane (TCA) | 1,1,2-Trichloroethane | Chloromethane | MTBE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Saprolite Wells** | | | | | | | | | | | | | | | | | | |
| **Puerto Rico Water Quality Standards or *MCLs*** | | 5.0 | 0.25 | *70* | 100 | 5.0 | 43 | 57 | NE | NE | 3.8 | 7.0 | 5.0 | 420 | 200 | 5.0 | NE | NE |
| WB-1L | 10/29/2010 | **60** | <5.0 | **110** | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | -- |
| | 4/18/2011 | **56** | <1.0 | **110** | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/25/2011 | **65** | <5.0 | **79** | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | -- |
| | 4/12/2012 | **80** | <5.0 | **130** | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | -- |
| | 10/15/2012 | **69** | <5.0 | **110 J** | 1.5 J | <5.0 | <5.0 | <5.0 UJ | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | -- |
| | 4/24/2013 | **73** | **0.57 J** | **120** | 1.2 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/29/2013 | **81** | **0.60 J** | **120** | 1.5 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | 0.55 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/15/2014 | **76** | <1.0 | **110** | 1.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.51 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/27/2014 | **130** | **0.83 J** | **150** | 2.4 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.65 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 6/3/2015 | **170** | <1.0 | **190** | 3.4 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/19/2015 | **170** | **3.6** | **200** | 2.7 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.78 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/19/2015 | **190** | **3.1** | **190** | 2.4 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 3/15/2016 | **170** | **4.2** | **210** | 3.4 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 1.1 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/27/2016 | **150** | **3.6** | **140** | 2.7 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 1.4 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 4/11/2017 | **100** | **2.7** | **150** | 2.9 J | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 | 0.80 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 4/11/2017 | **99** | **1.9** | **140** | 2.8 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.87 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| WB-2L | 6/28/2010 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/18/2011 | **24** | **0.84 J** | 44 | 0.46 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.35 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 10/25/2011 | **27** | **0.94 J** | 50 | 0.62 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.32 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/11/2012 | **29** | **0.89 J** | **81** | 1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.42 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/15/2012 | 0.97 J | <1.0 | 2.0 J | <1.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/24/2013 | **17** | **0.36 J** | 38 | 0.41 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.25 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/29/2013 | **18** | **0.88 J** | **89** | 1.2 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | 0.52 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/15/2014 | 3.0 | <1.0 | 6.9 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/15/2014 | 3.0 | <1.0 | 7.5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/27/2014 | **17** | **0.53 J** | 62 | 0.99 J | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.51 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 6/3/2015 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/19/2015 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | 2.6 | 17 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 3/15/2016 | **10** | <1.0 | 42 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/27/2016 | **9.4** | <1.0 | 26 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 4/11/2017 | **3.5** | <1.0 | 52 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| WB-3L | 10/27/2010 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.37 JB | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/17/2012 | **10** | **0.90 J** | 13 | 0.70 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/24/2013 | **21** | **0.98 J** | 25 | 1.0 | 0.80 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.29 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/29/2013 | **29** | **1.9** | 40 | 1.4 | 1.3 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | 0.37 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/15/2014 | **59** | **2.9** | **75** | 2.6 | 3.7 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.48 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/28/2014 | **63** | **3.1** | **74** | 3.0 | 4.7 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.63 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 6/3/2015 | **74** | **3.4 J** | **90** | 3.0 | **5.3** | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 UJ | 0.92 J | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 6/3/2015 | **77** | **4.3 J** | **94** | 3.0 | **5.7** | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <4.0 | -- |
| | 10/19/2015 | **79** | **5.2** | **83** | 3.3 | 4.6 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.71 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 3/15/2016 | **75** | **7.6** | **98** | 3.6 | 4.7 J | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.77 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 3/15/2016 | **83** | **7.6** | **83** | 3.4 | 4.7 J | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.75 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/27/2016 | **74** | **4.4** | **92** | 3.6 | 5.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.86 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 4/12/2017 | **65 J** | **3.6 J** | **85 J** | 3.7 J | 3.7 J | <1.0 UJ | <1.0 UJ | <5.0 UJ | <1.0 UJ | <1.0 UJ | 0.72 J | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <4.0 UJ | -- |
| | 4/12/2017 | **61** | **3.3** | **80** | 3.5 | 3.6 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.72 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 6/27/2017 | **70** | **4.1** | **94** | 3.9 | 5.3 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.97 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| WB-4L | 6/28/2010 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/17/2012 | 2.9 | <1.0 UJ | 1.9 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | -- |
| | 4/24/2013 | **12** | **0.34 J** | 6.3 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/29/2013 | **27** | **0.41 J** | 17 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | 0.30 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 4/15/2014 | **63** | **0.45 J** | 38 | 0.42 J | 0.33 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.41 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/28/2014 | **79** | <1.0 | 39 | 0.66 J | 0.65 J | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.64 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 6/2/2015 | **85 J** | <1.0 | 48 | <1.0 | 0.93 J | <1.0 UJ | <1.0 | <5.0 | <1.0 | <1.0 | 0.80 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/19/2015 | **92** | <1.0 | 48 | <1.0 | 1.2 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.85 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/19/2015 | **89** | <1.0 | 45 | 0.71 J | 1.1 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 3/15/2016 | **110** | <1.0 | 56 | <1.0 | 1.4 J | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.87 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 3/15/2016 | **110** | <1.0 | 56 | <1.0 | 1.4 J | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.89 J | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 10/27/2016 | **110** | **0.71 J** | 63 | 0.82 J | 2.5 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 1.1 | <1.0 | <1.0 | <1.0 | <1.0 | <4.0 | -- |
| | 4/13/2017 | **120 J** | <1.0 UJ | 53 J | 0.71 J | 1.9 J | <1.0 UJ | <1.0 UJ | <5.0 UJ | <1.0 UJ | <1.0 UJ | 1.1 J | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <4.0 UJ | -- |

**Notes:**

1. All units are micrograms per liter (ug/L).
2. Wells OW-1 (in April 2011) and OW-408 (in June 2009, October 2010, and October 2012) were not sampled due to insufficient volume of water.
3. **Bold** values indicate the reference concentration exceeds the applicable Puerto Rico Water Quality Standard (PRWQS) or USEPA Maximum Contaminant Level (MCL) if no PRWQS is available. MCLs are indicated by *italics* .
4. "--" = analyte not tested for; "J" = the concentration reported was at or below the reporting limit; "B" = the analyte in question was detected in the associated laboratory blank; "UJ" = the analyte was detected above the reported sample quantitation limit; however, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample; "<" = the compound was not detected above the method quantification limit shown; "NS" = no sample was taken because the well was dry or inaccessible; "NE" = no groundwater quality standard established; "DUP" = duplicate sample.

**TABLE 1**
SUMMARY OF GROUNDWATER TESTING RESULTS - VOCS
Hewlett-Packard Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Trichloroethene (TCE) | Vinyl chloride | cis-1,2 Dichloroethene (DCE) | trans-1,2 Dichloroethylene | Tetrachloroethene (PCE) | Chloroform | Dichlorodifluoromethane | 1,1-Dichloroethane (DCA) | 1,2-Dichloroethane | 1,1-Dichloroethene | 1,2-Dichlorobenzene | 1,4-Dichlorobenzene | Methylene chloride | 1,1,2-Trichloroethane | MTBE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Bedrock Wells** | | | | | | | | | | | | | | | | |
| **Puerto Rico Water Quality Standards or *MCLs*** | | 5.0 | 0.25 | *70* | 100 | 5.0 | 57 | NE | NE | 3.8 | 7.0 | 420 | 63 | 46 | 5.0 | NE |
| BR-308 | 6/25/2010 | **14** | **0.40 J** | 26 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | 0.29 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/28/2010 | 4.9 | <1.0 | 10 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.25 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/18/2012 | 4.5 | <1.0 UJ | 14 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/28/2014 | **12** | <1.0 | 33 | 0.53 J | 0.94 J | <1.0 | <5.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/26/2016 | **14** | <1.0 | 41 | <1.0 UJ | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <10 | <1.0 | -- |
| DEC-203R | 10/27/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | -- |
| | 4/19/2011 | <1.0 | <1.0 | <1.0 | <1.0 | 0.46 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/27/2011 | 0.34 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/12/2012 | 0.32 J | <1.0 | <1.0 | <1.0 | 0.28 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/16/2012 | 0.48 J | <1.0 | <1.0 | <1.0 | 0.28 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/28/2014 | 1.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/28/2016 | 0.86 J | <1.0 | <1.0 | <1.0 | 0.57 J | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <10 | <1.0 | -- |
| GZ-504R | 10/28/2010 | 1.9 | <1.0 | 7.9 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/19/2011 | 3.7 | **0.46 J** | 16 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/25/2011 | 1.7 | <1.0 | 5.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.54 J | 0.23 J | <5.0 UJ | <1.0 | -- |
| | 10/25/2011 | 1.8 | <1.0 | 5.7 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.55 J | 0.27 J | <5.0 UJ | <1.0 | -- |
| | 4/11/2012 | 1.5 | <1.0 | 5.5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.54 J | 0.28 J | <5.0 | <1.0 | -- |
| | 10/15/2012 | 1.5 | <1.0 | 3.3 J | <1.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | 0.44 J | 0.28 J | <5.0 | <1.0 | -- |
| | 4/24/2013 | 4.6 | <1.0 | 4.7 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.39 J | <1.0 | <5.0 | <1.0 | -- |
| | 10/30/2013 | **6.5** | <1.0 | 3.5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.21 J | <1.0 | <5.0 | <1.0 | -- |
| | 4/15/2014 | **14** | <1.0 | 7.6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.17 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/30/2014 | **21** | <1.0 | 11 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 6/3/2015 | **26** | <1.0 | 19 | <1.0 | 0.87 J | <1.0 | <5.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/19/2015 | **30** | <1.0 | 19 | <1.0 | 1.2 J | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 3/11/2016 | **30** | <1.0 | 15 | <1.0 | 0.92 J | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/27/2016 | **26** | <1.0 | 21 | <1.0 | 0.73 J | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <10 | <1.0 | -- |
| | 4/11/2017 | **25** | <1.0 | 22 | <1.0 | 1.1 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <10 | <1.0 | -- |
| GZ-505R | 6/28/2010 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/17/2012 | **61** | <1.0 | 43 | 0.55 J | 0.32 J | <1.0 | <1.0 | <1.0 | <1.0 | 0.48 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/24/2013 | **68** | <1.0 | **73** | 0.69 J | 0.65 J | <1.0 | <1.0 | <1.0 | <1.0 | 0.62 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/30/2013 | **59** | <1.0 | **87** | 0.80 J | 0.58 J | <1.0 | <1.0 | <1.0 | <1.0 | 0.75 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/15/2014 | **91** | <1.0 | **84** | 0.66 J | 1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | 0.73 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/28/2014 | **140** | <1.0 | **97** | 1.0 | 2.1 | <1.0 | <5.0 | <1.0 | <1.0 UJ | 1.5 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 6/2/2015 | **92** | <1.0 | **100** | 1.1 | 1.4 J | <1.0 | <5.0 | <1.0 UJ | <1.0 | 1.5 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/19/2015 | **130** | <1.0 | **82** | 0.87 J | 2.7 | <1.0 | <5.0 | <1.0 | <1.0 | 1.4 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 3/15/2016 | **81** | <1.0 | **100** | <1.0 | 1.2 J | <1.0 | <5.0 | <1.0 | <1.0 | 1.2 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/27/2016 | **160** | <1.0 | **91** | 1.1 | 3.6 | <1.0 | <5.0 | <1.0 | <1.0 | 1.4 | <1.0 | <1.0 | <10 | <1.0 | -- |
| | 4/12/2017 | **120 J** | <1.0 UJ | **74 J** | 1 UJ | 2.6 J | <1.0 UJ | <5.0 UJ | <1.0 UJ | <1.0 UJ | 1.4 J | <1.0 UJ | <1.0 UJ | <10 UJ | <1.0 UJ | -- |
| | 4/12/2017 | **130** | <1.0 UJ | **72** | 1.1 | 2.7 J | <1.0 | <5.0 UJ | <1.0 | <1.0 | 1.6 J | <1.0 | <1.0 | <10 | <1.0 | -- |
| | 6/27/2017 | **120** | **1.5** | **79** | 1.4 | 2.8 | <1.0 | <5.0 | <1.0 | <1.0 | 1.4 | <1.0 | <1.0 | <10 | <1.0 | -- |
| GZ-506R | 10/29/2010 | 1.5 | <1.0 | 0.98 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/19/2011 | 1.0 | <1.0 | 5.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | -- |
| | 10/27/2011 | **26** | <1.0 | 5.1 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/12/2012 | **88** | <1.0 | 16 | <1.0 | 0.26 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/16/2012 | **130** | <5.0 | 28 J | <5.0 UJ | <5.0 | <5.0 UJ | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <25 | <5.0 | -- |
| | 4/25/2013 | **220** | **0.29 J** | 56 | 0.91 J | 1.3 | 0.42 J | <10.0 | 0.59 J | <1.0 | 0.36 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/31/2013 | **94** | 0.24 J | 56 | 0.88 J | 0.68 J | 0.31 J | 0.96 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/17/2014 | **120** | <1.0 | 52 | 0.83 J | 0.76 J | 0.28 J | 0.72 J | 0.65 J | 0.20 J | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/29/2014 | **64** | **1.2** | 50 | 0.80 J | <1.0 | <1.0 | <5.0 | 0.71 J | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 6/2/2015 | **54 J** | <1.0 | 45 | 0.68 J | <1.0 UJ | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/20/2015 | **64** | <1.0 | 36 | 0.68 J | 0.60 J | <1.0 | <5.0 | 0.71 J | <1.0 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 3/15/2016 | **38** | <1.0 | 18 | <1.0 | <1.0 UJ | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/25/2016 | **30** | <1.0 | 27 | <1.0 | <1.0 | <1.0 | 3.6 J | 0.76 J | <1.0 | <1.0 | <1.0 | <1.0 | <10 | <1.0 | -- |
| | 4/12/2017 | **11** | <1.0 UJ | 22 | <1.0 | <1.0 UJ | <1.0 | <5.0 UJ | 0.79 J | <1.0 | <1.0 UJ | <1.0 | <1.0 | <10 | <1.0 | -- |
| GZ-601R | 4/12/2012 | **42** | **1.6** | 38 | 0.29 J | <1.0 | <1.0 | <1.0 | 0.84 J | <1.0 | 0.51 J | <1.0 | <1.0 | <5.0 | <1.0 | 33 |
| | 10/16/2012 | **11** | **1.1** | 40 | 0.36 J | <1.0 | <1.0 | <1.0 UJ | 0.85 J | <1.0 | 0.90 J | <1.0 | <1.0 | <5.0 | <1.0 | 160 J |
| | 4/25/2013 | 1.7 | **1.1 J** | 43 | 0.28 J | <1.0 | <1.0 | <1.0 | 0.83 J | <1.0 | 0.71 J | <1.0 | <1.0 | <5.0 | <1.0 | 130 |
| | 10/30/2013 | 0.69 J | **1.0** | 44 J | 0.44 J | <1.0 | <1.0 | <1.0 | 0.82 J | <1.0 | 0.84 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/17/2014 | 2.4 | **0.58 J** | 32 | 0.27 J | <1.0 | <1.0 | <1.0 | 0.67 J | <1.0 | 0.60 J | <1.0 | <1.0 | <5.0 | <1.0 | 110 |
| | 10/30/2014 | **11** | **0.92 J** | 27 | <1.0 UJ | <1.0 | <1.0 | <5.0 | 0.73 J | <1.0 | 0.8 J | <1.0 | <1.0 | <5.0 | <1.0 | 92 |
| | 6/3/2015 | 2.3 | <1.0 | 23 | <1.0 | <1.0 | <1.0 | <5.0 UJ | 0.72 J | <1.0 UJ | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/19/2015 | 2.7 | <1.0 | 23 | <1.0 | <1.0 UJ | <1.0 | <5.0 | 0.73 J | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 3/11/2016 | 0.86 J | **0.86 J** | 24 | <1.0 | <1.0 | <1.0 | <5.0 UJ | 0.66 J | <1.0 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/27/2016 | 0.76 J | **2.1** | 28 | <1.0 | <1.0 | <1.0 | <5.0 | 0.84 J | <1.0 | 0.68 J | <1.0 | <1.0 | <10 | <1.0 | -- |
| | 4/12/2017 | 1.9 | <1.0 UJ | 32 | <1.0 | <1.0 UJ | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <10 | <1.0 | -- |
| GZ-701R | 4/17/2014 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.29 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/30/2014 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 |
| | 6/3/2015 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/19/2015 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 3/11/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/28/2016 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <10 | <1.0 | -- |
| | 4/12/2017 | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <5.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <1.0 UJ | <10 UJ | <1.0 UJ | -- |
| | 6/26/2017 | 3.9 | <1.0 | 1.2 | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <10 | <1.0 | -- |
| GZ-702R | 10/30/2014 | **74** | **1.1** | 13 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.72 J | <1.0 | <1.0 | <5.0 | <1.0 | 7.5 |
| | 6/3/2015 | **80** | <1.0 | 14 | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/19/2015 | **75** | <1.0 | 12 | <1.0 | <1.0 UJ | <1.0 | <5.0 | <1.0 | <1.0 | 0.72 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 3/11/2016 | **71** | **1.3** | 24 | <1.0 | <1.0 | <1.0 | <5.0 UJ | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/27/2016 | **29** | **1.7 J** | 47 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 1.1 | <1.0 | <1.0 | <10 | <1.0 | -- |
| | 4/12/2017 | **22 J** | <1.0 UJ | 43 J | <1.0 UJ | <1.0 UJ | <1.0 UJ | <5.0 UJ | <1.0 UJ | <1.0 UJ | 0.68 J | <1.0 UJ | <1.0 UJ | <10 UJ | <1.0 UJ | -- |
| | 6/26/2017 | **17** | <1.0 | 42 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <10 | <1.0 | -- |

**TABLE 1**
SUMMARY OF GROUNDWATER TESTING RESULTS - VOCS
Hewlett-Packard Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Trichloroethene (TCE) | Vinyl chloride | cis-1,2 Dichloroethene (DCE) | trans-1,2 Dichloroethylene | Tetrachloroethene (PCE) | Chloroform | Dichlorodifluoromethane | 1,1-Dichloroethane (DCA) | 1,2-Dichloroethane | 1,1-Dichloroethene | 1,2-Dichlorobenzene | 1,4-Dichlorobenzene | Methylene chloride | 1,1,2-Trichloroethane | MTBE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Bedrock Wells** | | | | | | | | | | | | | | | | |
| **Puerto Rico Water Quality Standards or *MCLs*** | | 5.0 | 0.25 | *70* | 100 | 5.0 | 57 | NE | NE | 3.8 | 7.0 | 420 | 63 | 46 | 5.0 | NE |
| GZ-703R | 4/17/2014 | **230** | <2.0 | 25 | <2.0 | 2.1 | <2.0 | <2.0 | <2.0 | <2.0 | 2.4 | <2.0 | <2.0 | <10 | <2.0 | -- |
| | 10/29/2014 | **250** | <1.0 | 29 | <1.0 | 3.3 | <1.0 | <5.0 | <1.0 | <1.0 | 3.5 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 6/2/2015 | **230** | <1.0 | 30 | <1.0 | 2.3 J | <1.0 | <5.0 | <1.0 UJ | <1.0 | 3.2 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/19/2015 | **190** | <1.0 | 34 | <1.0 | 2.5 | <1.0 | <5.0 | <1.0 | <1.0 | 2.5 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 3/15/2016 | **170** | <1.0 | 45 | <1.0 | 2.0 J | <1.0 | <5.0 | <1.0 | <1.0 | 2.5 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/28/2016 | **140** | <1.0 | 28 | <1.0 | 1.7 | <1.0 | <5.0 UJ | <1.0 | <1.0 | 2.2 | <1.0 | <1.0 | <10 | <1.0 | -- |
| | 4/12/2017 | **99 J** | <1.0 UJ | 33 J | <1.0 UJ | 0.95 J | <1.0 UJ | <5.0 UJ | <1.0 UJ | <1.0 UJ | 1.6 J | <1.0 UJ | <1.0 UJ | <10 UJ | <1.0 UJ | -- |
| | 4/12/2017 | **100 J** | <1.0 UJ | 33 J | <1.0 UJ | <1.0 UJ | <1.0 UJ | <5.0 UJ | <1.0 UJ | <1.0 UJ | 1.7 J | <1.0 UJ | <1.0 UJ | <10 UJ | <1.0 UJ | -- |
| | 6/26/2017 | **120** | <1.0 | 39 | <1.0 | 1.5 | <1.0 | <5.0 | <1.0 | <1.0 | 1.7 | <1.0 | <1.0 | <10 | <1.0 | -- |
| OW-304R | 6/24/2010 | **1300** | <100 | **180** | <100 | <100 | <100 | <100 UJ | <100 | <100 | <100 | <100 | <100 | <500 | <100 | -- |
| | 6/24/2010 | **1100** | **33 J** | **160** | <100 | <100 | <100 | <100 UJ | <100 | <100 | <100 | <100 | <100 | <500 | <100 | -- |
| | 4/21/2011 | **1700** | **51** | **180** | 1.4 | 2.1 | 0.57 J | 1.3 | <1.0 | 1.3 | 3.2 J | <1.0 | <1.0 | <1.0 | 0.72 J | -- |
| | 10/27/2011 | **3200** | <100 | **290** | <100 | <100 | <100 | <100 UJ | <100 | <100 | <100 | <100 | <100 | <500 | <100 | -- |
| | 4/12/2012 | **2600** | <100 | **300** | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <500 | <100 | -- |
| | 4/12/2012 | **2600** | <100 | **260** | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <500 | <100 | -- |
| | 10/16/2012 | **1400** | **64 J** | **190 J** | <100 UJ | <100 | <100 UJ | <100 | <100 | <100 | <100 | <100 | <100 | 27 J | <100 | -- |
| | 4/25/2013 | **1200** | **41 J** | **130** | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <250 | <50 | -- |
| | 4/25/2013 | **1200** | **53 J** | **150** | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <50 | <250 | <50 | -- |
| | 10/31/2013 | **1200 J** | **40** | **340** | 1.8 | <1.0 | 0.20 J | 1.1 | <1.0 | 2.1 | 1.3 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/17/2014 | **1000** | **41** | **130** | 2.6 J | 3.4 J | <10 | <10 | 3.0 J | **4.2 J** | <10 | <10 | <10 | <50 | <10 | -- |
| | 10/29/2014 | **450** | **110** | **390** | 3.5 J | <4.0 | <4.0 | <20.0 | <4.0 | **4.6** | <4.0 | <4.0 | <4.0 | <20.0 | <4.0 | -- |
| | 6/2/2015 | **650 J** | **72** | **120** | <5.0 | <5.0 UJ | <5.0 | <25 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <25 | <5.0 | -- |
| | 10/20/2015 | **43** | **750** | **90** | 4.3 | <2.0 UJ | <2.0 | <10 | <2.0 | 1.3 J | <2.0 UJ | <2.0 | <2.0 | <10 | <2.0 | -- |
| | 3/15/2016 | **1200 J** | **190** | **140** | 1.8 J | 2.5 J | <2.0 | <10 UJ | <2.0 | 5.6 | <2.0 | <2.0 | <2.0 | <10 UJ | <2.0 | -- |
| | 10/26/2016 | **710** | **46** | **200** | 1.8 J | 2.0 | <2.0 | 6.5 J | <2.0 | **4.7** | <2.0 | <2.0 | <2.0 | <20 | <2.0 | -- |
| | 10/26/2016 | **710** | **47** | **190** | 2.4 | 2.0 | <2.0 | <10 | <2.0 | **4.6** | <2.0 | <2.0 | <2.0 | <20 | <2.0 | -- |
| | 4/12/2017 | **860** | **96 J** | **180** | 2.5 | 2 J | <2.0 | <10 UJ | <2.0 | **5.0** | <2.0 UJ | <2.0 | <2.0 | <20 | <2.0 | -- |
| OW-402R | 10/29/2010 | **20** | <5.0 | 27 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <25 | <5.0 | -- |
| | 4/20/2011 | **24** | <1.0 | 39 | <1.0 | 3.8 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <25 | <1.0 | -- |
| | 10/25/2011 | **7.4** | <5.0 | 46 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <25 UJ | <5.0 | -- |
| | 4/10/2012 | **25** | <1.0 | 55 | 0.64 J | **5.1** | <1.0 | 0.86 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/15/2012 | **25** | <1.0 | 65 J | 0.95 J | **6.6** | 0.16 J | 1.2 | 0.36 J | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/23/2013 | **26** | <1.0 | 57 | 0.83 J | **7.1** | 0.22 J | <1.0 | 0.35 J | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/30/2013 | **23** | <1.0 | 54 | 0.82 J | **6.3** | 0.21 J | 0.85 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/16/2014 | **21** | <1.0 | 37 | 0.93 J | **5.5** | 0.20 J | 0.46 J | 0.35 J | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/29/2014 | **24** | <1.0 | 40 | 1.1 | **6.4** | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/25/2016 | **21** | <1.0 | 35 | <1.0 | 4.5 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <10 | <1.0 | -- |
| | 10/25/2016 | **20** | <1.0 | 33 | <1.0 | 4.4 | <1.0 | <5.0 | 0.68 J | <1.0 | <1.0 | <1.0 | <1.0 | <10 | <1.0 | -- |
| OW-404R | 6/25/2010 | **96** | <5.0 | **130** | 1.5 J | <5.0 | <5.0 | <5.0 UJ | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <25 | <5.0 | -- |
| | 4/19/2011 | **63** | <1.0 | **100** | 1.3 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <25 | <1.0 | -- |
| | 10/25/2011 | **59** | <5.0 | **76** | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <25 UJ | <5.0 | -- |
| | 4/12/2012 | **69** | <5.0 | **110** | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | <25.0 | <5.0 | -- |
| | 10/15/2012 | **61** | **1.1** | **100 J** | 1.2 J | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | 0.42 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/24/2013 | **96** | **0.75 J** | **160** | 1.6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.70 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/29/2013 | **94** | **1.6** | **120** | 1.8 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.71 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 4/15/2014 | **97** | **1.3** | **140** | 1.6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.55 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/27/2014 | **79** | **1.8** | **130** | 2.2 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.91 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/27/2014 | **76** | **1.8** | **130** | 2.5 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 0.84 J | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 6/3/2015 | **100** | **1.4** | **150** | 2.5 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 UJ | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/19/2015 | **130** | **1.7** | **120** | 2.1 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 3/15/2016 | **22** | <1.0 | 12 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | -- |
| | 10/27/2016 | **110** | **6.2** | **160** | 2.7 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 1.8 | <1.0 | <1.0 | <10 | <1.0 | -- |
| | 4/11/2017 | **110** | **2.0** | **150** | 3.3 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | 1.2 | <1.0 | <1.0 | <10 | <1.0 | -- |

**Notes:**

1. All units are micrograms per liter (ug/L).
2. **Bold** values indicate the reference concentration exceeds the applicable Puerto Rico Water Quality Standard (PRWQS) or USEPA Maximum Contaminant Level (MCL) if no PRWQS is available. MCLs are indicated by *italics* .

quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample; "<" = the compound was not

**TABLE 2**
SUMMARY OF GROUNDWATER TESTING RESULTS - BIODEGRADATION PARAMETERS
HP Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Total Organic Carbon | Dissolved Iron | Sulfate | Methane | Ethane | Ethene | Chloride | Nitrate | Dissolved Oxygen | Oxidation-Reduction Potential (mV) | pH (su) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fill/Alluvium Wells** | | | | | | | | | | | | |
| GZ-501U[2] | 10/27/2010 | 5.2 | 0.0095 JB | 30 | 0.00034 J | <0.001 | <0.001 | 19 | 0.98 | 3.66 | -6.6 | 11.12 |
| | 4/18/2011 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 10/25/2011 | 4.1 | -- | -- | -- | -- | -- | -- | -- | 2.72 | -88.9 | 10.20 |
| | 4/11/2012 | 6.8 | -- | -- | -- | -- | -- | -- | -- | 4.42 | 181 | 9.98 |
| | 10/18/2012 | 5.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/29/2014 | 2.9 | -- | -- | -- | -- | -- | -- | -- | 2.85 | 57.4 | 8.22 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.17 | -171.9 | 7.34 |
| GZ-503U[2] | 10/28/2010 | 7.3 | 0.015 J | 19 | 0.00012 J | <0.001 | <0.001 | 5.9 | 0.23 | 3.55 | 101.2 | 7.60 |
| | 4/18/2011 | 11 B | -- | -- | -- | -- | -- | -- | -- | 5.70 | 23 | 7.95 |
| | 10/24/2011 | 6.6 | -- | -- | -- | -- | -- | -- | -- | 5.31 | -48.2 | 7.73 |
| | 4/12/2012 | 6.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/17/2012 | 6.4 | -- | -- | -- | -- | -- | -- | -- | 7.57 | 117 | 7.83 |
| | 4/24/2013 | 7.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/30/2013 | 5.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 4/15/2014 | 5.5 | -- | -- | -- | -- | -- | -- | -- | 6.11 | 48.3 | 7.66 |
| | 10/28/2014 | 6.1 | -- | -- | -- | -- | -- | -- | -- | 2.45 | 55.7 | 7.46 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 3.22 | -34.9 | 7.83 |
| GZ-504U | 6/24/2010 | NS | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/26/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/18/2011 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 10/24/2011 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 4/11/2012 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 10/15/2012 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 4/23/2013 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 10/29/2013 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 4/15/2014 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 10/30/2014 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 6/2/2015 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 10/20/2015 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 3/11/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.70 | 51.55 | 7.01 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| GZ-506U[2] | 10/27/2010 | 2.5 | 0.025 JB | 57 | <0.001 | <0.001 | <0.001 | 27 | 0.22 | 3.00 | 62.3 | 7.13 |
| | 4/19/2011 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 4.11 | 54 | 7.04 |
| | 10/24/2011 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 3.00 | 88.0 | 7.03 |
| | 4/10/2012 | 1.1 | -- | -- | -- | -- | -- | -- | -- | 5.58 | 120 | 7.08 |
| | 10/16/2012 | 1.0 | -- | -- | -- | -- | -- | -- | -- | 4.51 | 222 | 7.15 |
| | 4/24/2013 | 1.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/30/2013 | 0.82 J | -- | -- | -- | -- | -- | -- | -- | 3.35 | 73 | 7.14 |
| | 4/16/2014 | 1.0 | -- | -- | -- | -- | -- | -- | -- | 5.33 | 72.7 | 7.20 |
| | 10/29/2014 | 0.97 J | -- | -- | -- | -- | -- | -- | -- | 4.15 | 71.4 | 7.16 |
| | 10/25/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 3.95 | 146.2 | 7.11 |
| GZ-511U | 10/28/2010 | 0.91 J | 0.016 J | 22 | 0.019 | <0.001 | <0.001 | 8.6 | 0.088 | 0.33 | 21.3 | 7.10 |
| | 10/17/2012 | 0.62 J | -- | -- | -- | -- | -- | -- | -- | 0.13 | 92 | 7.01 |
| | 10/29/2014 | 0.77 J | -- | -- | -- | -- | -- | -- | -- | 0.78 | 76.3 | 6.95 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.90 | 36.4 | 7.13 |
| GZ-515U[4] | 6/24/2010 | 7.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/26/2010 | 11 | 0.011 J | 23 | 0.00032 J | <0.001 | <0.001 | 7.2 | 4.7 | 2.48 | 123.3 | 6.83 |
| | 4/20/2011 | 10 B | 0.016 J | 24 | 0.00020 J | <0.001 | 0.00011 J | 7.7 | 6.8 | 0.35 | 11.3 | 6.71 |
| | 10/25/2011 | 4.3 | 0.0065 J | 13 | 0.0037 | <0.001 | <0.001 | 3.4 | 1.7 | 1.43 | 56.6 | 6.81 |
| | 4/11/2012 | 5.2 | 0.014 J | 17 | <0.001 | <0.001 | <0.001 | 5.2 | 0.87 | 2.54 | 263 | 6.74 |
| | 10/17/2012 | 4.0 | <0.200 | 13 | 0.0040 | <0.001 | <0.001 | 3.9 | 0.52 | 1.38 | 105 | 6.79 |
| | 4/24/2013 | 7.4 | <0.200 | 16 | <0.001 | <0.001 | <0.001 | 5.6 | 0.39 | 1.88 | 46.9 | 6.75 |
| | 10/29/2013 | 3.3 | <0.200 | 13 | <0.001 | <0.001 | <0.001 | 3.5 | 0.94 | 1.16 | 81.2 | 6.70 |
| | 4/15/2014 | 5.8 | <0.050 | 14 | 0.00030 J | <0.0011 | <0.001 | 5.1 | 1.7 | 3.99 | 89.0 | 6.82 |
| | 10/28/2014 | 4.4 | 0.044 J | 14 | 0.023 | <0.0011 | <0.001 | 3.6 | 0.67 | 0.23 | 17.5 | 6.66 |
| | 10/27/2016 | 5.6 | <0.200 | -- | 0.00060 | <0.0011 | <0.0010 | -- | -- | -- | 123.6 | 6.65 |
| GZ-519U | 10/29/2010 | 1.4 | 0.021 J | 100 | 0.0016 | <0.001 | <0.001 | 22 | 0.023 | 0.22 | 82.4 | 6.99 |
| | 4/20/2011 | 1.7 B | 0.021 J | 180 | 0.001 | <0.001 | <0.001 | 28 | 0.45 | 0.06 | -21.5 | 7.06 |
| | 10/26/2011 | 0.77 J | 0.016 J | 130 | 0.0016 | <0.001 | <0.001 | 26 | 0.079 | 0.10 | 94.7 | 7.05 |
| | 4/10/2012 | 0.87 J | 0.024 J | 140 | 0.00031 J | <0.001 | <0.001 | 21 | 0.25 | 0.11 | 204 | 6.97 |
| | 10/15/2012 | 0.81 J | <0.200 | 160 | 0.0021 | <0.001 | <0.001 | 28 | 0.042 | 0.89 | 206 | 6.99 |
| | 4/23/2013 | 0.79 J | <0.200 | 230 | <0.001 | <0.001 | 0.0071 | 32 | 0.23 | 0.14 | -254 | 7.03 |
| | 10/30/2013 | 0.58 J | <0.200 | 150 | 0.00034 J | <0.001 | <0.001 | 25 | 0.13 | 0.04 | 55.4 | 7.08 |
| | 4/16/2014 | 1.0 | <0.050 | 140 | 0.0016 | <0.0011 | <0.001 | 22 | 0.22 | 0.10 | 51.2 | 7.03 |
| | 10/29/2014 | 0.68 J | <0.050 | 150 | 0.0012 | <0.0011 | <0.001 | 26 | 0.20 | 0.29 | 58.1 | 7.06 |
| | 6/2/2015 | 0.74 J | <0.050 | -- | 0.0032 | <0.0011 | <0.001 | -- | -- | 0.07 | 62.6 | 6.98 |
| | 10/20/2015 | 1.5 | <0.050 | -- | 0.00069 | <0.0011 | <0.001 | -- | -- | 0.29 | 2.2 | 6.89 |
| | 3/15/2016 | 0.92 J | 0.110 J | -- | 0.0016 | <0.0011 | <0.001 | -- | -- | 0.15 | 55.9 | 6.99 |
| | 10/26/2016 | 0.89 J | <0.200 | -- | 0.0024 | <0.0011 | <0.0010 | -- | -- | 0.12 | 94.0 | 7.14 |
| | 4/12/2017 | 0.96 J | <0.200 | -- | 0.0011 | <0.0011 | <0.0010 | -- | -- | 0.45 | 75.1 | 7.06 |

**TABLE 2**
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HP Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Total Organic Carbon | Dissolved Iron | Sulfate | Methane | Ethane | Ethene | Chloride | Nitrate | Dissolved Oxygen | Oxidation-Reduction Potential (mV) | pH (su) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fill/Alluvium Wells** | | | | | | | | | | | | |
| GZ-702U[4] | 4/17/2014 | -- | -- | -- | -- | -- | -- | -- | -- | 2.52 | 63.0 | 7.18 |
| | 10/30/2014 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 0.19 | 65.5 | 7.15 |
| | 6/3/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.36 | 35.1 | 7.29 |
| | 10/19/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.31 | 34.6 | 7.93 |
| | 3/11/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.32 | 25.1 | 7.11 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 125.3 | 7.08 |
| | 4/12/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.18 | 1.5 | 7.07 |
| IW-1 | 3/16/2016 | 7.7 | 0.24 | -- | 0.26 | <0.0011 | 0.00098 J | -- | -- | 0.44 | 34.36 | 6.68 |
| | 10/26/2016 | 3800 | 36 | -- | 1.9 | 0.0011 | 0.0026 | -- | -- | -- | -- | -- |
| | 4/13/2017 | 4100 | 130 | -- | 3.9 | <0.0011 | <0.0010 | -- | -- | 0.16 | 38.94 | 5.12 |
| OW-101[2] | 6/25/2010 | 2.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/29/2010 | 2.3 | 0.14 | 22 | 0.073 | <0.001 | <0.001 | 21 | <0.010 | 0.46 | -23.1 | 6.83 |
| | 4/21/2011 | 1.9 | 0.020 J | 26 | 0.0041 | <0.001 | <0.001 | 26 | 0.028 | 0.34 | 179.0 | 6.85 |
| | 10/27/2011 | 1.7 | 0.021 J | 38 | 0.140 | <0.001 | <0.001 | 24 | 0.18 | 0.43 | -128.1 | 6.81 |
| | 4/10/2012 | 1.5 | 0.030 J | 21 | 0.011 | <0.001 | <0.001 | 18 | 0.047 | 0.83 | 158 | 6.80 |
| | 10/18/2012 | 2.2 | 0.51 | 17 | 0.150 | <0.001 | <0.001 | 17 | <0.010 | -- | -- | -- |
| | 4/23/2013 | 1.7 | <0.200 | 28 | 0.036 | <0.001 | <0.001 | 29 | 0.57 | 3.87 | -5.0 | 6.90 |
| | 10/30/2013 | 1.5 | 0.12 J | 22 | 0.092 | <0.001 | <0.001 | 24 | 0.026 | 0.26 | -34.5 | 6.84 |
| | 4/16/2014 | 1.4 | 0.062 | 19 | 0.16 | <0.0011 | <0.001 | 17 | 0.042 J | 0.22 | -20.7 | 6.83 |
| | 10/28/2014 | 3.5 | 0.055 | 21 | 0.045 | <0.001 | 0.00081 J | 15 | 0.71 | 0.77 | -6.4 | 6.94 |
| | 6/2/2015 | 1.7 | 0.18 | -- | 0.13 | <0.0011 | <0.001 | -- | -- | 0.32 | -83.3 | 6.86 |
| | 10/20/2015 | 2.6 | 0.022 | -- | 0.26 | <0.0011 | 0.00063 J | -- | -- | 0.08 | -17.1 | 6.82 |
| | 3/15/2016 | 1.7 | <0.2 | -- | 0.00079 | <0.0011 | <0.001 | -- | -- | 1.56 | 21.4 | 7.46 |
| | 10/26/2016 | 1.9 | 0.66 | -- | 0.048 | <0.0011 | <0.0010 | -- | -- | 0.49 | -42.8 | 6.90 |
| | 4/12/2017 | 1.6 | <0.200 | -- | 0.14 | <0.0011 | <0.0010 | -- | -- | 0.42 | 35.9 | 6.87 |
| OW-105 | 10/27/2010 | 3.8 | 0.056 B | 640 | 0.044 | <0.001 | <0.001 | 45 | 3.3 | 0.40 | -94 | 6.75 |
| | 4/20/2011 | 1.4 B | -- | -- | -- | -- | -- | -- | -- | 3.42 | -29 | 6.97 |
| | 10/24/2011 | 0.79 J | -- | -- | -- | -- | -- | -- | -- | 0.86 | 27.7 | 6.91 |
| | 4/10/2012 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 1.06 | -106 | 6.84 |
| | 10/17/2012 | 0.61 J | -- | -- | -- | -- | -- | -- | -- | 0.69 | 137 | 6.94 |
| | 10/29/2014 | 0.90 J | -- | -- | -- | -- | -- | -- | -- | 0.16 | -2.9 | 6.78 |
| | 10/25/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.45 | 184.8 | 6.97 |
| OW-304U[2] | 10/26/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/18/2011 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 10/25/2011 | 3.1 | -- | -- | -- | -- | -- | -- | -- | 0.37 | 45.1 | 6.90 |
| | 4/12/2012 | 2.6 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/17/2012 | 1.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 4/23/2013 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 10/30/2013 | 3.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 4/16/2014 | 1.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/29/2014 | 2.1 | -- | -- | -- | -- | -- | -- | -- | 0.33 | 52.9 | 6.93 |
| | 10/26/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.27 | 127 | 7.01 |
| OW-305U[2,4] | 10/29/2010 | 4.1 | 0.0096 J | 7.4 | 0.01 | <0.001 | <0.001 | 5.0 | 0.22 | 5.00 | 56.8 | 7.57 |
| | 4/21/2011 | 4.0 | <0.050 | 4.8 | 0.00024 J | <0.001 | <0.001 | 1.6 | 0.75 | -- | -- | -- |
| | 10/26/2011 | 3.3 | <0.050 | 3.6 | <0.001 | <0.001 | <0.001 | 1.7 | 0.24 | 0.94 | -86.7 | 7.34 |
| | 4/12/2012 | 2.6 | 0.061 | 14 | 0.055 | <0.001 | <0.001 | 8.0 | 0.067 | -- | -- | -- |
| | 10/18/2012 | 3.2 | <0.200 | 17 | <0.001 | <0.001 | <0.001 | 7.5 | 1.3 | -- | -- | -- |
| | 4/24/2013 | 4.7 | <0.200 | 6.9 | <0.001 | <0.001 | <0.001 | 6.1 | 0.34 | -- | -- | -- |
| | 10/29/2013 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/15/2014 | 2.4 | 0.12 | 17 | 0.022 | <0.0011 | <0.001 | 9.8 | <0.050 | 0.44 | -62.7 | 7.06 |
| | 10/28/2014 | 5.6 | <0.050 | 18 | 0.00062 | <0.0011 | <0.001 | 10 | 3.4 | 1.55 | 6.9 | 7.20 |
| | 10/26/2016 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 95.9 | 7.17 |
| OW-305I[4] | 6/25/2010 | 1.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/29/2010 | 2.1 | 1.0 | 14 | 0.56 | <0.001 | 0.0011 | 9.6 | <0.010 | 0.13 | -99.9 | 6.96 |
| | 4/19/2011 | 0.99 J | -- | -- | -- | -- | -- | -- | -- | 0.02 | -172.8 | 6.86 |
| | 10/26/2011 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 0.06 | -105.4 | 6.90 |
| | 4/11/2012 | 1.2 | -- | -- | -- | -- | -- | -- | -- | 0.02 | 116 | 7.02 |
| | 10/17/2012 | 1.1 | -- | -- | -- | -- | -- | -- | -- | 0.03 | -81 | 6.98 |
| | 4/23/2013 | 1.2 | -- | -- | -- | -- | -- | -- | -- | 0.03 | -363 | 7.02 |
| | 10/29/2013 | 1.0 | -- | -- | -- | -- | -- | -- | -- | 0.03 | -48.8 | 6.98 |
| | 4/15/2014 | 1.1 | -- | -- | -- | -- | -- | -- | -- | 0.58 | -59.3 | 7.01 |
| | 10/28/2014 | 1.2 | -- | -- | -- | -- | -- | -- | -- | 0.17 | -29.1 | 7.09 |
| | 10/26/2016 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 123.4 | 7.01 |
| OW-402U[2] | 10/29/2010 | 1.4 | 0.016 J | 27 | 0.00021 J | <0.001 | <0.001 | 6.1 | 0.59 | 1.66 | 76.7 | 6.83 |
| | 4/20/2011 | 3.0 B | 0.042 J | 26 | <0.001 | <0.001 | <0.001 | 8.5 | 0.45 | 5.01 | 30.7 | 6.90 |
| | 10/25/2011 | 2.7 | 0.015 | 20 | <0.001 | <0.001 | <0.001 | 6.2 | 0.68 | 1.12 | 117.1 | 6.86 |
| | 4/10/2012 | 1.2 | 0.028 J | 21 | <0.001 | <0.001 | <0.001 | 7.1 | 0.27 | 2.72 | 148 | 6.74 |
| | 10/15/2012 | 1.7 | <0.200 | 14 | <0.001 | <0.001 | <0.001 | 5.0 | 0.41 | 1.30 | 241 | 6.79 |
| | 4/23/2013 | 2.5 | <0.200 | 17 | <0.001 | <0.001 | 0.0065 | 8.1 | 0.25 | 4.23 | -39.1 | 6.86 |
| | 10/31/2013 | 1.4 | -- | 54 | <0.001 | <0.001 | <0.001 | 16 | 1.6 | -- | -- | -- |
| | 4/16/2014 | 1.1 | 0.032 J | 14 | 0.0020 | <0.0011 | <0.001 | 8.5 | 0.55 | 0.84 | 34.9 | 6.77 |
| | 10/29/2014 | 2.4 | <0.050 | 48 | 0.00079 | <0.0011 | <0.001 | 22 | 3.5 | 2.30 | 100.6 | 6.84 |
| | 6/2/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 1.04 | 36.1 | 6.69 |
| | 10/20/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 5.01 | 9.1 | 6.80 |
| | 3/10/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.91 | 55.6 | 6.74 |
| | 10/25/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.84 | 20.6 | 6.93 |
| | 4/11/2017 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| OW-404U[4] | 6/25/2010 | 14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/26/2010 | 25 | 0.026 J | 33 | 0.00014 J | <0.001 | <0.001 | 12 | 5.1 | 4.46 | 44.1 | 7.14 |
| | 10/15/2012 | 14 | -- | -- | -- | -- | -- | -- | -- | 1.85 | 179 | 7.33 |
| | 10/27/2014 | 15 | -- | -- | -- | -- | -- | -- | -- | 0.27 | 28.2 | 7.14 |
| | 6/3/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 2.19 | 73 | 7.26 |
| | 10/19/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.34 | -17.4 | 7.64 |
| | 3/10/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.41 | 75.4 | 7.16 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 120.5 | 7.22 |
| | 4/11/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.38 | -16.1 | 7.14 |

**TABLE 2**
SUMMARY OF GROUNDWATER TESTING RESULTS - BIODEGRADATION PARAMETERS
HP Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Total Organic Carbon | Dissolved Iron | Sulfate | Methane | Ethane | Ethene | Chloride | Nitrate | Dissolved Oxygen | Oxidation-Reduction Potential (mV) | pH (su) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fill/Alluvium Wells** | | | | | | | | | | | | |
| WB-1U[2,4] | 6/25/2010 | 8.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/28/2010 | 11 | 0.029 J | 22 | 0.00048 J | <0.001 | <0.001 | 10 | 21 | 1.69 | 124 | 7.11 |
| | 4/19/2011 | 7.7 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/25/2011 | 11 | -- | -- | -- | -- | -- | -- | -- | 0.43 | -19.3 | 6.86 |
| | 4/12/2012 | 6.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/16/2012 | 7.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 6/4/2013 | 5.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/29/2013 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 4/15/2014 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 10/27/2014 | 2.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 6/3/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.65 | 6.43 | 6.88 |
| | 6/3/2015 DUP | -- | -- | -- | -- | -- | -- | -- | -- | 0.65 | 6.43 | 6.88 |
| | 10/19/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 6.61 | 81.42 | 7.01 |
| | 3/10/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 1.73 | 32.9 | 7.06 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 112.3 | 7.13 |
| | 4/11/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 3.26 | 94.6 | 7.23 |
| WB-2U | 10/26/2010 | 4.7 | 0.15 | 18 | 0.059 | <0.001 | <0.001 | 7.2 | 0.0097 J | 0.31 | -111.8 | 6.46 |
| | 10/15/2012 | 3.7 | -- | -- | -- | -- | -- | -- | -- | 0.15 | 176 | 6.38 |
| | 10/27/2014 | 3.2 | -- | -- | -- | -- | -- | -- | -- | 0.19 | 60.1 | 6.41 |
| | 6/3/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.32 | 40.6 | 7.58 |
| | 10/19/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.24 | 91.2 | 6.98 |
| | 3/10/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.92 | 80.19 | 6.55 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.39 | 197.8 | 6.49 |
| | 4/12/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.37 | 172.44 | 6.54 |

**Notes:**

1. All units are milligrams per liter (mg/L), except Oxidation-Reduction Potential - millivolts (mV) and pH - standard unit (su).
2. If a sample went dry before stabilization, there are no field parameters associated with this sample.
3. "--" = analyte not tested; "J" = the concentration reported was at or below the reporting limit; "B" = the analyte in question was detected in the associated laboratory blank; "<" = the compound was not detected above the method quantification limit shown; "NS" = no sample was taken because the well was dry or inaccessible.
4. DO readings were not obtained from select wells in October 2016 due to a malfunctioning DO sensor.

**TABLE 2**
SUMMARY OF GROUNDWATER TESTING RESULTS - BIODEGRADATION PARAMETERS
HP Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Total Organic Carbon | Dissolved Iron | Sulfate | Methane | Ethane | Ethene | Chloride | Nitrate | Dissolved Oxygen | Oxidation-Reduction Potential (mV) | pH (su) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Saprolite Wells** | | | | | | | | | | | | |
| DEC-204O | 10/27/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/20/2011 | 4.6 B | -- | -- | -- | -- | -- | -- | -- | 0.22 | -2.8 | 6.55 |
| | 10/27/2011 | 1.6 | -- | -- | -- | -- | -- | -- | -- | 0.04 | 36.9 | 6.64 |
| | 4/12/2012 | 1.6 | -- | -- | -- | -- | -- | -- | -- | 0.07 | 100 | 6.60 |
| | 10/16/2012 | 1.6 | -- | -- | -- | -- | -- | -- | -- | 0.03 | 168 | 6.61 |
| | 4/23/2013 | 1.1 | -- | -- | -- | -- | -- | -- | -- | 0.17 | 141 | 6.63 |
| | 10/30/2013 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 0.09 | 82.6 | 6.62 |
| | 4/16/2014 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 0.08 | 68.6 | 6.55 |
| | 10/28/2014 | 1.5 | -- | -- | -- | -- | -- | -- | -- | 0.13 | 83.3 | 6.54 |
| | 10/28/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.13 | 135.0 | 6.59 |
| GZ-501L | 10/27/2010 | 2.1 | 0.025 JB | 47 | 0.0082 | <0.001 | <0.001 | 32 | 0.053 | 0.13 | 106.1 | 6.87 |
| | 4/18/2011 | 1.9 B | -- | -- | -- | -- | -- | -- | -- | 0.12 | -19.9 | 7.13 |
| | 10/24/2011 | 1.4 | -- | -- | -- | -- | -- | -- | -- | 0.15 | -28.2 | 6.86 |
| | 4/11/2012 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 0.13 | 268 | 6.88 |
| | 10/17/2012 | 1.1 | -- | -- | -- | -- | -- | -- | -- | 0.13 | 260 | 6.91 |
| | 4/25/2013 | 0.87 J | -- | -- | -- | -- | -- | -- | -- | 0.14 | 74 | 6.96 |
| | 10/29/2013 | 0.83 J | -- | -- | -- | -- | -- | -- | -- | 0.11 | 73.1 | 6.96 |
| | 4/15/2014 | 0.95 J | -- | -- | -- | -- | -- | -- | -- | 0.19 | 72.9 | 6.92 |
| | 10/29/2014 | 0.87 J | -- | -- | -- | -- | -- | -- | -- | 0.16 | 86.4 | 6.89 |
| | 6/3/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.30 | 143.2 | 6.76 |
| | 10/20/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.11 | 17.7 | 6.89 |
| | 3/11/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.16 | 56.73 | 6.83 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.23 | 12.59 | 7.10 |
| | 4/11/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.24 | 320.07 | 6.95 |
| GZ-502L | 6/28/2010 | 1.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/28/2010 | 1.3 | 0.016 J | 46 | 0.039 | 0.00019 J | <0.001 | 44 | 0.0095 J | 0.29 | 31.9 | 6.83 |
| | 4/21/2011 | 1.5 | 0.023 J | 44 | 0.035 | <0.001 | <0.001 | 43 | <0.010 | 0.01 | 49.5 | 6.85 |
| | 10/26/2011 | 1.3 | 0.017 J | 48 | 0.020 | <0.001 | <0.001 | 34 | <0.010 | 0.10 | 138.1 | 6.85 |
| | 4/11/2012 | 1.3 | 0.026 J | 25 | 0.011 | <0.001 | <0.001 | 17 | 0.013 | 0.09 | 292 | 6.81 |
| | 10/18/2012 | 1.2 | <0.200 | 55 | 0.0046 | <0.001 | <0.001 | 29 | <0.010 | 0.06 | 154 | 6.86 |
| | 4/24/2013 | 0.96 J | <0.200 | 57 | 0.0079 | <0.001 | <0.001 | 31 | 0.017 | 0.09 | -247 | 6.93 |
| | 10/29/2013 | 0.99 J | <0.200 | 58 | 0.0036 | <0.001 | <0.001 | 30 | 0.022 | 0.04 | 78.8 | 6.92 |
| | 4/15/2014 | 0.90 J | <0.050 | 57 | 0.0040 | <0.0011 | <0.001 | 31 | <0.050 | 0.09 | 66.4 | 6.89 |
| | 10/29/2014 | 0.86 J | <0.050 | 57 | 0.0089 | <0.0011 | <0.001 | 32 | <0.050 | 0.12 | 76.7 | 6.90 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.31 | 20.8 | 7.07 |
| GZ-503L | 10/29/2010 | 3.2 | 0.37 | 28 | 0.011 | <0.001 | <0.001 | 23 | 0.0099 J | 0.19 | -188.9 | 6.79 |
| | 4/21/2011 | 2.1 B | 0.041 J | 29 | 0.0074 | <0.001 | <0.001 | 23 | 0.018 | 0.08 | 30.5 | 6.81 |
| | 10/27/2011 | 1.1 | 0.021 J | 26 | 0.016 | <0.001 | <0.001 | 21 | <0.010 | 0.09 | -150.8 | 6.86 |
| | 4/11/2012 | 1.2 | 0.031 J | 35 | 0.020 | <0.001 | <0.001 | 28 | 0.0064 J | 0.07 | 181 | 6.86 |
| | 10/17/2012 | 1.5 | <0.200 | 34 | 0.016 | 0.00023 J | 0.00013 J | 26 | 0.18 | 0.13 | 153 | 6.60 |
| | 4/24/2013 | 1.2 | <0.200 | 38 | 0.034 | <0.001 | <0.001 | 27 | 0.059 | 0.32 | -188 | 6.86 |
| | 10/29/2013 | 1.1 | <0.200 | 35 | 0.030 | <0.001 | <0.001 | 24 | 0.029 | 0.16 | 63.7 | 6.90 |
| | 4/15/2014 | 1.1 | 0.079 | 39 | 0.037 | <0.0011 | <0.001 | 27 | 0.069 | 0.17 | 7.8 | 6.85 |
| | 10/28/2014 | 1.2 | <0.050 | 40 | 0.062 | <0.0011 | <0.001 | 28 | 0.031 J | 0.17 | 53.8 | 6.92 |
| | 6/3/2015 | 1.2 | 0.025 J | -- | 0.00066 | <0.0011 | <0.001 | -- | -- | 0.26 | 87.3 | 6.66 |
| | 10/20/2015 | 1.6 | <0.050 | -- | 0.061 | <0.0011 | <0.001 | -- | -- | 0.05 | 48.1 | 6.82 |
| | 3/11/2016 | 2.9 | 0.080 J | -- | 0.013 | 0.00097 J | 0.001 | -- | -- | 0.22 | 62.6 | 6.72 |
| | 10/27/2016 | 0.95 J | <0.200 | -- | 0.043 | <0.0011 | <0.0010 | -- | -- | 0.32 | -55.1 | 7.04 |
| | 4/11/2017 | 1.1 | <0.200 | -- | 0.029 | <0.0011 | <0.0010 | -- | -- | 0.27 | 48.9 | 6.87 |
| GZ-504L | 10/27/2010 | 2.2 | 0.045 JB | 46 | 0.022 | <0.001 | <0.001 | 12 | 0.31 | 0.19 | 17.9 | 6.75 |
| | 10/15/2012 | 1.9 | -- | -- | -- | -- | -- | -- | -- | 0.45 | 65 | 6.78 |
| | 4/24/2013 | 1.0 | -- | -- | -- | -- | -- | -- | -- | 2.92 | 25 | 6.86 |
| | 10/30/2013 | 0.95 J | -- | -- | -- | -- | -- | -- | -- | 0.07 | 46.8 | 6.82 |
| | 4/15/2014 | 1.0 | -- | -- | -- | -- | -- | -- | -- | 0.15 | 13.6 | 6.81 |
| | 10/30/2014 | 1.0 | -- | -- | -- | -- | -- | -- | -- | 0.18 | 48.6 | 6.83 |
| | 6/3/2015 | 1.1 | 0.068 | -- | 0.023 | <0.0011 | <0.001 | -- | -- | 0.12 | 32.7 | 6.71 |
| | 10/19/2015 | 1.4 | 0.32 | -- | 0.034 | <0.0011 | <0.001 | -- | -- | 0.14 | -15.6 | 7.85 |
| | 3/11/2016 | 1.4 | 0.34 | -- | 0.00031 J | <0.0011 | <0.001 | -- | -- | 0.51 | 95.7 | 7.48 |
| | 10/27/2016 | 1.5 | 0.088 J | -- | 0.018 | <0.0011 | <0.0010 | -- | -- | 0.16 | 45.2 | 6.82 |
| | 4/11/2017 | 1.3 | 0.089 J | -- | 0.018 | <0.0011 | <0.0010 | -- | -- | 0.19 | 89.5 | 6.8 |
| GZ-505L | 6/28/2010 | 3.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/26/2010 | 5.9 | 0.024 J | 23 | 0.00078 J | <0.001 | <0.001 | 7.7 | 0.011 | 0.34 | 456.1 | 6.44 |
| | 4/18/2011 | 4.6 | -- | -- | -- | -- | -- | -- | -- | 0.79 | 56.7 | 6.71 |
| | 10/24/2011 | 4.0 | -- | -- | -- | -- | -- | -- | -- | 0.22 | -180.2 | 6.41 |
| | 4/11/2012 | 3.9 | -- | -- | -- | -- | -- | -- | -- | 0.11 | 220 | 6.51 |
| | 10/17/2012 | 3.6 | -- | -- | -- | -- | -- | -- | -- | 0.09 | 130 | 6.50 |
| | 4/24/2013 | 4.6 | -- | -- | -- | -- | -- | -- | -- | 0.52 | 521 | 6.50 |
| | 10/29/2013 | 3.6 | -- | -- | -- | -- | -- | -- | -- | 0.36 | 465 | 6.55 |
| | 4/15/2014 | 3.1 | -- | -- | -- | -- | -- | -- | -- | 0.17 | 78.8 | 6.51 |
| | 10/28/2014 | 3.8 | -- | -- | -- | -- | -- | -- | -- | 0.41 | 526.6 | 6.60 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.15 | 191.3 | 6.53 |
| GZ-601L[3] | 4/12/2012 | 0.70 J | 0.021 J | 63 | <0.001 | <0.001 | <0.001 | 6.9 | 0.14 | 0.44 | 278 | 7.10 |
| | 10/16/2012 | 0.55 J | <0.200 | 63 | <0.001 | <0.001 | <0.001 | 7.0 | 0.83 | 0.16 | 65 | 7.12 |
| | 4/25/2013 | <1.0 | -- | -- | -- | -- | -- | -- | -- | 0.29 | 58 | 7.07 |
| | 10/30/2013 | <1.0 | -- | -- | -- | -- | -- | -- | -- | 0.23 | 44.8 | 7.16 |
| | 4/17/2014 | <1.0 | -- | -- | -- | -- | -- | -- | -- | 0.15 | 42.4 | 7.11 |
| | 10/30/2014 | <1.0 | -- | -- | -- | -- | -- | -- | -- | 0.16 | 71.2 | 7.14 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 99.6 | 7.16 |
| GZ-701L | 4/17/2014 | -- | -- | -- | -- | -- | -- | -- | -- | 4.00 | 88.7 | 6.32 |
| | 10/30/2014 | 0.72 J | -- | -- | -- | -- | -- | -- | -- | 2.68 | 116.6 | 6.41 |
| | 6/3/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 2.74 | 85.4 | 6.35 |
| | 10/19/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 3.17 | 191.6 | 6.84 |
| | 3/11/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 2.50 | 62.3 | 6.26 |
| | 10/28/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 2.78 | 18.9 | 6.22 |
| | 4/12/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 2.54 | 176.5 | 6.36 |

**TABLE 2**
SUMMARY OF GROUNDWATER TESTING RESULTS - BIODEGRADATION PARAMETERS
HP Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Total Organic Carbon | Dissolved Iron | Sulfate | Methane | Ethane | Ethene | Chloride | Nitrate | Dissolved Oxygen | Oxidation-Reduction Potential (mV) | pH (su) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fill/Alluvium Wells** | | | | | | | | | | | | |
| IW-2 | 3/16/2016 | 1.8 | <0.200 | -- | 0.0430 | 0.0110 | 0.0011 | -- | -- | 1.24 | 79.7 | 6.78 |
| | 10/25/2016 | 4100 | 84 | -- | 5.5 | <0.0011 | <0.0010 | -- | -- | 0.15 | 38.6 | 5.11 |
| | 4/13/2017 | 4000 | 180 | -- | 4.6 | 0.00073 J | 0.0017 | -- | -- | -- | -- | -- |
| IW-3[3,4] | 3/16/2016 | 1.1 | <0.200 | -- | 0.0390 | <0.011 | <0.001 | -- | -- | 0.60 | 83.6 | 6.69 |
| | 10/25/2016 | 2000 | 2.8 | -- | 7.3 | <0.0011 | <0.0010 | -- | -- | -- | 113.7 | 5.15 |
| | 4/13/2017 | 3800 | 81 | -- | 1.6 | 0.0052 | <0.0010 | -- | -- | -- | 38.2 | 5.11 |
| OW-1 | 6/24/2010 | NS | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/27/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/18/2011 | NS | -- | -- | -- | -- | -- | -- | -- | NS | NS | NS |
| | 10/24/2011 | 1.5 | -- | -- | -- | -- | -- | -- | -- | 0.32 | 175.1 | 6.87 |
| | 4/11/2012 | 1.4 | -- | -- | -- | -- | -- | -- | -- | 0.07 | 224 | 6.97 |
| | 10/16/2012 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 0.12 | 150 | 6.88 |
| | 10/28/2014 | 1.4 | -- | -- | -- | -- | -- | -- | -- | 0.32 | 57.8 | 6.80 |
| | 10/28/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.32 | 121.2 | 6.91 |
| OW-101L | 10/27/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/20/2011 | 2.2 B | 0.52 | 52 | 0.00062 J | <0.001 | <0.001 | 25 | <0.010 | 0.30 | -155.1 | 6.56 |
| | 10/26/2011 | 1.1 | 2.9 | 47 | 0.0089 | <0.001 | 0.00025 J | 22 | <0.010 | 0.19 | -128.9 | 6.70 |
| | 4/10/2012 | 1.1 | 2.6 | 50 | 0.0063 | <0.001 | 0.00048 J | 24 | 0.025 | 0.13 | 130 | 6.72 |
| | 10/18/2012 | 0.82 J | 2.0 | 46 | 0.0024 | <0.001 | <0.001 | 31 | 0.019 | 0.12 | -147 | 6.90 |
| | 4/23/2013 | 0.76 J | 0.56 | 26 | 0.0082 | <0.001 | 0.0022 | 15 | 0.053 | 0.17 | -81 | 6.83 |
| | 10/30/2013 | 0.62 J | 1.7 | 52 | 0.00050 J | <0.001 | <0.001 | 35 | <0.010 | 0.13 | -45.7 | 6.84 |
| | 4/16/2014 | 0.68 J | 1.2 | 54 | 0.0044 | <0.0011 | <0.001 | 30 | <0.050 | 0.40 | -66.8 | 6.81 |
| | 10/28/2014 | 0.66 J | 1.1 | 58 | 0.0032 | <0.0011 | <0.001 | 36 | <0.050 | 0.30 | -34.9 | 6.83 |
| | 6/2/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.14 | -72.1 | 6.90 |
| | 10/20/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.07 | -74.9 | 6.83 |
| | 3/10/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.30 | -24.8 | 6.85 |
| | 10/26/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.65 | -39.1 | 6.93 |
| | 4/11/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.25 | -79.6 | 6.91 |
| OW-102 | 10/28/2010 | 0.78 J | 0.031 J | 44 | 0.00020 J | <0.001 | <0.001 | 29 | 0.74 | 1.49 | 21.9 | 6.52 |
| | 10/17/2012 | 0.56 J | -- | -- | -- | -- | -- | -- | -- | 2.42 | 203 | 6.55 |
| | 4/23/2013 | 0.39 J | -- | -- | -- | -- | -- | -- | -- | 1.95 | 73 | 6.67 |
| | 10/31/2013 | 0.49 J | -- | -- | -- | -- | -- | -- | -- | 1.15 | 95 | 6.61 |
| | 4/16/2014 | 0.59 J | -- | -- | -- | -- | -- | -- | -- | 2.39 | 79.2 | 6.57 |
| | 10/29/2014 | <1.0 | -- | -- | -- | -- | -- | -- | -- | 1.22 | 112.3 | 6.64 |
| | 10/25/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.37 | 219.5 | 6.58 |
| OW-301 | 6/24/2010 | 0.36 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/26/2010 | 1.6 | 0.017 J | 38 | 0.00024 J | <0.001 | <0.001 | 4.1 | 1.1 | 4.92 | 77.6 | 7.00 |
| | 4/21/2011 | 0.48 J | 0.014 J | 39 | 0.00014 J | <0.001 | <0.001 | 6.7 | 3.5 | 4.52 | 41.5 | 7.23 |
| | 10/25-26/2011 | 0.40 J | 0.015 | 37 | <0.001 | <0.001 | <0.001 | 5.0 | 3.0 | 4.39 | -28.0 | 7.09 |
| | 4/11/2012 | 0.37 J | 0.022 J | 38 | <0.001 | <0.001 | <0.001 | 5.0 | 5.3 | 3.40 | 293 | 6.99 |
| | 10/16/2012 | 0.47 J | <0.200 | 40 | <0.001 | <0.001 | <0.001 | 7.3 | 5.4 | 4.15 | 147 | 7.07 |
| | 4/25/2013 | <1.0 | <0.200 | 38 | <0.001 | <0.001 | <0.001 | 7.8 | 4.1 | 4.79 | -127 | 7.14 |
| | 10/30/2013 | 0.76 J | <0.200 | 35 | <0.001 | <0.001 | <0.001 | 5.7 | 1.2 | 3.48 | 91.6 | 6.99 |
| | 4/16/2014 | 0.85 J | <0.050 | 40 | <0.00058 | <0.0011 | <0.001 | 4.3 | 0.92 | 4.80 | 68.9 | 6.97 |
| | 10/28/2014 | 0.81 J | <0.050 | 37 | 0.0017 | <0.0011 | <0.001 | 2.8 | 0.47 | 4.34 | 121.7 | 6.99 |
| | 10/28/2016 | 1.3 | <0.200 | -- | <0.00058 | <0.0011 | <0.0010 | -- | -- | 4.62 | 52.26 | 7.15 |
| OW-304L | 6/24/2010 | 1.9 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/29/2010 | 3 | 0.2 | 80 | 0.0027 | <0.001 | <0.001 | 72 | 1.7 | 0.27 | 2.5 | 6.46 |
| | 4/21/2011 | 2.6 | 8.9 | 80 | 0.011 | <0.001 | <0.001 | 79 | 3.1 | 0.42 | -14.1 | 6.42 |
| | 10/27/2011 | 2.4 | 7.9 | 63 | 0.012 | <0.001 | <0.001 | 72 | 3.2 | 0.17 | 39.7 | 6.51 |
| | 4/12/2012 | 2.6 | 0.042 J | 81 | 0.0055 | <0.001 | <0.001 | 73 | 2.5 | 0.94 | 148 | 6.48 |
| | 10/16/2012 | 2.7 | 0.064 J | 82 | 0.0066 | <0.001 | <0.001 | 68 | 2.2 | 0.14 | -231 | 6.47 |
| | 4/25/2013 | 2.1 | <0.200 | 81 | 0.018 | <0.001 | <0.001 | 65 | 1.5 | 0.25 | -246 | 6.50 |
| | 10/31/2013 | 2.5 | 0.095 J | 81 | 0.0045 | <0.001 | <0.001 | 65 | 1.5 | 0.16 | 73.6 | 6.54 |
| | 4/16/2014 | 2.2 | <0.050 | 79 | 0.019 | <0.0011 | <0.001 | 58 | 1.6 | 0.31 | 73.6 | 6.49 |
| | 10/29/2014 | 2.4 | <0.050 | 74 | 0.0058 | <0.0011 | <0.001 | 56 | 1.1 | 0.68 | 84.0 | 6.47 |
| | 6/2/2015 | 2.4 | 0.085 | -- | 0.014 | <0.0011 | <0.001 | -- | -- | 0.37 | 81.4 | 6.43 |
| | 10/20/2015 | 3.2 | 5.2 | -- | 0.025 | <0.0011 | <0.001 | -- | -- | 0.21 | 51.7 | 6.12 |
| | 3/15/2016 | 2.5 | 1.2 | -- | 0.017 | 0.0066 | 0.0057 | -- | -- | 0.46 | 60.0 | 6.50 |
| | 10/26/2016 | 2.4 | 0.180 J | -- | 0.0025 | <0.0011 | <0.0010 | -- | -- | 0.93 | 150.0 | 6.55 |
| | 4/12/2017 | 2.6 | 0.059 J | -- | 0.019 | <0.0011 | <0.0010 | -- | -- | 0.37 | 144.0 | 6.53 |
| OW-307 | 10/29/2010 | 1.2 | 0.016 J | 54 | 0.00012 J | <0.001 | <0.001 | 43 | 0.1 | 1.49 | 69.9 | 6.98 |
| | 4/21/2011 | 1.3 | 0.071 | 29 | 0.180 | <0.001 | 0.00019 J | 15 | <0.010 | 0.00 | -50.2 | 6.75 |
| | 10/25/2011 | 1.0 | 0.078 | 14 | 0.063 | <0.001 | <0.001 | 6.4 | <0.010 | 0.07 | -212.3 | 6.71 |
| | 4/10/2012 | 0.87 J | 0.050 | 16 | 0.51 | 0.0011 | 0.00017 J | 8.7 | <0.010 | 0.06 | 210 | 6.68 |
| | 10/18/2012 | 1.0 | 0.064 J | 12 | 0.083 | <0.001 | <0.001 | 6.7 | <0.010 | 0.06 | -15 | 6.72 |
| | 4/23/2013 | 0.82 J | 0.42 | 21 | 0.25 | 0.00096 J | <0.001 | 9.4 | 0.010 | 0.06 | -271 | 6.72 |
| | 10/31/2013 | 0.86 J | 0.26 | 15 | 0.37 | <0.001 | <0.001 | 6.7 | <0.010 | 0.08 | 37 | 6.73 |
| | 4/16/2014 | 0.95 J | <0.050 | 15 | 0.22 | 0.0038 | <0.001 | 7.7 | 0.017 J | 0.04 | 41.3 | 6.79 |
| | 10/29/2014 | 1.0 | <0.050 | 14 | 0.12 | <0.0011 | <0.001 | 9.6 | 0.072 | 0.65 | 68.6 | 6.79 |
| | 6/2/2015 | 1.4 | 0.032 J | -- | 0.26 | 0.0039 | <0.001 | -- | -- | 0.03 | 51.2 | 6.74 |
| | 10/19/2015 | 1.5 | <0.050 | -- | 0.53 | 0.0029 | <0.001 | -- | -- | 0.04 | 89.6 | 7.70 |
| | 10/19/2015 DUP | 1.4 | <0.050 | -- | 0.57 | 0.0031 | <0.001 | -- | -- | 0.04 | 89.6 | 7.70 |
| | 3/15/2016 | 1.3 | <0.200 | -- | 0.099 | <1.1 | <1 | -- | -- | 0.73 | 51.0 | 6.76 |
| | 10/26/2016 | 1.3 | <0.200 | -- | 1.1 | <0.0011 | <0.0010 | -- | -- | 0.30 | 81.1 | 6.83 |
| | 4/12/2017 | 1.2 | 3.1 | -- | 6.6 | 0.00078 J | 0.0034 | -- | -- | 0.14 | -48.5 | 6.56 |
| OW-401 | 10/28/2010 | 1.8 | 0.020 J | 42 | 0.018 | <0.001 | <0.001 | 32 | 0.048 | 0.18 | 131.9 | 6.82 |
| | 10/18/2012 | 2.1 | -- | -- | -- | -- | -- | -- | -- | 0.88 | 536 | 6.51 |
| | 10/28/2014 | 2.0 | -- | -- | -- | -- | -- | -- | -- | 0.25 | 55.6 | 6.71 |
| | 10/26/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.15 | -66.5 | 7.17 |
| OW-402L | 10/29/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/20/2011 | 1.7 B | -- | -- | -- | -- | -- | -- | -- | 0.03 | -61.6 | 6.79 |
| | 10/25/2011 | 0.52 J | -- | -- | -- | -- | -- | -- | -- | 0.11 | -93.1 | 6.88 |
| | 4/10/2012 | 0.47 J | -- | -- | -- | -- | -- | -- | -- | 0.02 | 226 | 6.86 |
| | 10/15/2012 | 0.65 J | -- | -- | -- | -- | -- | -- | -- | 0.02 | 160 | 6.95 |
| | 4/23/2013 | 0.85 J | -- | -- | -- | -- | -- | -- | -- | 0.07 | -215 | 6.96 |
| | 10/30/2013 | 0.42 J | -- | -- | -- | -- | -- | -- | -- | 0.03 | 60.2 | 6.98 |
| | 4/16/2014 | 0.71 J | -- | -- | -- | -- | -- | -- | -- | 0.06 | 52.2 | 6.96 |
| | 10/29/2014 | 0.52 J | -- | -- | -- | -- | -- | -- | -- | 0.12 | 70.2 | 7.02 |
| | 10/25/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.11 | 104.0 | 7.09 |

**TABLE 2**
SUMMARY OF GROUNDWATER TESTING RESULTS - BIODEGRADATION PARAMETERS
HP Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Total Organic Carbon | Dissolved Iron | Sulfate | Methane | Ethane | Ethene | Chloride | Nitrate | Dissolved Oxygen | Oxidation-Reduction Potential (mV) | pH (su) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fill/Alluvium Wells** | | | | | | | | | | | | |
| OW-403L | 10/29/2010 | 1.2 | 1.6 | 45 | 0.00038 J | <0.001 | <0.001 | 21 | 1.5 | 0.13 | -16.7 | 6.92 |
| | 4/21/2011 | 0.75 J | 0.020 J | 82 | 0.00097 J | <0.001 | <0.001 | 44 | 0.082 | 0.07 | -37.5 | 6.94 |
| | 10/26/2011 | 0.52 J | 0.047 J | 74 | 0.0029 | <0.001 | <0.001 | 46 | <0.010 | 0.16 | -130.7 | 6.95 |
| | 4/10/2012 | 0.36 J | 0.017 J | 73 | 0.0039 | <0.001 | <0.001 | 50 | 0.027 | 0.07 | 179 | 6.99 |
| | 10/16/2012 | 0.71 J | <0.200 | 72 | 0.013 | <0.001 | <0.001 | 49 | 0.047 | 0.07 | 104 | 7.14 |
| | 4/23/2013 | 0.42 J | <0.200 | 75 | 0.017 | <0.001 | <0.001 | 50 | 0.18 | 0.09 | -284 | 7.03 |
| | 10/30/2013 | 0.46 J | <0.200 | 78 | 0.027 | <0.001 | <0.001 | 49 | 0.45 | 0.04 | 60.8 | 7.03 |
| | 4/16/2014 | 0.69 J | <0.050 | 85 | 0.022 | <0.0011 | <0.001 | 49 | 0.61 | 0.09 | 56.3 | 6.96 |
| | 10/29/2014 | 0.56 J | <0.050 | 86 | 0.014 | <0.0011 | <0.001 | 48 | 0.54 | 0.11 | 51.8 | 7.00 |
| | 10/25/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.20 | 137.3 | 6.99 |
| OW-404L | 6/25/2010 | 8.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/27/2010 | 16 | 0.037 JB | 44 | 0.0025 | <0.001 | <0.001 | 37 | 3.5 | 1.63 | 35.3 | 6.45 |
| | 10/15/2012 | 10 | -- | -- | -- | -- | -- | -- | -- | 3.28 | 158 | 7.01 |
| | 10/27/2014 | 5.3 | -- | -- | -- | -- | -- | -- | -- | 0.18 | 62.6 | 6.50 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.40 | 194.9 | 6.72 |
| OW-405 | 6/24/2010 | NS | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/28/2010 | 3.0 | 0.0093 J | 90 | 0.00016 J | <0.001 | <0.001 | 11 | 3.6 | 1.90 | 34.3 | 6.51 |
| | 10/17/2012 | 1.8 | -- | -- | -- | -- | -- | -- | -- | 3.24 | 191 | 6.45 |
| | 10/29/2014 | 3.3 | -- | -- | -- | -- | -- | -- | -- | 2.84 | 76.7 | 6.56 |
| | 10/28/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 2.66 | 15.3 | 6.47 |
| OW-407 | 10/27/2010 | 0.89 J | 0.013 JB | 17 | 0.00019 J | <0.001 | <0.001 | 16 | 1.4 | 3.14 | 97.6 | 6.65 |
| | 10/16/2012 | 0.95 J | -- | -- | -- | -- | -- | -- | -- | 3.41 | 193 | 6.55 |
| | 10/28/2014 | 0.74 J | -- | -- | -- | -- | -- | -- | -- | 2.56 | 81.8 | 6.48 |
| | 10/28/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 2.67 | 73.1 | 6.58 |
| OW-408 | 6/24/2010 | 1.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/27/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 10/16/2012 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/25/2013 | 0.78 J | -- | -- | -- | -- | -- | -- | -- | 0.24 | 112 | 7.07 |
| | 10/30/2013 | 0.77 J | -- | -- | -- | -- | -- | -- | -- | 0.06 | 10.3 | 7.18 |
| | 4/16/2014 | 0.83 J | -- | -- | -- | -- | -- | -- | -- | 0.07 | 30.5 | 7.04 |
| | 10/28/2014 | 1.2 | -- | -- | -- | -- | -- | -- | 0.072 | 1.05 | -42.5 | 7.05 |
| | 10/28/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.10 | 188.6 | 7.35 |
| WB-1L | 6/25/2010 | 2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/29/2010 | 1.8 | 0.014 J | 19 | 0.0014 | <0.001 | <0.001 | 5.8 | 0.066 | 0.23 | 58.4 | 6.76 |
| | 4/18/2011 | 3.3 B | -- | -- | -- | -- | -- | -- | -- | 0.58 | -32.8 | 6.85 |
| | 10/25/2011 | 1.4 | -- | -- | -- | -- | -- | -- | -- | 0.23 | -225.3 | 6.82 |
| | 4/12/2012 | 1.6 | -- | -- | -- | -- | -- | -- | -- | 0.13 | 260 | 6.77 |
| | 10/15/2012 | 1.6 | -- | -- | -- | -- | -- | -- | -- | 1.04 | 242 | 6.77 |
| | 4/24/2013 | 1.5 | -- | -- | -- | -- | -- | -- | -- | 0.40 | 49 | 6.90 |
| | 10/29/2013 | 1.6 | -- | -- | -- | -- | -- | -- | -- | 0.10 | 7.8 | 6.84 |
| | 4/15/2014 | 1.4 | -- | -- | -- | -- | -- | -- | -- | 0.88 | 58.1 | 6.83 |
| | 10/27/2014 | 1.9 | -- | -- | -- | -- | -- | -- | -- | 0.33 | 60.6 | 6.79 |
| | 6/3/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.33 | 76.6 | 6.73 |
| | 10/19/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.17 | 93.2 | 7.84 |
| | 3/10/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 6.59 | 72.1 | 7.80 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.33 | 110.2 | 6.91 |
| | 4/11/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.34 | 52.3 | 6.91 |
| WB-2L | 6/28/2010 | 4.2 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/26/2010 | 5.7 | 0.089 | 19 | 0.011 | <0.001 | <0.001 | 21 | <0.010 | 0.12 | -182.2 | 6.67 |
| | 4/18/2011 | 4.6 | -- | -- | -- | -- | -- | -- | -- | 0.04 | -175.3 | 6.82 |
| | 10/25/2011 | 2.6 | -- | -- | -- | -- | -- | -- | -- | 0.12 | -179.9 | 6.61 |
| | 4/11/2012 | 2.9 | -- | -- | -- | -- | -- | -- | -- | 0.12 | 47 | 6.57 |
| | 10/15/2012 | 5.3 | -- | -- | -- | -- | -- | -- | -- | 3.60 | 227 | 7.23 |
| | 4/24/2013 | 4.1 | -- | -- | -- | -- | -- | -- | -- | 0.10 | -285 | 6.67 |
| | 10/29/2013 | 5.0 | -- | -- | -- | -- | -- | -- | -- | 0.03 | -152.4 | 6.62 |
| | 4/15/2014 | 5.2 | -- | -- | -- | -- | -- | -- | -- | 1.53 | 65.2 | 7.13 |
| | 10/27/2014 | 2.5 | -- | -- | -- | -- | -- | -- | -- | 0.14 | -157.7 | 6.69 |
| | 6/3/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.31 | 13.7 | 7.22 |
| | 10/19/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.09 | -181.4 | 7.12 |
| | 3/10/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.18 | 22.27 | 6.68 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.26 | 97.3 | 6.68 |
| | 4/11/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.41 | -126.6 | 6.6 |
| WB-3L | 10/27/2010 | 1.0 | 0.021 JB | 20 | 0.00020 J | <0.001 | <0.001 | 12 | 0.15 | 0.24 | -38.5 | 7.00 |
| | 10/17/2012 | 0.78 J | -- | -- | -- | -- | -- | -- | -- | 0.15 | 124 | 6.96 |
| | 4/24/2013 | 0.62 J | <0.200 | 29 | 0.0011 | <0.001 | <0.001 | 22 | 0.56 | 0.25 | 80 | 7.00 |
| | 10/29/2013 | 0.79 J | <0.200 | 31 | 0.00089 J | <0.001 | <0.001 | 23 | 0.67 | 0.23 | 64.3 | 6.96 |
| | 4/15/2014 | 0.78 J | 0.084 | 34 | 0.0020 | <0.0011 | <0.001 | 24 | 0.38 | 0.19 | 70.3 | 6.95 |
| | 10/28/2014 | 0.82 J | <0.050 | 35 | 0.0035 | <0.0011 | <0.001 | 24 | 0.51 | 0.17 | 52.8 | 6.92 |
| | 6/3/2015 | 0.83 J | 0.026 J | -- | 0.0031 | <0.0011 | <0.001 | -- | -- | 0.10 | 64.3 | 6.86 |
| | 6/3/2015 DUP | 0.83 J | <0.050 | -- | 0.0042 | <0.0011 | <0.001 | -- | -- | 0.10 | 64.3 | 6.86 |
| | 10/19/2015 | 1.4 | <0.050 | -- | 0.0026 | <0.0011 | <0.001 | -- | -- | 0.30 | 8.8 | 6.91 |
| | 3/15/2016 | 0.90 J | <0.200 | -- | 0.0029 | <0.0011 | <0.001 | -- | -- | 0.74 | 83.5 | 6.94 |
| | 10/27/2016 | 0.94 J | <0.200 | -- | 0.0026 | <0.0011 | <0.0010 | -- | -- | 0.16 | 228.1 | 6.96 |
| | 4/12/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.43 | 46.7 | 6.92 |
| WB-4L[3] | 6/28/2010 | 1.4 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/26/2010 | 2.3 | 0.019 J | 25 | 0.00024 J | <0.001 | <0.001 | 14 | 0.35 | 0.28 | 60.8 | 6.94 |
| | 10/17/2012 | 1.1 | -- | -- | -- | -- | -- | -- | -- | 0.07 | 105 | 6.96 |
| | 4/24/2013 | 0.94 J | <0.200 | 27 | 0.00099 J | <0.001 | <0.001 | 18 | 0.92 | 0.10 | -189 | 6.99 |
| | 10/29/2013 | 1.0 | <0.200 | 29 | <0.001 | <0.001 | <0.001 | 18 | 1.1 | 0.10 | 56.3 | 6.97 |
| | 4/15/2014 | 0.95 J | <0.050 | 31 | 0.0014 | <0.0011 | <0.001 | 19 | <0.25 | 0.11 | 65.8 | 6.95 |
| | 10/28/2014 | 1.0 | <0.050 | 31 | 0.0020 | <0.0011 | <0.001 | 18 | 0.92 | 0.09 | 69.5 | 6.96 |
| | 6/2/2015 | 1.1 | <0.050 | -- | 0.0024 | <0.0011 | <0.001 | -- | -- | 0.07 | 49.4 | 6.87 |
| | 10/19/2015 | 1.4 | <0.050 | -- | 0.0028 | <0.0011 | <0.001 | -- | -- | 0.30 | 87.2 | 6.56 |
| | 10/19/2015 DUP | 1.3 | <0.050 | -- | 0.0026 | <0.0011 | <0.001 | -- | -- | 0.30 | 87.2 | 6.56 |
| | 3/15/2016 | 1.2 | <0.200 | -- | 0.0046 | <0.0011 | <0.001 | -- | -- | 3.14 | 40.4 | 6.87 |
| | 10/27/2016 | 1.2 | <0.200 | -- | 0.0028 | <0.0011 | <0.0010 | -- | -- | -- | 100.0 | 6.96 |
| | 4/13/2017 | 1.1 | <0.200 | -- | 0.0022 | <0.0011 | <0.0010 | -- | -- | 0.22 | 163.5 | 6.99 |

**Notes:**

1. All units are milligrams per liter (mg/L), except Oxidation-Reduction Potential - millivolts (mV) and pH - standard unit (su).
2. "--" = analyte not tested; "J" = the concentration reported was at or below the reporting limit; "B" = the analyte in question was detected in the associated laboratory blank; "<" = the compound was not detected above the method quantification limit shown; "NS" = no sample was taken because the well was dry or inaccessible.
3. DO readings were not obtained from select wells in October 2016 due to a malfunctioning DO sensor.
4. DO readings were not obtained from IW-2 in April 2017 due to the presence of visible Anaerobic Biochem (ABC) substrate in the well.

**TABLE 2**
SUMMARY OF GROUNDWATER TESTING RESULTS - BIODEGRADATION PARAMETERS
HP Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Total Organic Carbon | Dissolved Iron | Sulfate | Methane | Ethane | Ethene | Chloride | Nitrate | Dissolved Oxygen | Oxidation-Reduction Potential (mV) | pH (su) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Bedrock Wells** | | | | | | | | | | | | |
| BR-308 | 6/25/2010 | 1.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/28/2010 | 1.3 | 0.32 | 38 | 0.011 | <0.001 | <0.001 | 23 | 0.0062 J | 0.24 | -155 | 7.32 |
| | 10/18/2012 | 0.96 J | -- | -- | -- | -- | -- | -- | -- | 0.08 | -104 | 7.16 |
| | 10/28/2014 | 0.76 J | -- | -- | -- | -- | -- | -- | -- | 0.14 | -45.3 | 7.18 |
| | 10/26/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.13 | -124.8 | 7.32 |
| DEC-203R | 10/27/2010 | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| | 4/19/2011 | 0.48 J | -- | -- | -- | -- | -- | -- | -- | 0.27 | -27.2 | 6.42 |
| | 10/27/2011 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 0.10 | 48.7 | 6.64 |
| | 4/12/2012 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 0.07 | 127 | 6.54 |
| | 10/16/2012 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 0.11 | 175 | 6.52 |
| | 10/28/2014 | 1.3 | -- | -- | -- | -- | -- | -- | -- | 0.20 | 88.9 | 6.49 |
| | 10/28/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.20 | 153.3 | 6.50 |
| GZ-504R | 6/25/2010 | 1.8 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/28/2010 | 2.2 | 0.2 | 53 | 0.023 | <0.001 | <0.001 | 14 | 0.015 | 0.27 | -89.5 | 6.98 |
| | 4/19/2011 | 1.1 | 0.140 B | 55 | 0.017 | <0.001 | <0.001 | 20 | <0.010 | 0.04 | -112.9 | 6.96 |
| | 10/25/2011 | 1.5 | 0.020 J | 16 | 0.00070 J | <0.001 | <0.001 | 5.5 | 1.2 | 0.15 | 162.5 | 7.23 |
| | 4/11/2012 | 1.4 | 0.019 J | 58 | 0.00045 J | <0.001 | <0.001 | 21 | 0.19 | 0.07 | 155 | 7.00 |
| | 10/15/2012 | 1.2 | <0.200 | 77 | 0.00035 J | <0.001 | <0.001 | 24 | 0.20 | 0.18 | 218 | 6.95 |
| | 4/24/2013 | 1.6 | <0.200 | 81 | 0.00063 J | <0.001 | <0.001 | 24 | 0.10 | 0.17 | 77 | 7.05 |
| | 10/30/2013 | 0.81 J | <0.200 | 82 | 0.0010 | <0.001 | <0.001 | 23 | <0.01 | 0.10 | 60.27 | 7.05 |
| | 4/15/2014 | 0.85 J | <0.050 | 80 | 0.00090 | <0.0011 | <0.001 | 24 | 0.065 | 0.17 | 53.0 | 6.98 |
| | 10/30/2014 | 0.81 J | <0.050 | 76 | 0.0013 | <0.0011 | <0.001 | 24 | 0.024 J | 0.17 | 62.0 | 7.09 |
| | 6/3/2015 | 0.80 J | <0.050 | -- | 0.0035 | <0.0011 | <0.001 | -- | -- | 0.09 | 70.5 | 6.91 |
| | 10/19/2015 | 1.0 | <0.050 | -- | 0.0019 | <0.0011 | <0.001 | -- | -- | 0.13 | 4.7 | 6.96 |
| | 3/11/2016 | 0.92 J | <0.200 | -- | 0.0015 | 0.00064 J | 0.00072 J | -- | -- | 0.17 | 44.4 | 7.01 |
| | 10/27/2016 | 0.85 J | <0.200 | -- | 0.0049 | <0.0011 | <0.0010 | -- | -- | 0.34 | 104.6 | 7.06 |
| | 4/11/2017 | 1.00 | <0.200 | -- | 0.0013 | <0.0011 | <0.0010 | -- | -- | 0.19 | 89.5 | 6.80 |
| GZ-505R | 6/28/2010 | 0.75 J | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/26/2010 | 1.4 | 0.017 J | 39 | 0.00026 J | <0.001 | <0.001 | 12 | 2.8 | 0.12 | 71.8 | 6.93 |
| | 10/17/2012 | 0.86 J | -- | -- | -- | -- | -- | -- | -- | 0.10 | -37 | 6.95 |
| | 4/24/2013 | 0.53 J | <0.200 | 41 | 0.18 | <0.001 | <0.001 | 19 | 0.93 | 0.18 | 12 | 7.01 |
| | 10/30/2013 | 0.76 J | <0.200 | 38 | 0.24 | <0.001 | <0.001 | 16 | 0.94 | 0.09 | 34.4 | 6.99 |
| | 4/15/2014 | 0.74 J | <0.050 | 35 | 0.033 | <0.0011 | <0.001 | 15 | 0.81 | 0.16 | 30.9 | 6.97 |
| | 10/28/2014 | 0.67 J | <0.050 | 34 | 0.027 | <0.0011 | <0.001 | 14 | 0.96 | 0.12 | 50.7 | 6.97 |
| | 6/2/2015 | 0.72 J | <0.050 | -- | 0.078 | <0.0011 | <0.001 | -- | -- | 0.17 | -13.6 | 6.98 |
| | 10/19/2015 | 0.79 J | <0.050 | -- | 0.021 | <0.0011 | <0.001 | -- | -- | 0.09 | -10.3 | 6.95 |
| | 3/15/2016 | 0.79 J | <0.200 | -- | 0.33 | 0.00071 J | <0.001 | -- | -- | 0.10 | 67.88 | 6.98 |
| | 10/27/2016 | 0.85 J | <0.200 | -- | 0.019 | <0.0011 | <0.0010 | -- | -- | 0.11 | 207.4 | 7.00 |
| | 4/12/2017 | 0.98 J | <0.200 | -- | 0.018 | <0.0011 | <0.0010 | -- | -- | 0.10 | 297.9 | 7.00 |
| GZ-506R | 6/24/2010 | 1.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/29/2010 | 0.86 J | 0.018 J | 64 | 0.00016 J | <0.001 | <0.001 | 18 | 0.93 | 0.90 | -13.1 | 6.81 |
| | 4/19/2011 | <1.0 | 0.033 JB | 56 | 0.00053 J | <0.001 | <0.001 | 28 | 0.78 | 1.15 | -127.3 | 6.70 |
| | 10/27/2011 | 0.57 J | 0.770 | 47 | <0.001 | <0.001 | <0.001 | 19 | 1.5 | 0.71 | -20.4 | 6.92 |
| | 4/12/2012 | 0.51 J | 0.099 | 40 | <0.001 | <0.001 | <0.001 | 24 | 0.73 | 0.30 | 76 | 6.83 |
| | 10/16/2012 | 0.65 J | 0.083 J | 44 | 0.000093 J | <0.001 | <0.001 | 28 | 0.51 | 0.74 | -22 | 6.84 |
| | 4/25/2013 | <1.0 | <0.200 | 49 | <0.001 | <0.001 | <0.001 | 36 | 0.23 | 0.29 | -246 | 6.82 |
| | 10/31/2013 | 0.56 J | <0.200 | 53 | <0.001 | <0.001 | <0.001 | 33 | 0.32 | 0.36 | 77.2 | 6.86 |
| | 4/17/2014 | 0.62 J | <0.050 | 50 | 0.00044 J | <0.0011 | <0.001 | 34 | 0.26 | 0.42 | 47.4 | 6.77 |
| | 10/29/2014 | 0.51 J | 6.5 | 78 | 0.00057 J | <0.0011 | <0.001 | 40 | 0.29 | 6.03 | 43.4 | 7.95 |
| | 6/2/2015 | 0.56 J | <0.050 | -- | 0.0007 | <0.0011 | <0.001 | -- | -- | 1.92 | 58.7 | 6.82 |
| | 10/20/2015 | 1.1 | 0.018 J | -- | 0.00039 J | <0.0011 | <0.001 | -- | -- | 7.46 | 61.1 | 6.83 |
| | 3/15/2016 | <1.0 | 0.110 J | -- | 0.00094 | 0.00093 J | 0.00091 J | -- | -- | 0.34 | 53.8 | 6.81 |
| | 10/25/2016 | 1.1 | 0.58 | -- | 0.016 | 0.00065 J | 0.00066 J | -- | -- | 0.43 | 107.3 | 6.85 |
| | 4/12/2017 | 0.80 J | 0.410 | -- | 0.0084 | <0.0011 | <0.0010 | -- | -- | 0.78 | 39.0 | 6.76 |
| GZ-601R[3] | 4/12/2012 | 1.5 | 0.14 | 61 | 0.019 | 0.00023 J | 0.00060 J | 40 | <0.010 | 0.26 | -3 | 7.36 |
| | 10/16/2012 | 1.2 | 0.25 | 59 | 0.011 | <0.001 | 0.00026 J | 34 | <0.010 | 0.14 | -261 | 7.40 |
| | 4/25/2013 | 0.86 J | 0.21 | 60 | 0.014 | <0.001 | 0.0020 | 34 | <0.010 | 0.10 | -318 | 7.37 |
| | 10/30/2013 | 1.1 | 0.20 | 56 | 0.019 | <0.001 | 0.0018 | 32 | 0.056 | 0.10 | -152.9 | 7.39 |
| | 4/17/2014 | 0.65 J | 0.12 | 55 | 0.013 | <0.0011 | 0.0024 | 29 | <0.050 | 0.14 | -81.3 | 7.31 |
| | 10/30/2014 | 0.58 J | 0.071 | 53 | 0.013 | <0.0011 | 0.00078 J | 28 | <0.050 | 0.30 | -24.5 | 7.39 |
| | 6/3/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.40 | -65.1 | 7.51 |
| | 10/19/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.21 | -67.3 | 7.49 |
| | 3/11/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.32 | -176.7 | 7.42 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 48.0 | 7.42 |
| | 4/12/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.44 | -128.1 | 7.37 |
| GZ-701R | 4/17/2014 | -- | -- | -- | -- | -- | -- | -- | -- | 0.97 | 76.1 | 6.42 |
| | 10/30/2014 | 1.1 | -- | -- | -- | -- | -- | -- | -- | 0.52 | 57.7 | 6.60 |
| | 6/3/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.60 | 12.1 | 6.12 |
| | 10/19/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.46 | 27.4 | 6.81 |
| | 3/11/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.48 | 54.2 | 6.49 |
| | 10/28/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.80 | 12.0 | 6.27 |
| | 4/12/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.49 | 231.5 | 6.50 |
| GZ-702R[3] | 10/30/2014 | 1.5 | -- | -- | -- | -- | -- | -- | -- | 0.63 | 54.8 | 7.37 |
| | 6/3/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.16 | 64.9 | 6.95 |
| | 10/19/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.79 | 12.4 | 6.66 |
| | 3/11/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.23 | -94.9 | 7.42 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | -- | 116.1 | 7.34 |
| | 4/12/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.20 | -80.2 | 7.24 |
| GZ-703R | 4/17/2014 | -- | -- | -- | -- | -- | -- | -- | -- | 0.13 | 30.1 | 7.02 |
| | 10/29/2014 | <1.0 | -- | -- | -- | -- | -- | -- | -- | 0.11 | 72.5 | 7.04 |
| | 6/2/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.25 | 47.1 | 6.95 |
| | 10/19/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.18 | 9.9 | 6.98 |
| | 3/10/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.18 | 48.4 | 7.01 |
| | 10/28/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.27 | 9.6 | 6.88 |
| | 4/12/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.31 | 172.8 | 6.93 |

**TABLE 2**
SUMMARY OF GROUNDWATER TESTING RESULTS - BIODEGRADATION PARAMETERS
HP Voluntary Remediation Project
San German, Puerto Rico

| SAMPLE LOCATION & DATE | | Total Organic Carbon | Dissolved Iron | Sulfate | Methane | Ethane | Ethene | Chloride | Nitrate | Dissolved Oxygen | Oxidation-Reduction Potential (mV) | pH (su) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Fill/Alluvium Wells** | | | | | | | | | | | | |
| OW-304R | 6/24/2010 | <1.0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/29/2010 | 0.55 J | 0.030 J | 43 | 0.019 | <0.001 | 0.00021 J | 16 | 0.91 | 0.09 | -179.8 | 7.49 |
| | 4/21/2011 | 0.52 J | -- | -- | -- | -- | -- | -- | -- | 0.12 | -128.2 | 7.37 |
| | 10/27/2011 | 0.36 J | 0.410 | 46 | 0.0077 | <0.001 | <0.001 | 20 | 1.2 | 0.07 | -105.8 | 7.42 |
| | 4/12/2012 | 0.53 J | 0.021 J | 48 | 0.0076 | <0.001 | <0.001 | 21 | 1.1 | 0.11 | -8 | 7.33 |
| | 10/16/2012 | 0.87 J | -- | 51 | 0.0085 | <0.001 | <0.001 | 23 | 1.2 | 0.76 | -98 | 7.33 |
| | 4/25/2013 | 0.65 J | -- | -- | -- | -- | -- | -- | -- | 0.05 | -344 | 7.30 |
| | 10/31/2013 | 0.74 J | -- | -- | -- | -- | -- | -- | -- | 0.06 | 20.7 | 7.31 |
| | 4/17/2014 | 0.77 J | -- | -- | -- | -- | -- | -- | -- | 0.10 | 14.8 | 7.20 |
| | 10/29/2014 | 0.72 J | -- | -- | -- | -- | -- | -- | -- | 0.59 | 68.8 | 7.27 |
| | 6/2/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.17 | 27.8 | 7.16 |
| | 10/20/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.32 | 41.7 | 7.12 |
| | 3/10/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.07 | 20.9 | 7.24 |
| | 10/26/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.22 | 86.5 | 7.17 |
| | 4/12/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.11 | 75.3 | 7.21 |
| OW-402R | 10/29/2010 | 1.2 | 0.24 | 54 | 0.011 | <0.001 | <0.001 | 24 | 0.17 | 0.09 | -60.9 | 6.95 |
| | 4/20/2011 | 2.9 B | 0.100 | 100 | 0.00020 J | <0.001 | <0.001 | 43 | 0.053 | 0.07 | -93.9 | 6.91 |
| | 10/25/2011 | 1.1 | 0.084 | 76 | 0.0013 | <0.001 | 0.00021 J | 30 | <0.010 | 0.12 | -179.1 | 7.04 |
| | 4/10/2012 | 0.76 J | 0.022 J | 77 | 0.00081 J | <0.001 | 0.00024 J | 34 | 0.086 | 0.08 | 88 | 6.94 |
| | 10/15/2012 | 0.77 J | <0.200 | 75 | 0.00016 J | <0.001 | <0.001 | 35 | 0.14 | 0.09 | 161 | 7.07 |
| | 4/23/2013 | 0.45 J | <0.200 | 72 | <0.002 | <0.002 | <0.002 | 36 | 0.38 | 0.05 | 70 | 7.02 |
| | 10/30/2013 | 0.48 J | <0.200 | 70 | 0.00094 J | <0.001 | <0.001 | 36 | 0.57 | 0.09 | 59.9 | 7.12 |
| | 4/16/2014 | 0.69 J | <0.050 | 70 | 0.00044 J | <0.0011 | <0.001 | 37 | 0.94 | 0.22 | 53.2 | 7.11 |
| | 10/29/2014 | 0.50 J | <0.050 | 69 | 0.00057 J | <0.0011 | <0.001 | 38 | 0.98 | 0.14 | 58.3 | 7.15 |
| | 10/25/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.20 | 61.0 | 7.22 |
| OW-404R | 6/25/2010 | 2.000 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/28/2010 | 2.1 | 0.43 | 23 | 0.031 | <0.001 | <0.001 | 9.8 | <0.010 | 0.12 | -79.5 | 6.72 |
| | 4/19/2011 | 1.2 | 0.390 B | 29 | 0.048 | <0.001 | <0.001 | 9.7 | <0.010 | 0.03 | -123.1 | 6.72 |
| | 10/25/2011 | 1.8 | 0.430 | 25 | 0.050 | 0.00019 J | <0.001 | 9.8 | <0.010 | 0.11 | -50.1 | 6.73 |
| | 4/12/2012 | 1.6 | 0.27 | 29 | 0.058 | 0.00022 J | <0.001 | 9.3 | <0.010 | 0.17 | 114 | 6.67 |
| | 10/15/2012 | 1.7 | 0.34 | 26 | 0.034 | <0.001 | <0.001 | 9.7 | 0.086 | 0.27 | 11 | 6.70 |
| | 4/24/2013 | 1.3 | 0.21 | 27 | 0.046 | <0.001 | <0.001 | 10 | 0.014 | 0.11 | -258 | 6.77 |
| | 10/29/2013 | 1.3 | 0.15 J | 27 | 0.054 | <0.001 | <0.001 | 10 | 0.014 | 0.06 | 13.6 | 6.73 |
| | 4/15/2014 | 1.6 | 0.12 | 25 | 0.026 | <0.0011 | <0.001 | 9.2 | <0.050 | 0.28 | 20.7 | 6.72 |
| | 10/27/2014 | 1.5 | 0.083 | 24 | 0.058 | <0.0011 | <0.001 | 10 | 0.027 J | 0.19 | 41.3 | 6.68 |
| | 6/3/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.17 | 8.8 | 6.71 |
| | 10/19/2015 | -- | -- | -- | -- | -- | -- | -- | -- | 0.13 | -45.5 | 6.70 |
| | 3/10/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.16 | -9.8 | 6.72 |
| | 10/27/2016 | -- | -- | -- | -- | -- | -- | -- | -- | 0.17 | 39.4 | 6.74 |
| | 4/11/2017 | -- | -- | -- | -- | -- | -- | -- | -- | 0.40 | 15.4 | 6.76 |

**Notes:**

1. All units are milligrams per liter (mg/L), except Oxidation-Reduction Potential - millivolts (mV) and pH - standard unit (su).
2. "--" = analyte not tested; "J" = the concentration reported was at or below the reporting limit; "B" = the analyte in question was detected in the associated laboratory blank; "<" = the compound was not detected above the method quantification limit shown; "NS" = no sample was taken because the well was dry or inaccessible.
3. DO readings were not obtained from select wells in October 2016 due to a malfunctioning DO sensor.

**TABLE 3**
INTRINSIC BIODEGRADATION SAMPLING PROGRAM - APRIL 2017
HP Voluntary Remediation Project
San German, Puerto Rico

| WELL ID | SAMPLED (YES/NO) | PARAMETERS | | RATIONALE FOR NOT SAMPLING |
|---|---|---|---|---|
| | | VOCs[1] | VOCs and IB Parameters[2] | |
| **Wells sampled October 2016 in accordance with the Intrinsic Biodegradation Work Plan** | | | | |
| **Alluvium/Fill** | | | | |
| GZ-504U | NO | x | | Well did not recharge within 48 hours after being purged dry. |
| GZ-519U | YES | | x | |
| GZ-702U | YES | x | | |
| IW-1 | YES | | x | |
| OW-101 | YES | | x | |
| OW-402U | NO | x | | Well was dry. |
| OW-404U | YES | x | | |
| WB-1U | YES | x | | |
| WB-2U | YES | x | | |
| **Saprolite** | | | | |
| GZ-501L | YES | x | | |
| GZ-503L | YES | | x | |
| GZ-504L | YES | | x | |
| GZ-701L | YES | x | | |
| IW-2 | YES | | x | |
| IW-3 | YES | | x | |
| OW-101L | YES | x | | |
| OW-304L | YES | | x | See Note 3 |
| OW-307 | YES | | x | |
| WB-1L | YES | x | | |
| WB-2L | YES | x | | |
| WB-3L | YES | x | | See Note 3. IB samples not collected due to incorrect bottles being supplied by the lab. |
| WB-4L | YES | | x | |
| **Bedrock** | | | | |
| GZ-504R | YES | | x | |
| GZ-505R | YES | | x | See Note 3 |
| GZ-506R | YES | | x | |
| GZ-601R | YES | x | | |
| GZ-701R | YES | x | | See Note 3 |
| GZ-702R | YES | x | | See Note 3 |
| GZ-703R | YES | x | | See Note 3 |
| OW-304R | YES | x | | |
| OW-404R | YES | x | | |

**Notes:**
1. "VOCs" indicates analysis limited to only chlorinated volatile organic compounds (cVOCs) and the field parameters - dissolved oxygen (DO), pH, and oxidation-reduction potential (ORP)

2. "VOCs and IB Parameters" indicates analysis of cVOCs, dissolved iron, methane, ethene, ethane, total organic carbon (TOC), and the field parameters DO, pH, and ORP.

3. Note wells OW-304L, WB-3L, GZ-505R,GZ-701R, GZ-702R, and GZ-703R were also sampled for VOCs only in June 2017.

**TABLE 4**
SUMMARY OF GROUNDWATER ELEVATION DATA
HP Voluntary Remediation Project
San German, Puerto Rico

| Date | GROUNDWATER ELEVATION DATA [1] | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BR-308 | DEC-203R | DEC-204O | GZ-501U | GZ-501L | GZ-502L | GZ-503U | GZ-503L | GZ-504U | GZ-504L | GZ-504R | GZ-505L | GZ-505R | GZ-506U | GZ-506R | GZ-507R | GZ-508R | GZ-509R | GZ-510R |
| *Ref as of 8/16/14* | *138.72* | *156.35* | *156.44* | *135.77* | *136.03* | *135.96* | *136.09* | *136.08* | *130.62* | *130.70* | *130.83* | *132.82* | *132.77* | *146.66* | *146.48* | *133.19* | *128.14* | *128.73* | *130.51* |
| 01/26/11 | 115.00 | 121.38 | 121.44 | 130.57 | 114.98 | 114.66 | 128.49 | 115.03 | 120.90 | 114.65 | 114.53 | 114.67 | 114.27 | 140.09 | 115.76 | 114.18 | 113.58 | 113.12 | 114.28 |
| 02/28/11 | 114.71 | 123.05 | 123.03 | 129.94 | 114.68 | 114.72 | 129.71 | 114.47 | 120.84 | 114.44 | 114.34 | 114.56 | 114.38 | 138.81 | 115.43 | 112.12 | 111.68 | 111.19 | 112.31 |
| 03/24/11 | 114.67 | 124.63 | 124.78 | 129.99 | 114.36 | 114.42 | 129.67 | 114.34 | 120.71 | 114.38 | 114.24 | 114.28 | 114.01 | 140.33 | 115.29 | 113.22 | 112.87 | 112.35 | 113.37 |
| 4/19,26/2011 | 114.42 | 123.45 | 123.48 | 131.24 | 114.47 | 114.55 | 130.18 | 114.35 | 119.69 | 114.38 | 114.19 | 114.04 | 113.93 | 139.66 | 115.76 | 112.58 | 111.84 | 111.32 | 112.48 |
| 07/21/11 | 115.32 | 129.66 | 129.68 | 130.32 | 115.22 | 115.16 | 128.61 | 114.96 | 120.91 | 114.61 | 114.51 | 114.62 | 114.93 | 139.86 | 116.48 | 112.68 | 111.50 | 110.99 | 112.30 |
| 10/27,28/2011 | 119.12 | 132.11 | 132.21 | 132.52 | 119.03 | 118.96 | 132.31 | 117.48 | 120.87 | 118.45 | 117.83 | 117.59 | 117.77 | 140.94 | 121.48 | 110.90 | 114.32 | 113.69 | 115.44 |
| 01/27/12 | 115.07 | 130.35 | 129.64 | 129.65 | 115.03 | 114.96 | 127.99 | 114.73 | 120.87 | 114.45 | 114.33 | 114.32 | 114.32 | <139.04 | 115.98 | 112.09 | 111.20 | 110.72 | 111.87 |
| 04/09/12 | 115.92 | 128.86 | 128.74 | 133.94 | 115.63 | 115.23 | 129.51 | 115.23 | 120.88 | 115.00 | 114.66 | 115.14 | 114.86 | 140.15 | 116.39 | 112.82 | 111.85 | 111.31 | 112.64 |
| 07/24/12 | 115.07 | 127.63 | 127.44 | 131.24 | 114.93 | 114.81 | 129.29 | 114.68 | <117.62 | 114.40 | 114.23 | 114.62 | 114.37 | 139.73 | 115.88 | 112.00 | 111.08 | 110.57 | 111.98 |
| 10/12/12 | 116.40 | 129.78 | 130.12 | 132.78 | 116.72 | 116.03 | 130.24 | 115.23 | <117.62 | 114.90 | 115.53 | 115.82 | 115.80 | 139.99 | 118.25 | 113.68 | 111.88 | 111.28 | 112.98 |
| 01/16/13 | 115.32 | 130.35 | 130.19 | 129.57 | 116.23 | 114.96 | 127.09 | 114.88 | <117.62 | 114.55 | 114.33 | 114.82 | 114.52 | 139.35 | 116.33 | 111.49 | 110.36 | 109.84 | 111.36 |
| 04/22/13 | 115.17 | 126.95 | 126.49 | 131.44 | 115.08 | 114.96 | 131.09 | 114.76 | <117.62 | 114.53 | 114.48 | 114.22 | 114.47 | 139.83 | 116.08 | 111.84 | 110.97 | 110.49 | 112.00 |
| 07/18/13 | 116.02 | 127.60 | 128.09 | 134.37 | 115.96 | 115.71 | 130.32 | 115.63 | <117.62 | 115.40 | 115.03 | 115.42 | 115.22 | 140.21 | 117.34 | 112.95 | 111.74 | 111.12 | 112.76 |
| 10/28/13 | 115.42 | 129.50 | 128.89 | 129.87 | 115.28 | 115.16 | 128.44 | 114.93 | <117.62 | 114.60 | 114.48 | 114.82 | 114.62 | 139.56 | 116.36 | 112.43 | 111.45 | 110.79 | 112.40 |
| 01/22/14 | 114.82 | 128.72 | 128.15 | 130.06 | 114.78 | 114.77 | 127.96 | 114.64 | <117.62 | 114.34 | 114.17 | 114.57 | 114.37 | 139.86 | 115.68 | 111.53 | 110.71 | 110.26 | 111.62 |
| 04/18/14 | 116.32 | 127.85 | 127.84 | 133.67 | 116.33 | 116.11 | 131.29 | 115.73 | <117.62 | 115.55 | 115.28 | 115.32 | 115.27 | 140.31 | 118.28 | --- | 111.63 | 110.99 | 112.52 |
| 07/26/14 | 114.44 | 125.35 | 125.99 | 129.57 | 114.33 | 114.26 | 128.64 | 114.22 | <117.62 | 113.94 | 113.83 | 113.92 | 113.97 | 139.66 | 114.98 | 110.87 | 110.46 | 109.88 | 111.25 |
| 10/26/14 | 116.30 | 128.26 | 128.49 | 131.30 | 116.17 | 116.00 | 129.48 | 115.68 | <117.62 | 115.44 | 115.16 | 115.26 | 115.28 | 137.71 | 117.44 | 112.50 | 111.21 | 110.60 | 112.31 |
| 06/01/15 | 116.16 | 128.21 | 128.11 | 131.95 | 116.06 | 115.88 | 130.90 | 115.51 | <117.62 | 115.29 | 115.08 | 115.32 | 115.07 | 140.12 | 117.62 | 111.69 | 112.19 | 109.10 | 112.39 |
| 10/18/15 | 115.26 | 127.28 | 127.13 | 131.04 | 115.34 | 115.15 | 130.17 | 115.09 | <117.62 | 114.87 | 114.65 | 114.96 | 114.90 | 139.97 | 116.59 | 111.36 | 111.70 | 108.96 | 111.98 |
| 03/07/16 | 115.61 | 125.63 | 125.53 | 131.87 | 115.48 | 115.39 | 126.33 | 101.75 | 121.27 | 115.00 | 114.87 | 115.28 | 115.01 | 140.56 | 116.67 | --- | --- | --- | --- |
| 10/24/16 | 118.52 | 133.54 | 133.13 | 132.03 | 118.31 | 117.58 | 131.79 | 117.59 | 121.17 | 116.30 | 116.92 | 115.88 | 116.36 | 139.90 | 120.17 | --- | --- | --- | --- |
| 04/10/17 | 115.72 | 133.55 | 128.00 | 130.63 | 115.02 | 114.93 | 128.82 | 114.91 | 121.25 | 114.55 | 114.38 | 114.68 | 115.49 | 139.56 | 115.93 | --- | --- | --- | --- |
| | WELL CONSTRUCTION INFORMATION | | | | | | | | | | | | | | | | | | |
| Bottom of Boring [2] | 164.00 | 58.00 | 40.00 | 8.00 | 33.50 | 35.00 | 8.40 | 35.00 | 13.00 | 30.00 | 51.00 | 27.00 | 59.00 | 10.00 | 81.00 | 60.00 | 39.50 | 54.00 | 79.00 |
| Boring Bottom Elevation [1] | -25.28 | 98.35 | 116.44 | 127.77 | 102.53 | 100.96 | 127.69 | 101.08 | 117.62 | 100.70 | 79.83 | 105.82 | 73.77 | 136.66 | 65.48 | 73.19 | 88.64 | 74.73 | 51.51 |
| Bottom Screen Elevation [1] | --- | 98.35 | 116.44 | 127.77 | 102.53 | 101.96 | 127.69 | 101.08 | 117.62 | 102.20 | 79.83 | 105.82 | 73.77 | 137.66 | 65.48 | 73.69 | 88.64 | 74.73 | 51.51 |
| Bottom of Screen [2] | --- | 58.00 | 40.00 | 8.00 | 33.50 | 34.00 | 8.40 | 35.00 | 13.00 | 28.50 | 51.00 | 27.00 | 59.00 | 9.00 | 81.00 | 59.50 | 39.50 | 54.00 | 79.00 |
| Date | DEPTH TO WATER MEASUREMENTS [2] | | | | | | | | | | | | | | | | | | |
| | BR-308 | DEC-203R | DEC-204O | GZ-501U | GZ-501L | GZ-502L | GZ-503U | GZ-503L | GZ-504U | GZ-504L | GZ-504R | GZ-505L | GZ-505R | GZ-506U | GZ-506R | GZ-507R | GZ-508R | GZ-509R | GZ-510R |
| *Ref as of 8/16/14* | *138.72* | *156.35* | *156.44* | *135.77* | *136.03* | *135.96* | *136.09* | *136.08* | *130.62* | *130.70* | *130.83* | *132.82* | *132.77* | *146.66* | *146.48* | *133.19* | *128.14* | *128.73* | *130.51* |
| 01/26/11 | 23.72 | 34.97 | 35.00 | 5.20 | 21.05 | 21.30 | 7.60 | 21.05 | 9.72 | 16.05 | 16.30 | 18.15 | 18.50 | 6.57 | 30.72 | --- | --- | --- | --- |
| 02/28/11 | 24.01 | 33.30 | 33.41 | 5.83 | 21.35 | 21.24 | 6.38 | 21.61 | 9.78 | 16.26 | 16.49 | 18.26 | 18.39 | 7.85 | 31.05 | --- | --- | --- | --- |
| 03/24/11 | 24.05 | 31.72 | 31.66 | 5.78 | 21.67 | 21.54 | 6.42 | 21.74 | 9.91 | 16.32 | 16.59 | 18.54 | 18.76 | 6.33 | 31.19 | --- | --- | --- | --- |
| 04/26/11 | 24.30 | 32.90 | 32.96 | 4.53 | 21.56 | 21.41 | 5.91 | 21.73 | 10.93 | 16.32 | 16.64 | 18.78 | 18.84 | 7.00 | 30.72 | --- | --- | --- | --- |
| 07/21/11 | 23.40 | 26.69 | 26.76 | 5.45 | 20.81 | 20.80 | 7.48 | 21.12 | 9.71 | 16.09 | 16.32 | 18.20 | 17.84 | 6.80 | 30.00 | --- | --- | --- | --- |
| 10/28/11 | 19.60 | 24.24 | 24.23 | 3.25 | 17.00 | 17.00 | 3.78 | 18.60 | 9.75 | 12.25 | 13.00 | 15.23 | 15.00 | 5.72 | 25.00 | --- | --- | --- | --- |
| 01/27/12 | 23.65 | 26.00 | 26.80 | 6.12 | 21.00 | 21.00 | 8.10 | 21.35 | 9.75 | 16.25 | 16.50 | 18.50 | 18.45 | dry | 30.50 | --- | --- | --- | --- |
| 04/09/12 | 22.80 | 27.49 | 27.70 | 1.83 | 20.40 | 20.73 | 6.58 | 20.85 | 9.74 | 15.70 | 16.17 | 17.68 | 17.91 | 6.51 | 30.09 | --- | --- | --- | --- |
| 07/24/12 | 23.65 | 28.72 | 29.00 | 4.53 | 21.10 | 21.15 | 6.80 | 21.40 | dry | 16.30 | 16.60 | 18.20 | 18.40 | 6.93 | 30.60 | --- | --- | --- | --- |
| 10/12/12 | 22.32 | 26.57 | 26.32 | 2.99 | 19.31 | 19.93 | 5.85 | 20.85 | dry | 15.80 | 15.30 | 17.00 | 16.97 | 6.67 | 28.23 | --- | --- | --- | --- |
| 01/16/13 | 23.40 | 26.00 | 26.25 | 6.20 | 19.80 | 21.00 | 9.00 | 21.20 | dry | 16.15 | 16.50 | 18.00 | 18.25 | 7.31 | 30.15 | --- | --- | --- | --- |
| 04/22/13 | 23.55 | 29.40 | 29.95 | 4.33 | 20.95 | 21.00 | 5.00 | 21.32 | dry | 16.17 | 16.35 | 18.60 | 18.30 | 6.83 | 30.40 | --- | --- | --- | --- |
| 07/18/13 | 22.70 | 28.75 | 28.35 | 1.40 | 20.07 | 20.25 | 5.77 | 20.45 | dry | 15.30 | 15.80 | 17.40 | 17.55 | 6.45 | 29.14 | --- | --- | --- | --- |
| 10/28/13 | 23.30 | 26.85 | 27.55 | 5.90 | 20.75 | 20.80 | 7.65 | 21.15 | dry | 16.10 | 16.35 | 18.00 | 18.15 | 7.10 | 30.12 | --- | --- | --- | --- |
| 01/22/14 | 23.90 | 27.63 | 28.29 | 5.71 | 21.25 | 21.19 | 8.13 | 21.44 | dry | 16.36 | 16.66 | 18.25 | 18.40 | 6.80 | 30.80 | --- | --- | --- | --- |
| 04/18/14 | 22.40 | 28.50 | 28.60 | 2.10 | 19.70 | 19.85 | 4.80 | 20.35 | dry | 15.15 | 15.55 | 17.50 | 17.50 | 6.35 | 28.20 | --- | --- | --- | --- |
| 07/26/14 | 24.28 | 31.00 | 30.45 | 6.20 | 21.70 | 21.70 | 7.45 | 21.86 | dry | 16.76 | 17.00 | 18.90 | 18.80 | 7.00 | 31.50 | --- | --- | --- | --- |
| 10/26/14 | 22.42 | 28.09 | 27.95 | 4.47 | 19.86 | 19.96 | 6.61 | 20.4 | dry | 15.26 | 15.67 | 17.56 | 17.49 | 8.95 | 29.04 | --- | --- | --- | --- |
| 06/01/15 | 22.56 | 28.14 | 28.33 | 3.82 | 19.97 | 20.08 | 5.19 | 20.57 | dry | 15.41 | 15.75 | 17.50 | 17.70 | 6.54 | 28.86 | --- | --- | --- | --- |
| 10/18/15 | 23.46 | 29.07 | 29.31 | 4.73 | 20.69 | 20.81 | 5.92 | 20.99 | dry | 15.83 | 16.18 | 17.86 | 17.87 | 6.69 | 29.89 | --- | --- | --- | --- |
| 03/07/16 | 23.11 | 30.72 | 30.91 | 3.90 | 20.55 | 20.57 | 9.76 | 34.33 | 9.35 | 15.70 | 15.96 | 17.54 | 17.76 | 6.10 | 29.81 | --- | --- | --- | --- |
| 10/24/16 | 20.20 | 22.81 | 23.31 | 3.74 | 17.72 | 18.38 | 4.30 | 18.49 | 9.45 | 14.40 | 13.91 | 16.94 | 16.41 | 6.76 | 26.31 | --- | --- | --- | --- |
| 04/10/17 | 23.00 | 22.80 | 28.44 | 5.14 | 21.01 | 21.03 | 7.27 | 21.17 | 9.37 | 16.15 | 16.45 | 18.14 | 17.28 | 7.10 | 30.55 | --- | --- | --- | --- |

**Notes:**
1. Groundwater elevations are in units of feet. Elevations are given relative to Lajas 2 (PID AB9841, NGVD 29) in Sabana Grande, Puerto Rico with elevation 200.27 feet.
2. Depth to water, bottom of boring, and bottom of screen units are feet below measuring point. Measurements are made from the top of the PVC riser of each well.
3. All groundwater level measurements were made by JFA, On Site, and/or GZA personnel. Measurements were made using a water level indicator except for measurements at wells GZ-507R, GZ-508R, GZ-509R, GZ510R, GZ-512R, and GZ-513R which were made using pressure transducers.
4. Water levels have been measured at times and under conditions stated in the text. Fluctuations in the levels of groundwater may occur due to variations in temperature, rainfall, and other factors.
5. Reference elevations were surveyed by Jose O Quinones Moret, BS, PLS of Puerto Rico.
6. Other Notes:
   "dry" indicates water was not observed within the monitoring well.
   "<" signifies less than - elevation shown is for the bottom of the well.
   "---" signifies that a water level measurement was not obtained.
7. The end of December 2010 groundwater level round was conducted on January 5, 2011 due to the holidays.
8. For October 12, 2012 data, the original GZ-601R elevation appeared to be the result of a field error. Because the groundwater elevations in GZ-601L and GZ-601R on October 16, 2012 were equal, the October 12, 2012 GZ-601R elevation is assumed to be equal to the GZ-601L elevation on that date.
9. Reference elevations were re-surveyed on August 16, 2014. All previous groundwater elevations were adjusted to reflect the new survey information.

**TABLE 4**
SUMMARY OF GROUNDWATER ELEVATION DATA
HP Voluntary Remediation Project
San German, Puerto Rico

| Date | GROUNDWATER ELEVATION DATA | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GZ-511U | GZ-512R | GZ-513R | GZ-515U | GZ-519U | GZ-601L | GZ-601R | GZ-701L | GZ-701R | GZ-702U | GZ-702R | GZ-703R | OW-1 | OW-101 | OW-101L | OW-102 | OW-105 | OW-301 | OW-304U | OW-304L |
| *Ref as of 8/16/14* | *141.84* | *128.63* | *129.15* | *127.85* | *147.02* | *127.69* | *127.88* | *153.33* | *151.93* | *125.58* | *125.66* | *139.97* | *159.27* | *145.24* | *145.78* | *146.11* | *145.88* | *149.29* | *150.03* | *149.91* |
| 01/26/11 | 138.09 | 113.69 | 111.37 | 123.40 | 140.24 | --- | --- | --- | --- | --- | --- | --- | 126.99 | 133.24 | 118.78 | 116.11 | 142.98 | 128.34 | 140.11 | 116.34 |
| 02/28/11 | 136.63 | 111.54 | 109.40 | 120.76 | 143.83 | --- | --- | --- | --- | --- | --- | --- | 127.27 | 134.03 | 120.05 | 115.60 | 142.96 | 128.14 | 140.09 | 116.01 |
| 03/24/11 | 136.08 | 113.35 | 110.51 | 116.60 | 143.81 | --- | --- | --- | --- | --- | --- | --- | 128.45 | 133.92 | 119.96 | 115.66 | 141.93 | 128.79 | 140.02 | 115.94 |
| 4/19,26/2011 | 135.86 | 111.89 | 109.48 | 124.40 | 144.10 | --- | --- | --- | --- | --- | --- | --- | 126.82 | 134.37 | 120.80 | 116.75 | 141.10 | 127.19 | 140.08 | 115.00 |
| 07/21/11 | 138.24 | 111.56 | 109.14 | 124.41 | 139.89 | --- | --- | --- | --- | --- | --- | --- | 132.60 | 134.74 | 125.48 | 117.01 | 143.68 | 129.66 | 140.33 | 118.11 |
| 10/27,28/2011 | 138.17 | 116.91 | 111.81 | 124.35 | 141.72 | --- | --- | --- | --- | --- | --- | --- | 135.98 | 135.82 | 129.36 | 122.88 | 142.74 | 131.31 | 142.60 | 121.30 |
| 01/27/12 | 135.64 | 111.24 | 108.77 | 121.76 | 139.54 | --- | --- | --- | --- | --- | --- | --- | 131.76 | 134.11 | 125.28 | 116.33 | 143.43 | 128.49 | 141.06 | 117.36 |
| 04/09/12 | 135.22 | 111.88 | 109.21 | 122.46 | 140.02 | 114.04 | 113.68 | --- | --- | --- | --- | --- | 131.10 | 134.16 | 125.44 | 117.24 | 142.95 | 128.69 | 141.18 | 117.97 |
| 07/24/12 | 137.74 | 109.53 | 108.43 | 120.90 | 140.07 | 113.59 | 113.63 | --- | --- | --- | --- | --- | 129.47 | 135.09 | 124.13 | 117.21 | 143.13 | 128.29 | 141.23 | 116.81 |
| 10/12/12 | 138.84 | 114.47 | 109.30 | 123.54 | 140.39 | 114.34 | 114.35 | --- | --- | --- | --- | --- | 132.08 | 135.34 | 127.21 | 119.31 | 143.25 | 130.58 | 141.53 | 119.58 |
| 01/16/13 | 135.34 | 112.82 | 107.79 | 117.85 | 139.47 | 113.69 | 113.58 | --- | --- | --- | --- | --- | 132.52 | 134.34 | 126.18 | 116.76 | 142.93 | 129.29 | 141.13 | 117.91 |
| 04/22/13 | 138.79 | 113.10 | 108.41 | 123.75 | 142.72 | 113.64 | 113.63 | --- | --- | --- | --- | --- | 128.92 | 135.29 | 123.18 | 116.55 | 143.05 | 127.74 | <141.48 | 117.31 |
| 07/18/13 | 139.04 | 114.18 | 109.02 | 124.95 | 140.92 | 114.34 | 114.51 | --- | --- | --- | --- | --- | 129.83 | 135.24 | 126.03 | 118.41 | 143.58 | --- | 141.43 | 117.98 |
| 10/28/13 | 136.79 | 113.85 | 108.66 | 120.65 | 139.87 | 113.74 | 113.99 | --- | --- | --- | --- | --- | 130.62 | 134.72 | 125.28 | 116.71 | 142.88 | 129.17 | 141.03 | 117.44 |
| 01/22/14 | 135.64 | 113.02 | 108.07 | 123.63 | 139.42 | 113.59 | 113.75 | --- | --- | --- | --- | --- | 130.27 | 134.14 | 124.45 | 116.01 | 143.13 | 128.05 | 141.21 | 116.72 |
| 04/18/14 | 139.24 | 114.03 | 108.76 | 124.15 | 141.02 | 114.37 | 114.28 | 117.53 | 117.43 | 114.46 | --- | 122.27 | 130.37 | 134.96 | 125.38 | 119.61 | 143.53 | 129.94 | 141.85 | 118.61 |
| 07/26/14 | 137.08 | 106.60 | 107.60 | 122.64 | 139.80 | 113.23 | 113.18 | 115.72 | 114.81 | 118.38 | --- | 119.17 | 127.29 | 131.74 | 122.30 | 115.31 | 142.88 | 126.67 | 140.33 | 115.31 |
| 10/26/14 | 138.71 | 111.14 | 108.30 | 121.00 | 140.70 | 114.04 | 114.19 | 118.43 | 118.29 | 114.28 | 113.99 | 122.73 | 129.54 | 136.58 | 126.03 | 117.99 | 143.48 | 130.45 | 141.53 | 118.80 |
| 06/01/15 | 138.83 | 111.45 | 107.08 | 122.88 | 140.82 | 114.16 | 113.96 | 116.97 | 116.75 | 114.20 | 113.98 | 121.86 | 129.71 | 135.63 | 125.66 | 118.65 | 143.23 | 129.51 | 140.44 | 117.78 |
| 10/18/15 | 137.75 | 111.26 | 106.87 | 122.74 | 140.70 | 114.02 | 113.89 | 116.90 | 116.68 | 114.11 | 114.17 | 120.11 | 129.00 | 134.93 | 123.24 | 116.22 | 140.80 | 127.08 | <140.03 | 115.94 |
| 03/07/16 | 138.80 | --- | --- | 126.69 | 140.83 | 114.28 | 114.13 | 116.83 | 115.27 | 114.34 | 114.12 | 120.06 | 126.82 | 134.91 | 122.38 | 117.78 | 143.86 | 127.89 | 140.01 | 116.21 |
| 10/24/16 | 138.80 | --- | --- | 122.55 | 140.85 | 115.49 | 115.58 | 119.78 | 121.63 | 115.50 | 115.30 | 126.28 | 134.53 | 135.94 | 130.88 | 121.00 | 143.69 | 133.73 | 141.52 | 122.25 |
| 04/10/17 | 136.30 | --- | --- | 124.08 | 139.47 | 113.65 | 113.64 | 120.57 | 115.43 | 113.85 | 113.62 | 120.31 | 130.39 | 134.79 | 124.09 | 115.06 | 142.93 | 128.15 | 141.02 | 116.39 |
| | WELL CONSTRUCTION INFORMATION | | | | | | | | | | | | | | | | | | | |
| Bottom of Boring [2] | 10.00 | 65.00 | 54.00 | 14.00 | 12.50 | 34.00 | 80.00 | 54.00 | 75.00 | 28.00 | 55.00 | 52.00 | 44.58 | 20.00 | 34.00 | 40.00 | 19.00 | 43.00 | 10.00 | 54.80 |
| Boring Bottom Elevation [1] | 131.84 | 63.63 | 75.15 | 113.85 | 134.52 | 93.69 | 47.88 | 99.33 | 76.93 | 97.58 | 70.66 | 87.97 | 114.69 | 125.24 | 111.78 | 106.11 | 126.88 | 106.29 | 140.03 | 95.11 |
| Bottom Screen Elevation [1] | 131.84 | 64.63 | 79.65 | 115.85 | 134.52 | 93.69 | 50.88 | 99.33 | 76.93 | 101.58 | 70.66 | 87.97 | 122.87 | 129.24 | 111.78 | 108.41 | 132.88 | 108.29 | 140.03 | 96.01 |
| Bottom of Screen [2] | 10.00 | 64.00 | 49.50 | 12.00 | 12.50 | 34.00 | 77.00 | 54.00 | 75.00 | 24.00 | 55.00 | 52.00 | 36.40 | 16.00 | 34.00 | 37.70 | 13.00 | 41.00 | 10.00 | 53.90 |
| **Date** | **DEPTH TO WATER MEASUREMENTS** | | | | | | | | | | | | | | | | | | | |
| | **GZ-511U** | **GZ-512R** | **GZ-513R** | **GZ-515U** | **GZ-519U** | **GZ-601L** | **GZ-601R** | **GZ-701L** | **GZ-701R** | **GZ-702U** | **GZ-702R** | **GZ-703R** | **OW-1** | **OW-101** | **OW-101L** | **OW-102** | **OW-105** | **OW-301** | **OW-304U** | **OW-304L** |
| *Ref as of 8/16/14* | *141.84* | *128.63* | *129.15* | *127.85* | *147.02* | *127.69* | *127.88* | *153.33* | *151.93* | *125.58* | *125.66* | *139.97* | *159.27* | *145.24* | *145.78* | *146.11* | *145.88* | *149.29* | *150.03* | *149.91* |
| 01/26/11 | 3.75 | --- | --- | 4.45 | 6.78 | --- | --- | --- | --- | --- | --- | --- | 32.28 | 12.00 | 27.00 | 30.00 | 2.90 | 20.95 | 9.92 | 33.57 |
| 02/28/11 | 5.21 | --- | --- | 7.09 | 3.19 | --- | --- | --- | --- | --- | --- | --- | 32.00 | 11.21 | 25.73 | 30.51 | 2.92 | 21.15 | 9.94 | 33.90 |
| 03/24/11 | 5.76 | --- | --- | 11.25 | 3.21 | --- | --- | --- | --- | --- | --- | --- | 30.82 | 11.32 | 25.82 | 30.45 | 3.95 | 20.50 | 10.01 | 33.97 |
| 04/26/11 | 5.98 | --- | --- | 3.45 | 2.92 | --- | --- | --- | --- | --- | --- | --- | 32.45 | 10.87 | 24.98 | 29.36 | 4.78 | 22.10 | 9.95 | 34.91 |
| 07/21/11 | 3.60 | --- | --- | 3.44 | 7.13 | --- | --- | --- | --- | --- | --- | --- | 26.67 | 10.50 | 20.30 | 29.10 | 2.20 | 19.63 | 9.70 | 31.80 |
| 10/28/11 | 3.67 | --- | --- | 3.50 | 5.30 | --- | --- | --- | --- | --- | --- | --- | 23.29 | 9.42 | 16.42 | 23.23 | 3.14 | 17.98 | 7.43 | 28.61 |
| 01/27/12 | 6.20 | --- | --- | 6.09 | 7.48 | --- | --- | --- | --- | --- | --- | --- | 27.51 | 11.13 | 20.50 | 29.78 | 2.45 | 20.80 | 8.97 | 32.55 |
| 04/09/12 | 6.62 | --- | --- | 5.39 | 7.00 | 13.65 | 14.20 | --- | --- | --- | --- | --- | 28.17 | 11.08 | 20.34 | 28.87 | 2.93 | 20.60 | 8.85 | 31.94 |
| 07/24/12 | 4.10 | --- | --- | 6.95 | 6.95 | 14.10 | 14.25 | --- | --- | --- | --- | --- | 29.80 | 10.15 | 21.65 | 28.90 | 2.75 | 21.00 | 8.80 | 33.10 |
| 10/12/12 | 3.00 | --- | --- | 4.31 | 6.63 | 13.35 | 13.53 | --- | --- | --- | --- | --- | 27.19 | 9.90 | 18.57 | 26.80 | 2.63 | 18.71 | 8.50 | 30.33 |
| 01/16/13 | 6.50 | --- | --- | 10.00 | 7.55 | 14.00 | 14.30 | --- | --- | --- | --- | --- | 26.75 | 10.90 | 19.60 | 29.35 | 2.95 | 20.00 | 8.90 | 32.00 |
| 04/22/13 | 3.05 | --- | --- | 4.10 | 4.30 | 14.05 | 14.25 | --- | --- | --- | --- | --- | 30.35 | 9.95 | 22.60 | 29.56 | 2.83 | 21.55 | dry | 32.60 |
| 07/18/13 | 2.80 | --- | --- | 2.90 | 6.10 | 13.35 | 13.37 | --- | --- | --- | --- | --- | 29.44 | 10.00 | 19.75 | 27.70 | 2.30 | --- | 8.60 | 31.93 |
| 10/28/13 | 5.05 | --- | --- | 7.20 | 7.15 | 13.95 | 13.89 | --- | --- | --- | --- | --- | 28.65 | 10.52 | 20.50 | 29.40 | 3.00 | 20.12 | 9.00 | 32.47 |
| 01/22/14 | 6.20 | --- | --- | 4.22 | 7.60 | 14.10 | 14.13 | --- | --- | --- | --- | --- | 29.00 | 11.10 | 21.33 | 30.10 | 2.75 | 21.24 | 8.82 | 33.19 |
| 04/18/14 | 2.60 | --- | --- | 3.70 | 6.00 | 13.32 | 13.60 | 35.80 | 34.50 | 11.12 | --- | 17.70 | 28.90 | 10.28 | 20.40 | 26.50 | 2.35 | 19.35 | 8.18 | 31.30 |
| 07/26/14 | 4.76 | --- | --- | 5.21 | 7.22 | 14.46 | 14.70 | 37.61 | 37.12 | 7.20 | --- | 20.80 | 31.98 | 13.50 | 23.48 | 30.80 | 3.00 | 22.62 | 9.70 | 34.60 |
| 10/26/14 | 3.13 | --- | --- | 6.85 | 6.32 | 13.65 | 13.69 | 34.9 | 33.64 | 11.30 | 11.67 | 17.24 | 29.73 | 8.66 | 19.75 | 28.12 | 2.40 | 18.84 | 8.50 | 31.11 |
| 06/01/15 | 3.01 | --- | --- | 4.97 | 6.20 | 13.53 | 13.92 | 36.36 | 35.18 | 11.38 | 11.68 | 18.11 | 29.56 | 9.61 | 20.12 | 27.46 | 2.65 | 19.78 | 9.59 | 32.13 |
| 10/18/15 | 4.09 | --- | --- | 5.11 | 6.32 | 13.67 | 13.99 | 36.43 | 35.25 | 11.47 | 11.49 | 19.86 | 30.27 | 10.31 | 22.54 | 29.89 | 5.08 | 22.21 | dry | 33.97 |
| 03/07/16 | 3.04 | --- | --- | 1.16 | 6.19 | 13.41 | 13.75 | 36.50 | 36.66 | 11.24 | 11.54 | 19.91 | 32.45 | 10.33 | 23.40 | 28.33 | 2.02 | 21.40 | 10.02 | 33.70 |
| 10/24/16 | 3.04 | --- | --- | 5.30 | 6.17 | 12.20 | 12.30 | 33.55 | 30.30 | 10.08 | 10.36 | 13.69 | 24.74 | 9.30 | 14.90 | 25.11 | 2.19 | 15.56 | 8.51 | 27.66 |
| 04/10/17 | 5.54 | --- | --- | 3.77 | 7.55 | 14.04 | 14.24 | 32.76 | 36.50 | 11.73 | 12.04 | 19.66 | 28.88 | 10.45 | 21.69 | 31.05 | 2.95 | 21.14 | 9.01 | 33.52 |

**Notes:**

1. Groundwater elevations are in units of feet. Elevations are given relative to Lajas 2 (PID AB9841, NAVD 29) in Sabana Grande, Puerto Rico with elevation 200.27 feet.
2. Depth to water, bottom of boring, and bottom of screen units are feet below measuring point. Measurements are made from the top of the PVC riser of each well.
3. All groundwater level measurements were made by JFA, On Site, and/or GZA personnel. Measurements were made using a water level indicator except for measurements at wells GZ-507R, GZ-508R, GZ-509R, GZ510R, GZ-512R, and GZ-513R which were made using pressure transducers. GZ-513R which were made using pressure transducers.
4. Water levels have been measured at times and under conditions stated in the text. Fluctuations in the levels of groundwater may occur due to variations in temperature, rainfall, and other factors.
5. Reference elevations were surveyed by Jose O Quinones Moret, BS, PLS of Puerto Rico.
6. Other Notes:
   "dry" indicates water was not observed within the monitoring well.
   "<" signifies less than - elevation shown is for the bottom of the well.
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7. The end of December 2010 groundwater level round was conducted on January 5, 2011 due to the holidays.
8. For October 12, 2012 data, the original GZ-601R elevation appeared to be the result of a field error. Because the groundwater elevations in GZ-601L and GZ-601R on October 16, 2012 were equal, the October 12, 2012 GZ-601R elevation is assumed to be equal to the GZ-601L elevation on that date.
9. Reference elevations were re-surveyed on August 16, 2014. All previous groundwater elevations were adjusted to reflect the new survey information.

**TABLE 4**
SUMMARY OF GROUNDWATER ELEVATION DATA
HP Voluntary Remediation Project
San German, Puerto Rico

| Date | GROUNDWATER ELEVATION DATA | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | OW-304R | OW-305I | OW-305U | OW-307 | OW-401 | OW-402U | OW-402L | OW-402R | OW-403L | OW-404U | OW-404L | OW-404R | OW-405 | OW-407 | OW-408 | W-1 | W-5 | W-7 | W-8 | WB-1U | WB-1L | WB-2U |
| *Ref as of 8/16/14* | *150.00* | *141.63* | *141.22* | *144.08* | *138.37* | *146.71* | *146.69* | *146.97* | *146.39* | *130.04* | *130.09* | *130.02* | *139.93* | *153.62* | *152.58* | *154.90* | *161.40* | *131.60* | *149.56* | *129.52* | *129.51* | *130.39* |
| 01/26/11 | 116.33 | 139.48 | 137.82 | 119.60 | 114.95 | 140.11 | 119.01 | 119.19 | 118.92 | 129.06 | 114.72 | 114.62 | <117.70 | 129.92 | 121.50 | 122.20 | --- | 115.90 | 120.76 | 126.94 | 116.33 | 122.34 |
| 02/28/11 | 116.19 | 138.77 | 137.46 | 120.68 | 114.72 | 137.34 | 120.20 | 120.33 | 120.07 | 127.80 | 114.48 | 114.38 | 119.01 | 129.55 | 122.91 | 123.53 | --- | 116.50 | 122.08 | 126.56 | 115.90 | 121.78 |
| 03/24/11 | 115.85 | 139.02 | 133.92 | 120.52 | 114.57 | 137.03 | 120.07 | 120.49 | 119.74 | 127.32 | 114.37 | 114.22 | <117.7 | 130.59 | 124.19 | 125.30 | --- | 115.56 | 122.76 | 126.63 | 115.75 | 121.84 |
| 4/19,26/2011 | 115.97 | 140.13 | 137.59 | 120.25 | 115.27 | 141.01 | 120.94 | 121.38 | 122.01 | 127.09 | 114.36 | 114.25 | 118.03 | 129.34 | 122.81 | 123.98 | --- | 115.00 | 122.86 | 126.32 | 115.77 | 120.69 |
| 07/21/11 | 117.85 | 138.82 | 137.60 | 126.28 | 115.18 | 133.41 | 125.59 | 125.58 | 125.77 | 128.54 | 114.67 | 114.59 | 121.03 | 132.21 | 128.28 | 130.15 | --- | 115.70 | 128.46 | 126.52 | 114.00 | 123.39 |
| 10/27,28/2011 | 121.30 | 141.03 | 137.39 | 134.13 | 118.97 | 142.32 | 128.97 | 128.12 | 128.83 | 129.44 | 117.16 | 117.62 | 124.03 | 137.44 | 130.98 | 133.17 | --- | 118.60 | 131.58 | 126.08 | 119.28 | 124.95 |
| 01/27/12 | 117.35 | 138.23 | 137.37 | 125.90 | 114.97 | 133.31 | 125.23 | 125.55 | 125.94 | 128.29 | 114.44 | 114.37 | 120.48 | 132.87 | 128.48 | 130.15 | --- | 115.60 | 128.33 | 124.55 | 115.76 | 122.27 |
| 04/09/12 | 118.32 | 138.90 | 138.18 | 126.34 | 115.59 | 139.71 | 124.91 | 125.48 | 125.68 | 129.61 | 115.25 | 114.92 | 121.32 | 131.24 | 128.06 | 129.16 | --- | 115.76 | 127.68 | 126.81 | 117.08 | 122.16 |
| 07/24/12 | 116.70 | 139.48 | 137.62 | 124.88 | 114.92 | 139.88 | 123.99 | 124.17 | 124.39 | 128.59 | 114.29 | 114.22 | 120.17 | 129.82 | 126.91 | 127.70 | --- | 115.60 | 126.86 | 126.02 | 114.76 | 122.74 |
| 10/12/12 | 119.49 | 140.43 | 140.62 | 129.83 | 116.27 | 141.08 | 126.71 | 126.57 | 127.08 | 129.58 | 116.09 | 115.61 | 123.02 | 132.52 | 129.21 | 130.39 | --- | 116.02 | 129.66 | 126.73 | 116.66 | 124.68 |
| 01/16/13 | 118.15 | 138.13 | 137.22 | 126.88 | 115.17 | 133.81 | 126.24 | 126.37 | 126.64 | 127.79 | 113.49 | 113.42 | 121.48 | 132.02 | --- | 129.93 | --- | 115.70 | 129.06 | 124.92 | 115.61 | 122.69 |
| 04/22/13 | 114.60 | 140.16 | 138.07 | 125.18 | 115.02 | 140.86 | 123.31 | 123.57 | 123.84 | 129.29 | 114.54 | 114.41 | 119.43 | 128.97 | 126.03 | 126.90 | --- | 115.60 | 126.01 | 125.37 | 116.36 | 121.59 |
| 07/18/13 | 117.86 | 140.63 | 138.82 | 129.13 | 115.87 | 141.26 | 125.19 | 125.37 | 125.29 | 130.04 | 115.69 | 115.02 | 122.08 | --- | --- | 128.30 | --- | 116.40 | 127.71 | 127.27 | 111.31 | 122.89 |
| 10/28/13 | 117.50 | 139.03 | 137.42 | 125.98 | 115.57 | 137.41 | 125.39 | 125.54 | 125.72 | 127.74 | 114.57 | 114.47 | 121.18 | 130.87 | 128.40 | 129.12 | --- | 115.65 | 128.09 | 125.32 | 116.21 | 122.83 |
| 01/22/14 | 116.67 | 138.06 | 138.40 | 125.28 | 114.85 | 133.71 | 124.37 | 124.45 | 124.99 | 129.48 | 114.49 | 114.25 | 120.34 | 130.12 | 127.68 | --- | --- | --- | --- | 126.62 | 116.26 | 122.21 |
| 04/18/14 | 118.50 | 140.73 | 138.52 | 130.18 | 116.17 | 141.56 | 124.89 | 124.97 | 125.29 | 129.69 | 115.64 | 115.22 | 121.98 | 130.97 | 127.38 | --- | --- | --- | --- | <126.56 | 117.61 | 123.39 |
| 07/26/14 | 115.27 | 138.94 | 137.52 | 122.96 | 114.37 | 138.66 | 122.23 | 122.36 | 122.79 | 127.65 | 114.05 | 113.95 | 119.03 | 127.66 | 125.01 | --- | --- | --- | --- | 125.52 | 115.63 | 122.34 |
| 10/26/14 | 118.71 | 140.58 | 138.23 | 129.12 | 116.28 | 140.81 | 125.57 | 125.62 | 125.72 | 127.95 | 115.89 | 115.11 | 122.81 | 130.91 | 127.43 | --- | --- | --- | --- | 126.93 | 117.98 | 125.53 |
| 06/01/15 | 117.64 | 140.44 | 138.28 | 129.42 | 115.93 | 141.14 | 124.91 | 124.94 | 125.40 | 128.93 | 115.41 | 115.01 | 121.60 | 130.35 | 127.65 | --- | --- | --- | --- | 126.84 | 117.79 | 125.02 |
| 10/18/15 | 115.94 | 138.74 | 137.15 | 126.83 | 113.34 | 140.89 | 124.63 | 124.64 | 125.12 | 128.65 | 115.13 | 114.73 | 121.39 | 130.11 | 127.39 | --- | --- | --- | --- | 127.13 | 117.67 | 124.90 |
| 03/07/16 | 116.11 | 140.43 | 138.82 | 125.26 | 115.45 | 141.18 | 122.74 | 122.81 | 123.19 | 128.68 | 116.17 | 114.99 | 119.66 | 128.00 | 125.66 | --- | --- | --- | --- | 124.38 | 118.06 | 124.58 |
| 10/24/16 | 122.07 | 140.45 | 138.48 | 132.78 | 118.22 | 141.14 | 130.10 | 130.20 | 130.08 | 128.49 | 117.24 | 116.74 | 126.48 | 135.86 | 132.63 | --- | --- | --- | --- | 125.99 | 119.11 | 126.18 |
| 04/10/17 | 116.34 | 140.48 | <136.65 | 124.62 | 114.79 | <129.71 | 126.11 | 124.07 | 124.93 | 127.95 | 114.63 | 114.45 | 120.22 | 129.93 | 127.69 | --- | --- | --- | --- | 126.77 | 117.41 | 122.88 |
| | WELL CONSTRUCTION INFORMATION | | | | | | | | | | | | | | | | | | | | | |
| Bottom of Boring [2] | 89.00 | 14.50 | 2.50 | 40.00 | 65.90 | 17.00 | 53.00 | 79.00 | 58.00 | 5.00 | 27.50 | 43.00 | 23.50 | 40.00 | 42.00 | --- | --- | --- | --- | 5.50 | 31.00 | 12.00 |
| Boring Bottom Elevation [1] | 61.00 | 127.13 | 136.65 | 104.08 | 72.47 | 129.71 | 93.69 | 67.97 | 88.39 | 125.04 | 102.59 | 87.02 | 116.43 | 113.62 | 110.58 | --- | --- | --- | --- | 124.02 | 98.51 | 118.39 |
| Bottom Screen Elevation [1] | 61.00 | 127.13 | 136.65 | 106.08 | 73.37 | 129.71 | 93.69 | 67.97 | 91.39 | 125.04 | 102.59 | 87.02 | 116.43 | 113.62 | 110.58 | --- | --- | --- | --- | 124.05 | 101.01 | 120.39 |
| Bottom of Screen [2] | 89.00 | 14.50 | 2.50 | 38.00 | 65.00 | 17.00 | 53.00 | 79.00 | 55.00 | 5.00 | 27.50 | 43.00 | 23.50 | 40.00 | 42.00 | --- | --- | --- | --- | 5.50 | 28.50 | 10.00 |
| Date | DEPTH TO WATER MEASUREMENTS | | | | | | | | | | | | | | | | | | | | | |
| | OW-304R | OW-305I [7] | OW-305U [7] | OW-307 | OW-401 | OW-402U | OW-402L | OW-402R | OW-403L | OW-404U | OW-404L | OW-404R | OW-405 | OW-407 | OW-408 | W-1 | W-5 | W-7 | W-8 | WB-1U | WB-1L | WB-2U |
| *Ref as of 8/16/14* | *150.00* | *141.63* | *141.22* | *144.08* | *138.37* | *146.71* | *146.69* | *146.97* | *146.39* | *130.04* | *130.09* | *130.02* | *139.93* | *153.62* | *152.58* | *154.90* | *161.40* | *131.60* | *149.56* | *129.52* | *129.51* | *130.39* |
| 01/26/11 | 33.67 | 2.15 | 3.40 | 24.48 | 23.42 | 6.60 | 27.68 | 27.78 | 27.47 | 0.98 | 15.37 | 15.40 | dry | 23.70 | 31.08 | 32.70 | --- | 15.70 | 28.80 | 2.58 | 13.18 | 8.05 |
| 02/28/11 | 33.81 | 2.86 | 3.76 | 23.40 | 23.65 | 9.37 | 26.49 | 26.64 | 26.32 | 2.24 | 15.61 | 15.64 | 20.92 | 24.07 | 29.67 | 31.37 | --- | 15.10 | 27.48 | 2.96 | 13.61 | 8.61 |
| 03/24/11 | 34.15 | 2.61 | 7.30 | 23.56 | 23.80 | 9.68 | 26.62 | 26.48 | 26.65 | 2.72 | 15.72 | 15.80 | dry | 23.03 | 28.39 | 29.60 | --- | 16.04 | 26.80 | 2.89 | 13.76 | 8.55 |
| 04/26/11 | 34.03 | 1.50 | 3.63 | 23.83 | 23.10 | 5.70 | 25.75 | 25.59 | 24.38 | 2.95 | 15.73 | 15.77 | 21.90 | 24.28 | 29.77 | 30.92 | --- | 16.60 | 26.70 | 3.20 | 13.74 | 9.70 |
| 07/21/11 | 32.15 | 2.81 | 3.62 | 17.80 | 23.19 | 13.30 | 21.10 | 21.39 | 20.62 | 1.50 | 15.42 | 15.43 | 18.90 | 21.41 | 24.30 | 24.75 | --- | 15.90 | 21.10 | 3.00 | 15.51 | 7.00 |
| 10/28/11 | 28.70 | 0.60 | 3.83 | 9.95 | 19.40 | 4.39 | 17.72 | 18.85 | 17.56 | 0.60 | 12.93 | 12.40 | 15.90 | 16.18 | 21.60 | 21.73 | --- | 13.00 | 17.98 | 3.44 | 10.23 | 5.44 |
| 01/27/12 | 32.65 | 3.40 | 3.85 | 18.18 | 23.40 | 13.40 | 21.46 | 21.42 | 20.45 | 1.75 | 15.65 | 15.65 | 19.45 | 20.75 | 24.10 | 24.75 | --- | 16.00 | 21.23 | 4.97 | 13.75 | 8.12 |
| 04/09/12 | 31.68 | 2.73 | 3.04 | 17.74 | 22.78 | 7.00 | 21.78 | 21.49 | 20.71 | 0.43 | 14.84 | 15.10 | 18.61 | 22.38 | 24.52 | 25.74 | --- | 15.84 | 21.88 | 2.71 | 12.43 | 8.23 |
| 07/24/12 | 33.30 | 2.15 | 3.60 | 19.20 | 23.45 | 6.83 | 22.70 | 22.80 | 22.00 | 1.45 | 15.80 | 15.80 | 19.76 | 23.80 | 25.67 | 27.20 | --- | 16.00 | 22.70 | 3.50 | 14.75 | 7.65 |
| 10/12/12 | 30.51 | 1.20 | 0.60 | 14.25 | 22.10 | 5.63 | 19.98 | 20.40 | 19.31 | 0.46 | 14.00 | 14.41 | 16.91 | 21.10 | 23.37 | 24.51 | --- | 15.58 | 19.90 | 2.79 | 12.85 | 5.71 |
| 01/16/13 | 31.85 | 3.50 | 4.00 | 17.20 | 23.20 | 12.90 | 20.45 | 20.60 | 19.75 | 2.25 | 16.60 | 16.60 | 18.45 | 21.60 | --- | 24.97 | --- | 15.90 | 20.50 | 4.60 | 13.90 | 7.70 |
| 04/22/13 | 35.40 | 1.47 | 3.15 | 18.90 | 23.35 | 5.85 | 23.38 | 23.40 | 22.55 | 0.75 | 15.55 | 15.61 | 20.50 | 24.65 | 26.55 | 28.00 | --- | 16.00 | 23.55 | 4.15 | 13.15 | 8.80 |
| 07/18/13 | 32.14 | 1.00 | 2.40 | 14.95 | 22.50 | 5.45 | 21.50 | 21.60 | 21.10 | 0.00 | 14.40 | 15.00 | 17.85 | --- | --- | 26.60 | --- | 15.20 | 21.85 | 2.25 | 18.20 | 7.50 |
| 10/28/13 | 32.50 | 2.60 | 3.80 | 18.10 | 22.80 | 9.30 | 21.30 | 21.43 | 20.67 | 2.30 | 15.52 | 15.55 | 18.75 | 22.75 | 24.18 | 25.78 | --- | 15.95 | 21.47 | 4.20 | 13.30 | 7.56 |
| 01/22/14 | 33.33 | 3.57 | 2.82 | 18.80 | 23.52 | 13.00 | 22.32 | 22.52 | 21.40 | 0.56 | 15.60 | 15.77 | 19.59 | 23.50 | 24.90 | --- | --- | --- | --- | 2.90 | 13.25 | 8.18 |
| 04/18/14 | 31.50 | 0.90 | 2.70 | 13.90 | 22.20 | 5.15 | 21.80 | 22.00 | 21.10 | 0.35 | 14.45 | 14.80 | 17.95 | 22.65 | 25.20 | --- | --- | --- | --- | dry | 11.90 | 7.00 |
| 07/26/14 | 34.73 | 2.69 | 3.70 | 21.12 | 24.00 | 8.05 | 24.46 | 24.61 | 23.60 | 2.39 | 16.04 | 16.07 | 20.90 | 25.96 | 27.57 | --- | --- | --- | --- | 4.00 | 13.88 | 8.05 |
| 10/26/14 | 31.29 | 1.05 | 2.99 | 14.96 | 22.09 | 5.90 | 21.12 | 21.35 | 20.67 | 2.09 | 14.20 | 14.91 | 17.12 | 22.71 | 25.15 | --- | --- | --- | --- | 2.59 | 11.53 | 4.86 |
| 06/01/15 | 32.36 | 1.19 | 2.94 | 14.66 | 22.44 | 5.57 | 21.78 | 22.03 | 20.99 | 1.11 | 14.68 | 15.01 | 18.33 | 23.27 | 24.93 | --- | --- | --- | --- | 2.68 | 11.72 | 5.37 |
| 10/18/15 | 34.06 | 2.89 | 4.07 | 17.25 | 25.03 | 5.82 | 22.06 | 22.33 | 21.27 | 1.39 | 14.96 | 15.29 | 18.54 | 23.51 | 25.19 | --- | --- | --- | --- | 2.39 | 11.84 | 5.49 |
| 03/07/16 | 33.89 | 1.20 | 2.40 | 18.82 | 22.92 | 5.53 | 23.95 | 24.16 | 23.20 | 1.36 | 13.92 | 15.03 | 20.27 | 25.62 | 26.92 | --- | --- | --- | --- | 5.14 | 11.45 | 5.81 |
| 10/24/16 | 27.93 | 1.18 | 2.74 | 11.30 | 20.15 | 5.57 | 16.59 | 16.77 | 16.31 | 1.55 | 12.85 | 13.28 | 13.45 | 17.76 | 19.95 | --- | --- | --- | --- | 3.53 | 10.40 | 4.21 |
| 04/10/17 | 33.66 | 1.15 | dry | 19.46 | 23.58 | dry | 20.58 | 22.90 | 21.46 | 2.09 | 15.46 | 15.57 | 19.71 | 23.69 | 24.89 | --- | --- | --- | --- | 2.75 | 12.10 | 7.51 |

**Notes:**

1. Groundwater elevations are in units of feet. Elevations are given relative to Lajas 2 (PID AB9841, NAVD 29) in Sabana Grande, Puerto Rico with elevation 200.27 feet.
2. Depth to water, bottom of boring, and bottom of screen units are feet below measuring point. Measurements are made from the top of the PVC riser of each well.
3. All groundwater level measurements were made by JFA, On Site, and/or GZA personnel. Measurements were made using a water level indicator except for measurements at wells GZ-507R, GZ-508R, GZ-509R, GZ510R, GZ-512R, and GZ-513R which were made using pressure transducers. GZ-513R which were made using pressure transducers.
4. Water levels have been measured at times and under conditions stated in the text. Fluctuations in the levels of groundwater may occur due to variations in temperature, rainfall, and other factors.
5. Reference elevations were surveyed by Jose O Quinones Moret, BS, PLS of Puerto Rico.
6. Other Notes:
   "dry" indicates water was not observed within the monitoring well.
   "<" signifies less than - elevation shown is for the bottom of the well.
   "---" signifies that a water level measurement was not obtained.
7. The end of December 2010 groundwater level round was conducted on January 5, 2011 due to the holidays.
8. For October 12, 2012 data, the original GZ-601R elevation appeared to be the result of a field error. Because the groundwater elevations in GZ-601L and GZ-601R on October 16, 2012 were equal, the October 12, 2012 GZ-601R elevation is assumed to be equal to the GZ-601L elevation on that date.
9. Reference elevations were re-surveyed on August 16, 2014. All previous groundwater elevations were adjusted to reflect the new survey information.

**TABLE 4**
SUMMARY OF GROUNDWATER ELEVATION DATA
HP Voluntary Remediation Project
San German, Puerto Rico

| Date | GROUNDWATER ELEVATION DATA | | |
|---|---|---|---|
| | **WB-2L** | **WB-3L** | **WB-4L** |
| *Ref as of 8/16/14* | *129.97* | *129.77* | *129.31* |
| 01/26/11 | 114.54 | 114.24 | 114.40 |
| 02/28/11 | 114.29 | 114.13 | 114.26 |
| 03/24/11 | 114.30 | 113.96 | 114.10 |
| 4/19,26/2011 | 114.07 | 114.09 | 114.11 |
| 07/21/11 | 114.35 | 113.87 | 114.11 |
| 10/27,28/2011 | 116.45 | 116.77 | 116.96 |
| 01/27/12 | 114.27 | 113.98 | 114.06 |
| 04/09/12 | 114.84 | 114.54 | 114.58 |
| 07/24/12 | 114.22 | 113.87 | 114.01 |
| 10/12/12 | 115.49 | 114.86 | 115.28 |
| 01/16/13 | 114.27 | 114.02 | 114.01 |
| 04/22/13 | 114.42 | 113.92 | 114.01 |
| 07/18/13 | 115.42 | 114.57 | 114.21 |
| 10/28/13 | 114.37 | 113.99 | 114.09 |
| 01/22/14 | 114.18 | 113.90 | 114.01 |
| 04/18/14 | 115.07 | 114.57 | 114.71 |
| 07/26/14 | 113.85 | 113.55 | 113.69 |
| 10/26/14 | 114.95 | 114.46 | 114.60 |
| 06/01/15 | 114.86 | 114.40 | 114.48 |
| 10/18/15 | 114.76 | 114.32 | 114.54 |
| 03/07/16 | 114.88 | 114.49 | 114.62 |
| 10/24/16 | 116.42 | 104.97 | 115.92 |
| 04/10/17 | 114.39 | 114.05 | 114.17 |
| | **WELL CONSTRUCTION INFORMATION** | | |
| Bottom of Boring [2] | 31.00 | 31.00 | 30.00 |
| Boring Bottom Elevation [1] | 98.97 | 98.77 | 99.31 |
| Bottom Screen Elevation [1] | 99.97 | 99.77 | 99.31 |
| Bottom of Screen [2] | 30.00 | 30.00 | 29.50 |
| **Date** | **DEPTH TO WATER MEASUREMENTS** | | |
| | **WB-2L** | **WB-3L** | **WB-4L** |
| *Ref as of 8/16/14* | *129.97* | *129.77* | *129.31* |
| 01/26/11 | 15.43 | 15.53 | 14.91 |
| 02/28/11 | 15.68 | 15.64 | 15.05 |
| 03/24/11 | 15.67 | 15.81 | 15.21 |
| 04/26/11 | 15.90 | 15.68 | 15.20 |
| 07/21/11 | 15.62 | 15.90 | 15.20 |
| 10/28/11 | 13.52 | 13.00 | 12.35 |
| 01/27/12 | 15.70 | 15.79 | 15.25 |
| 04/09/12 | 15.13 | 15.23 | 14.73 |
| 07/24/12 | 15.75 | 15.90 | 15.30 |
| 10/12/12 | 14.48 | 14.91 | 14.03 |
| 01/16/13 | 15.70 | 15.75 | 15.30 |
| 04/22/13 | 15.55 | 15.85 | 15.30 |
| 07/18/13 | 14.55 | 15.20 | 15.10 |
| 10/28/13 | 15.60 | 15.78 | 15.22 |
| 01/22/14 | 15.79 | 15.87 | 15.30 |
| 04/18/14 | 14.90 | 15.20 | 14.60 |
| 07/26/14 | 16.12 | 16.22 | 15.62 |
| 10/26/14 | 15.02 | 15.31 | 14.71 |
| 06/01/15 | 15.11 | 15.37 | 14.83 |
| 10/18/15 | 15.21 | 15.45 | 14.77 |
| 03/07/16 | 15.09 | 15.28 | 14.69 |
| 10/24/16 | 13.55 | 24.80 | 13.39 |
| 04/10/17 | 15.58 | 15.72 | 15.14 |

**Notes:**

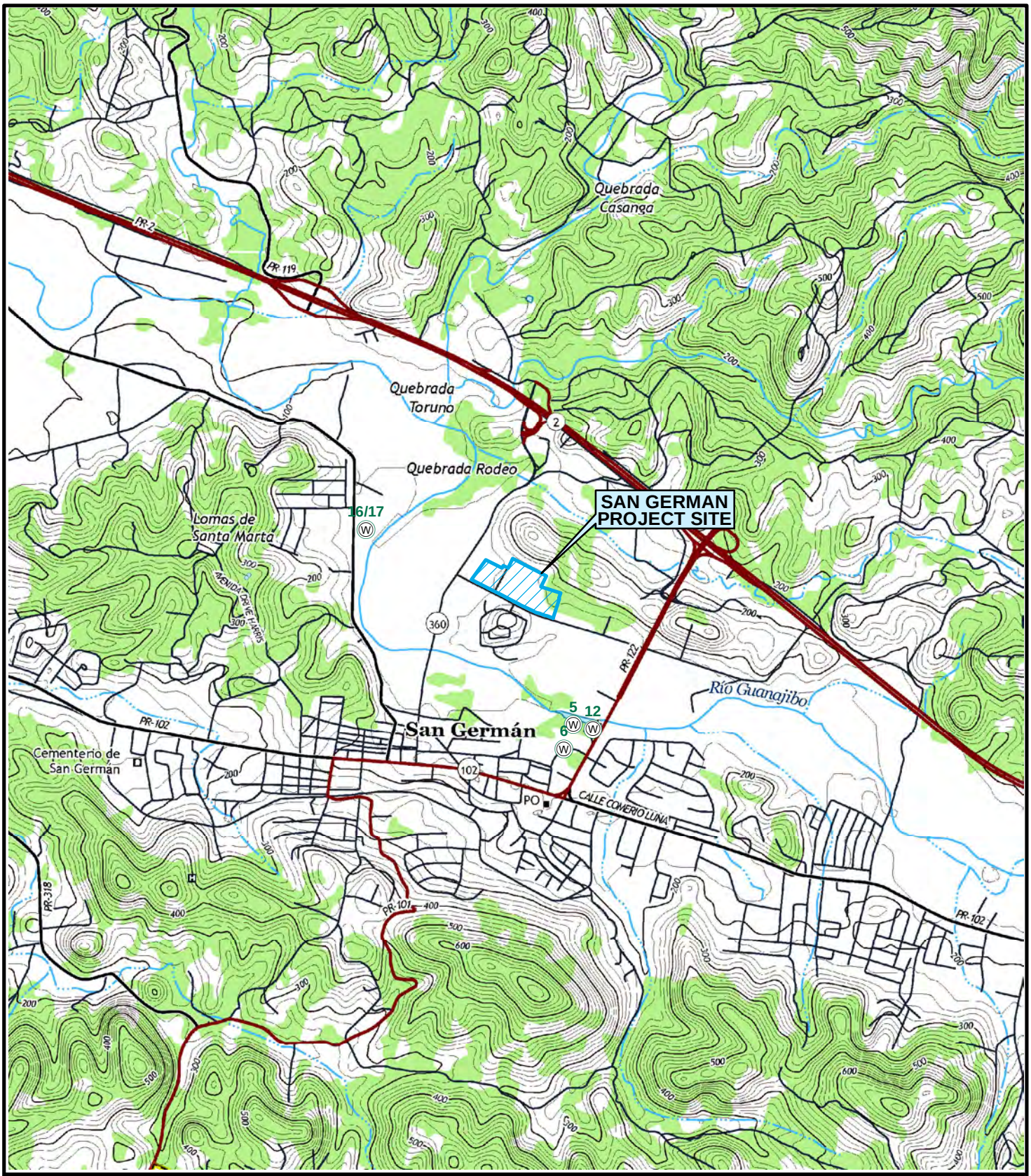
1. Groundwater elevations are in units of feet. Elevations are given relative to Lajas 2 (PID AB9841, NAVD 29) in Sabana Grande, Puerto Rico with elevation 200.27 feet.
2. Depth to water, bottom of boring, and bottom of screen units are feet below measuring point. Measurements are made from the top of the PVC riser of each well.
3. All groundwater level measurements were made by JFA, On Site, and/or GZA personnel. Measurements were made using a water level indicator except for measurements at wells GZ-507R, GZ-508R, GZ-509R, GZ510R, GZ-512R, and GZ-513R which were made using pressure transducers. GZ-513R which were made using pressure transducers.
4. Water levels have been measured at times and under conditions stated in the text. Fluctuations in the levels of groundwater may occur due to variations in temperature, rainfall, and other factors.
5. Reference elevations were surveyed by Jose O Quinones Moret, BS, PLS of Puerto Rico.
6. Other Notes:
   "dry" indicates water was not observed within the monitoring well.
   "<" signifies less than - elevation shown is for the bottom of the well.
   "---" signifies that a water level measurement was not obtained.
7. The end of December 2010 groundwater level round was conducted on January 5, 2011 due to the holidays.
8. For October 12, 2012 data, the original GZ-601R elevation appeared to be the result of a field error. Because the groundwater elevations in GZ-601L and GZ-601R on October 16, 2012 were equal, the October 12, 2012 GZ-601R elevation is assumed to be equal to the GZ-601L elevation on that date.
9. Reference elevations were re-surveyed on August 16, 2014. All previous groundwater elevations were adjusted to reflect the new survey information.

**TABLE 5**
PROPOSED INTRINSIC BIODEGRADATION SAMPLING PROGRAM - OCTOBER 2017
HP Voluntary Remediation Project
San German, Puerto Rico

| WELL ID | TO BE SAMPLED (YES/NO) | PARAMETERS | |
|---|---|---|---|
| | | VOCs[1] | VOCs and IB Parameters[2] |
| **Wells required to be sampled October 2017 in accordance with the Intrinsic Biodegradation Work Plan** | | | |
| **Alluvium/Fill** | | | |
| GZ-504U | YES | x | |
| GZ-519U | YES | | x |
| GZ-702U | YES | x | |
| OW-101 | YES | | x |
| OW-402U | YES | x | |
| OW-404U | YES | x | |
| WB-1U | YES | x | |
| WB-2U | YES | x | |
| IW-1 | YES | | x |
| **Saprolite** | | | |
| GZ-501L | YES | x | |
| GZ-503L | YES | | x |
| GZ-504L | YES | | x |
| GZ-701L | YES | x | |
| OW-101L | YES | x | |
| OW-304L | YES | | x |
| OW-307 | YES | | x |
| WB-1L | YES | x | |
| WB-2L | YES | x | |
| WB-3L | YES | | x |
| WB-4L | YES | | x |
| IW-2 | YES | | x |
| IW-3 | YES | | x |
| **Bedrock** | | | |
| GZ-504R | YES | | x |
| GZ-505R | YES | | x |
| GZ-506R | YES | | x |
| GZ-601R | YES | x | |
| GZ-701R | YES | x | |
| GZ-702R | YES | x | |
| GZ-703R | YES | x | |
| OW-304R | YES | x | |
| OW-404R | YES | x | |

**Notes:**
1. "VOCs" indicates analysis limited to only chlorinated volatile organic compounds (cVOCs), and the field parameters dissolved oxygen (DO), pH, and oxidation-reduction potential (ORP)
2. "VOCs and IB Parameters" indicates analysis of cVOCs, dissolved iron, methane, ethene, ethane, TOC, and the field parameters DO, pH, and ORP.
3. The next biennal sampling round is scheduled for Fall 2018.

# FIGURES



SOURCE : SCANNED USGS TOPOGRAPHIC QUADRANGLES DISTRIBUTED BY THE U.S. GEOLOGICAL SURVEY (USGS); SAN GERMAN, PUERTO RICO QUADRANGLE.

0 1,000 2,000 4,000 6,000 Feet

N W E S

GZA

PROJ. MGR.: JAC
DESIGNED BY: JJR
REVIEWED BY: CAL
OPERATOR: ADP

DATE: 07-14-2017

# SITE LOCUS PLAN

HP VOLUNTARY REMEDIATION PROJECT
SAN GERMAN, PUERTO RICO

JOB NO. 01.0024065.19

FIGURE NO. 1

GZA GeoEnvironmental, Inc. J:\23,000-24,999\24065\24065-19.JAC\Figures\GIS\MXDs\24065-19_2016-USGS_SiteLocus_FIG1.mxd, 7/14/2017, 9:05:25 AM, anthony.pungitore

## LEGEND

- ABANDONED BEDROCK EXTRACTION WELL
- MONITORING WELL SCREENED IN FILL
- MONITORING WELL SCREENED IN ALLUVIUM
- MONITORING WELL SCREENED IN SAPROLITE
- MONITORING WELL SCREENED IN BEDROCK
- ABANDONED MONITORING WELL
- SOIL VAPOR EXTRACTION WELL
- INJECTION WELL (FILL)
- INJECTION WELL (SAPROLITE)
- SANITARY SEWER MANHOLE
- APPROXIMATE PROPERTY BOUNDARY
- ELEVATION CONTOUR (2012 USGS TOPOGRAPHIC QUADRANGLE)

## NOTES:

1) THIS MAP CONTAINS THE ESRI ArcGIS ONLINE WORLD IMAGERY MAP SERVICE, PUBLISHED DECEMBER 12, 2009 BY ESRI ARCIMS SERVICES AND UPDATED OFTEN. THIS SERVICE USES UNIFORM NATIONALLY RECOGNIZED DATUM AND CARTOGRAPHY STANDARDS AND A VARIETY OF AVAILABLE SOURCES FROM SEVERAL DATA PROVIDERS.

2) THE CATCH BASINS, DRAIN LINES, DITCH AND VARIOUS LABELS WERE APPROXIMATELY LOCATED FROM THE FOLLOWING TWO PLANS;
- PLAN PROVIDED BY PEDRO PANZARDI & ASSOCIATES ENTITLED "SITE PLAN WITH ELEVATIONS OF SEWER SYSTEM", DATED: 03-11-1988, ORIGINAL SCALE: 1:500 OR 1"=41', SHEET NO.: 3-OF-7, PROJECT NO.: 8811, DRAWING NO.: 10-1.1.
- PLAN PROVIDED BY DIGITAL EQUIPMENT CORPORATION (DEC) OF SAN GERMAN, PUERTO RICO ENTITLED "PLAN & PROFILE", DRAWN BY: YELAZQUES, DATED: 01-23-1987, ORIGINAL SCALE: 1:500 OR 1"=41'.

3) REFERENCE ELEVATIONS AND WELL LOCATIONS WERE SURVEYED BY JOSE O. QUINONES MORET, BS, PLS OF PUERTO RICO ON AUGUST 16, 2014. ELEVATIONS ARE RELATIVE TO LAJAS 2 (PID AB9841, NAVD 29) IN SABANA GRANDE, PUERTO RICO WITH ELEVATION 200.27 FEET. COORDINATES ARE PROVIDED IN NAD 83.

4) THE LOCATION OF INJECTION WELLS IW-1, IW-2, AND IW-3 WERE DERIVED FROM ELECTRONIC FILES PREPARED BY: JAVIER E. BIDOT ASSOCIATES, PSC LAND SURVEYORS & CONSULTANTS, ENTITLED: SUBSURFACE UTILITIES SURVEY PACKARD/DIGITAL FACILITIES.

0 25 50 100 150
SCALE IN FEET

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PROJECT PROGRESS REPORT
JANUARY 2017 (Q1) THROUGH JUNE 2017 (Q2)
HP VOLUNTARY REMEDIATION PROJECT
SAN GERMAN, PUERTO RICO

# SITE PLAN

| | | | |
|---|---|---|---|
| PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | PREPARED FOR: HP, Inc. | |
| PROJ MGR: JAC | REVIEWED BY: CAL | CHECKED BY: CAL | FIGURE |
| DESIGNED BY: JY | DRAWN BY: EMD/ADP | SCALE: 1 INCH = 50 FT | 2 |
| DATE: 07-14-2017 | PROJECT NO. 01.0024065.19 | REVISION NO. | |

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## LEGEND

- OW-519U 139.47 — MONITORING WELL SCREENED IN FILL
  GROUNDWATER ELEVATION IN FILL UNIT (APRIL 2017)
- OW-305I 140.48 — MONITORING WELL SCREENED IN ALLUVIUM
  GROUNDWATER ELEVATION IN ALLUVIUM UNIT (APRIL 2017)
- OW-401 114.79 — MONITORING WELL SCREENED IN SAPROLITE
  GROUNDWATER ELEVATION IN SAPROLITE UNIT (APRIL 2017)
- BR-308 115.72 — MONITORING WELL SCREENED IN BEDROCK
  GROUNDWATER ELEVATION IN BEDROCK UNIT (APRIL 2017)
- GZ-507R — ABANDONED MONITORING WELL WITH DEDICATED TRANSDUCER INSTALLED
- IW-1 — INJECTION WELL (FILL)
- IW-2 — INJECTION WELL (SAPROLITE)
- GZ-502 — ABANDONED MONITORING WELL
- W-8 — ABANDONED BEDROCK EXTRACTION WELL
- SANITARY SEWER MANHOLE
- GROUNDWATER CONTOUR IN BEDROCK UNIT (APRIL 2017)
- INFERRED GROUNDWATER CONTOUR IN BEDROCK UNIT (APRIL 2017)
- APPROXIMATE PROPERTY BOUNDARY
- ELEVATION CONTOUR (2012 USGS TOPOGRAPHIC QUADRANGLE)

## NOTES:

1) WATER LEVELS WERE MEASURED BY GZA GEOENVIRONMENTAL, INC. PERSONNEL AND ON-SITE ENVIRONMENTAL PERSONNEL ON APRIL 10, 2017.

2) THE GROUNDWATER TREATMENT SYSTEM WAS SHUT DOWN AT 13:25 ON NOVEMBER 1, 2010 IN ACCORDANCE WITH THE INTRINSIC BIODEGRADATION STUDY WORK PLAN SUBMITTED ON MAY 14, 2010 AND APPROVED BY THE PUERTO RICO ENVIRONMENTAL QUALITY BOARD ON OCTOBER 29, 2010.

3) APPROXIMATELY 4 INCHES OF PRECIPATION WERE MEASURED DURING THE MONTH PRIOR TO THE APRIL 10, 2017 WATER LEVEL MEASURING EVENT.

4) THIS MAP CONTAINS THE ESRI ARCGIS ONLINE WORLD IMAGERY MAP SERVICE, PUBLISHED DECEMBER 12, 2009 BY ESRI ARCIMS SERVICES AND UPDATED OFTEN. THIS SERVICE USES UNIFORM NATIONALLY RECOGNIZED DATUM AND CARTOGRAPHY STANDARDS AND A VARIETY OF AVAILABLE SOURCES FROM SEVERAL DATA PROVIDERS.

5) THE CATCH BASINS, DRAIN LINES, DITCH AND VARIOUS LABELS WERE APPROXIMATELY LOCATED FROM THE FOLLOWING TWO PLANS:
- PLAN PROVIDED BY PEDRO PANZARDI & ASSOCIATES ENTITLED "SITE PLAN WITH ELEVATIONS OF SEWER SYSTEM", DATED: 03-11-1988, ORIGINAL SCALE: 1:500 OR 1"=41', SHEET NO.: 3-OF-7, PROJECT NO.: 8811, DRAWING NO.: 10-1.1.
- PLAN PROVIDED BY DIGITAL EQUIPMENT CORPORATION (DEC) OF SAN GERMAN, PUERTO RICO ENTITLED "PLAN & PROFILE", DRAWN BY: YELAZQUES, DATED: 01-23-1987, ORIGINAL SCALE: 1:500 OR 1"=41'.

6) REFERENCE ELEVATIONS AND WELL LOCATIONS WERE SURVEYED BY JOSE O. QUINONES MORET, BS, PLS OF PUERTO RICO ON AUGUST 16, 2014. ELEVATIONS ARE RELATIVE TO LAJAS 2 (PID AB9841, NAVD 29) IN SABANA GRANDE, PUERTO RICO WITH ELEVATION 200.27 FEET. COORDINATES ARE PROVIDED IN NAD 83.

7) THE ESTIMATED GROUNDWATER ELEVATION CONTOURS AND DIRECTION OF GROUNDWATER FLOW ARE BASED ON MEASURED WATER LEVELS IN WIDELY SPACED MONITORING WELLS AND ASSUME AN IDEALIZED SPATIAL DISTRIBUTION OF HYDRAULIC HEAD. ACTUAL GROUNDWATER FLOW WILL OCCUR PREFERENTIALLY ALONG FRACTURE SETS WHICH REPRESENT HIGH PERMEABILITY PATHWAYS. THESE PATHWAYS MAY NOT BE ALIGNED WITH THE LOCAL HYDRAULIC HEAD GRADIENT AND MAY CONSEQUENTLY RESULT IN GROUNDWATER FLOW IN A DIRECTOIN WHICH IS NOT ALIGNED WITH THE DEPICTED MAXIMUM HYDRAULIC GRADIENT.

8) THE LOCATION OF INJECTION WELLS IW-1, IW-2, AND IW-3 WERE DERIVED FROM ELECTRONIC FILES PREPARED BY: JAVIER E. BIDOT ASSOCIATES, PSC LAND SURVEYORS & CONSULTANTS, ENTITLED: SUBSURFACE UTILITIES SURVEY PACKARD/DIGITAL FACILITIES.

0 25 50 100 150
SCALE IN FEET

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PROJECT PROGRESS REPORT
JANUARY 2017 (Q1) THROUGH JUNE 2017 (Q2)
HP VOLUNTARY REMEDIATION PROJECT
SAN GERMAN, PUERTO RICO

# APRIL 2017 GROUNDWATER CONTOURS IN BEDROCK

| | | | |
|---|---|---|---|
| PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | PREPARED FOR: HP, Inc. | |
| PROJ MGR: JAC | REVIEWED BY: CAL | CHECKED BY: CAL | FIGURE |
| DESIGNED BY: JJR | DRAWN BY: EMD\SMAP/JA | SCALE: 1 INCH = 50 FT | 3 |
| DATE: 07-20-2017 | PROJECT NO. 01.0024065.19 | REVISION NO. | |

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## LEGEND

- GZ-519U 120 — MONITORING WELL SCREENED IN FILL
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR TRICHLOROETHENE (TCE) IN FILL UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- IW-1 46 — INJECTION WELL SCREENED IN FILL
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR TRICHLOROETHENE (TCE) IN FILL UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- GZ-702U 11 — MONITORING WELL SCREENED IN ALLUVIUM
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR TRICHLOROETHENE (TCE) IN ALLUVIUM UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- MONITORING WELL SCREENED IN SAPROLITE
- INJECTION WELL SCREENED IN SAPROLITE
- MONITORING WELL SCREENED IN BEDROCK
- ABANDONED MONITORING WELL
- ABANDONED BEDROCK EXTRACTION WELL

(DRY) - INDICATES WELL DRY UPON SAMPLING
(NS) - INDICATES NO SAMPLE TAKEN
(ND) - INDICATES VOLATILE ORGANIC COMPOUNDS (VOC's) NOT DETECTED

- SANITARY SEWER MANHOLE
- AREA WHERE FILL IS ABSENT
- APPROXIMATE PROPERTY BOUNDARY
- ELEVATION CONTOUR (2012 USGS TOPOGRAPHIC QUADRANGLE)

0 25 50 100 150
SCALE IN FEET

## NOTES:

1) THIS MAP CONTAINS THE ESRI ArcGIS ONLINE WORLD IMAGERY MAP SERVICE, PUBLISHED DECEMBER 12, 2009 BY ESRI ARCIMS SERVICES AND UPDATED OFTEN. THIS SERVICE USES UNIFORM NATIONALLY RECOGNIZED DATUM AND CARTOGRAPHY STANDARDS AND A VARIETY OF AVAILABLE SOURCES FROM SEVERAL DATA PROVIDERS.

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- PLAN PROVIDED BY DIGITAL EQUIPMENT CORPORATION (DEC) OF SAN GERMAN, PUERTO RICO ENTITLED "PLAN & PROFILE", DRAWN BY: YELAZQUES, DATED: 01-23-1987, ORIGINAL SCALE: 1:500 OR 1"=41'.

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4) ANALYTICAL DATA PRESENTED ARE FROM GROUNDWATER SAMPLES COLLECTED APRIL 2017 AND JUNE 2017.

5) THE LOCATION OF INJECTION WELLS IW-1, IW-2, AND IW-3 WERE DERIVED FROM ELECTRONIC FILES PREPARED BY: JAVIER E. BIDOT ASSOCIATES, PSC LAND SURVEYORS & CONSULTANTS, ENTITLED: SUBSURFACE UTILITIES SURVEY PACKARD/DIGITAL FACILITIES.

6) FOR WELLS GZ-505R, GZ-701R, GZ-702R, GZ-703R, OW-304L, AND WB-3L THE NOTED CONCENTRATION IS THE MAXIMUM FROM THE APRIL 2017 AND JUNE 2017 SAMPLING EVENTS.

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PROJECT PROGRESS REPORT
JANUARY 2017 (Q1) THROUGH JUNE 2017 (Q2)
HP VOLUNTARY REMEDIATION PROJECT
SAN GERMAN, PUERTO RICO

# APRIL & JUNE 2017 TCE CONCENTRATIONS IN FILL/ALLUVIUM

| | | | |
|---|---|---|---|
| PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | PREPARED FOR: HP, Inc. | |
| PROJ MGR: JAC | REVIEWED BY: CAL | CHECKED BY: CAL | FIGURE 4A |
| DESIGNED BY: JJR | DRAWN BY: EMD/SW/AP | SCALE: 1 INCH = 50 FT | |
| DATE: 08-03-2017 | PROJECT NO. 01.0024065.19 | REVISION NO. | |

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## LEGEND

- MONITORING WELL SCREENED IN FILL
- INJECTION WELL SCREENED IN FILL
- MONITORING WELL SCREENED IN ALLUVIUM
- WB-1L 100 — MONITORING WELL SCREENED IN SAPROLITE
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR TRICHLOROETHENE (TCE) IN SAPROLITE UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- IW-2 ND — INJECTION WELL SCREENED IN SAPROLITE
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR TRICHLOROETHENE (TCE) IN SAPROLITE UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- OW-404R 110 — MONITORING WELL SCREENED IN BEDROCK
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR TRICHLOROETHENE (TCE) IN BEDROCK UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- ABANDONED MONITORING WELL
- ABANDONED BEDROCK EXTRACTION WELL
- SANITARY SEWER MANHOLE
- APPROXIMATE PROPERTY BOUNDARY
- ELEVATION CONTOUR (2012 USGS TOPOGRAPHIC QUADRANGLE)

(DRY) - INDICATES WELL DRY UPON SAMPLING
(NS) - INDICATES NO SAMPLE TAKEN
(ND) - INDICATES VOLATILE ORGANIC COMPOUNDS (VOC's) NOT DETECTED

0 25 50 100 150
SCALE IN FEET

## NOTES:

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PROJECT PROGRESS REPORT
JANUARY 2017(Q1) THROUGH JUNE 2017 (Q2)
HP VOLUNTARY REMEDIATION PROJECT
SAN GERMAN, PUERTO RICO

APRIL & JUNE 2017
TCE CONCENTRATIONS IN SAPROLITE/BEDROCK

| | | | |
|---|---|---|---|
| PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | PREPARED FOR: HP, Inc. | |
| PROJ MGR: JAC | REVIEWED BY: CAL | CHECKED BY: CAL | FIGURE 4B |
| DESIGNED BY: JJR | DRAWN BY: EMD/SW/AP | SCALE: 1 INCH = 50 FT | |
| DATE: 08-03-2017 | PROJECT NO. 01.0024065.19 | REVISION NO. | |

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## LEGEND

- OW-404U ND — MONITORING WELL SCREENED IN FILL
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR CIS-1,2-DICHLOROETHENE (DCE) IN FILL UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- IW-1 480 — INJECTION WELL SCREENED IN FILL
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR CIS-1,2-DICHLOROETHENE (DCE) IN FILL UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- GZ-702U 11 — MONITORING WELL SCREENED IN ALLUVIUM
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR CIS-1,2-DICHLOROETHENE (DCE) IN ALLUVIUM UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- MONITORING WELL SCREENED IN SAPROLITE
- INJECTION WELL SCREENED IN SAPROLITE
- MONITORING WELL SCREENED IN BEDROCK
- ABANDONED MONITORING WELL
- ABANDONED BEDROCK EXTRACTION WELL
- SANITARY SEWER MANHOLE
- AREA WHERE FILL IS ABSENT
- APPROXIMATE PROPERTY BOUNDARY
- ELEVATION CONTOUR (2012 USGS TOPOGRAPHIC QUADRANGLE)

(DRY) - INDICATES WELL DRY UPON SAMPLING
(NS) - INDICATES NO SAMPLE TAKEN
(ND) - INDICATES VOLATILE ORGANIC COMPOUNDS (VOC's) NOT DETECTED

0 25 50 100 150
SCALE IN FEET

## NOTES:

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6) FOR WELLS GZ-505R, GZ-701R, GZ-702R, GZ-703R, OW-304L, AND WB-3L THE NOTED CONCENTRATION IS THE MAXIMUM FROM THE APRIL 2017 AND JUNE 2017 SAMPLING EVENTS.

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PROJECT PROGRESS REPORT
JANUARY 2017 (Q1) THROUGH JUNE 2017 (Q2)
HP VOLUNTARY REMEDIATION PROJECT
SAN GERMAN, PUERTO RICO

# APRIL & JUNE 2017
# DCE CONCENTRATIONS IN FILL/ALLUVIUM

| | | | |
|---|---|---|---|
| PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | | PREPARED FOR: HP, Inc. |
| PROJ MGR: JAC | REVIEWED BY: CAL | CHECKED BY: CAL | FIGURE 4C |
| DESIGNED BY: JJR | DRAWN BY: EMD/SW/AP | SCALE: 1 INCH = 50 FT | |
| DATE: 08-03-2017 | PROJECT NO. 01.0024065.19 | REVISION NO. | |

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## LEGEND

- MONITORING WELL SCREENED IN FILL
- INJECTION WELL SCREENED IN FILL
- MONITORING WELL SCREENED IN ALLUVIUM
- WB-1L 150 — MONITORING WELL SCREENED IN SAPROLITE
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR CIS-1,2-DICHLOROETHENE (DCE) IN SAPROLITE UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- IW-2 11 — INJECTION WELL SCREENED IN SAPROLITE
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR CIS-1,2-DICHLOROETHENE (DCE) IN SAPROLITE UNIT IN MICROGRAMS PER LITER ug/L (APRILAND JUNE 2017)
- OW-404R 150 — MONITORING WELL SCREENED IN BEDROCK
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR CIS-1,2-DICHLOROETHENE (DCE) IN BEDROCK UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- ABANDONED MONITORING WELL
- ABANDONED BEDROCK EXTRACTION WELL
- SANITARY SEWER MANHOLE
- APPROXIMATE PROPERTY BOUNDARY
- ELEVATION CONTOUR (2012 USGS TOPOGRAPHIC QUADRANGLE)

(DRY) - INDICATES WELL DRY UPON SAMPLING
(NS) - INDICATES NO SAMPLE TAKEN
(ND) - INDICATES VOLATILE ORGANIC COMPOUNDS (VOC's) NOT DETECTED

0 25 50 100 150
SCALE IN FEET

## NOTES:

1) THIS MAP CONTAINS THE ESRI ArcGIS ONLINE WORLD IMAGERY MAP SERVICE, PUBLISHED DECEMBER 12, 2009 BY ESRI ARCIMS SERVICES AND UPDATED OFTEN. THIS SERVICE USES UNIFORM NATIONALLY RECOGNIZED DATUM AND CARTOGRAPHY STANDARDS AND A VARIETY OF AVAILABLE SOURCES FROM SEVERAL DATA PROVIDERS.

2) THE CATCH BASINS, DRAIN LINES, DITCH AND VARIOUS LABELS WERE APPROXIMATELY LOCATED FROM THE FOLLOWING TWO PLANS:
- PLAN PROVIDED BY PEDRO PANZARDI & ASSOCIATES ENTITLED "SITE PLAN WITH ELEVATIONS OF SEWER SYSTEM", DATED: 03-11-1988, ORIGINAL SCALE: 1:500 OR 1"=41', SHEET NO.: 3-OF-7, PROJECT NO.: 8811, DRAWING NO.: 10-1.1.
- PLAN PROVIDED BY DIGITAL EQUIPMENT CORPORATION (DEC) OF SAN GERMAN, PUERTO RICO ENTITLED "PLAN & PROFILE", DRAWN BY: YELAZQUES, DATED: 01-23-1987, ORIGINAL SCALE: 1:500 OR 1"=41'.

3) REFERENCE ELEVATIONS AND WELL LOCATIONS WERE SURVEYED BY JOSE O. QUINONES MORET, BS, PLS OF PUERTO RICO ON AUGUST 16, 2014. ELEVATIONS ARE RELATIVE TO LAJAS 2 (PID AB9841, NAVD 29) IN SABANA GRANDE, PUERTO RICO WITH ELEVATION 200.27 FEET. COORDINATES ARE PROVIDED IN NAD 83.

4) ANALYTICAL DATA PRESENTED ARE FROM GROUNDWATER SAMPLES COLLECTED APRIL 2017 AND JUNE 2017.

5) THE LOCATION OF INJECTION WELLS IW-1, IW-2, AND IW-3 WERE DERIVED FROM ELECTRONIC FILES PREPARED BY: JAVIER E. BIDOT ASSOCIATES, PSC LAND SURVEYORS & CONSULTANTS, ENTITLED: SUBSURFACE UTILITIES SURVEY PACKARD/DIGITAL FACILITIES.

6) FOR WELLS GZ-505R, GZ-701R, GZ-702R, GZ-703R, OW-304L, AND WB-3L THE NOTED CONCENTRATION IS THE MAXIMUM FROM THE APRIL 2017 AND JUNE 2017 SAMPLING EVENTS.

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# PROJECT PROGRESS REPORT
# JANUARY 2017 (Q1) THROUGH JUNE 2017 (Q2)
# HP VOLUNTARY REMEDIATION PROJECT
SAN GERMAN, PUERTO RICO

## APRIL & JUNE 2017
## DCE CONCENTRATIONS IN SAPROLITE/BEDROCK

| | | | |
|---|---|---|---|
| PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | PREPARED FOR: HP, Inc. | |
| PROJ MGR: JAC | REVIEWED BY: CAL | CHECKED BY: CAL | FIGURE 4D |
| DESIGNED BY: JJR | DRAWN BY: EMD/SW/AP | SCALE: 1 INCH = 50 FT | |
| DATE: 08-03-2017 | PROJECT NO. 01.0024065.19 | REVISION NO. | |

© 2017 - GZA GeoEnvironmental, Inc. J:\23,000-24,999\24065\24065-19.JAC\Figures\GIS\MXDs\24065-19_DCE_SapBed_APRIL2017\Data_FIG4D.mxd, 8/3/2017, 3:35:14 PM, anthony.pungitore

## LEGEND

- OW-101 ND — MONITORING WELL SCREENED IN FILL
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR VINYL CHLORIDE (VC) IN FILL UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- IW-1 14 — INJECTION WELL SCREENED IN FILL
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR VINYL CHLORIDE (VC) IN FILL UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- WB-2U ND — MONITORING WELL SCREENED IN ALLUVIUM
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR VINYL CHLORIDE (VC) IN ALLUVIUM UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- MONITORING WELL SCREENED IN SAPROLITE
- INJECTION WELL SCREENED IN SAPROLITE
- MONITORING WELL SCREENED IN BEDROCK
- ABANDONED MONITORING WELL
- ABANDONED BEDROCK EXTRACTION WELL
- SANITARY SEWER MANHOLE
- AREA WHERE FILL IS ABSENT
- APPROXIMATE PROPERTY BOUNDARY
- ELEVATION CONTOUR (2012 USGS TOPOGRAPHIC QUADRANGLE)

(DRY) - INDICATES WELL DRY UPON SAMPLING
(NS) - INDICATES NO SAMPLE TAKEN
(ND) - INDICATES VOLATILE ORGANIC COMPOUNDS (VOC's) NOT DETECTED

0 25 50 100 150
SCALE IN FEET

## NOTES:

1) THIS MAP CONTAINS THE ESRI ArcGIS ONLINE WORLD IMAGERY MAP SERVICE, PUBLISHED DECEMBER 12, 2009 BY ESRI ARCIMS SERVICES AND UPDATED OFTEN. THIS SERVICE USES UNIFORM NATIONALLY RECOGNIZED DATUM AND CARTOGRAPHY STANDARDS AND A VARIETY OF AVAILABLE SOURCES FROM SEVERAL DATA PROVIDERS.

2) THE CATCH BASINS, DRAIN LINES, DITCH AND VARIOUS LABELS WERE APPROXIMATELY LOCATED FROM THE FOLLOWING TWO PLANS:
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- PLAN PROVIDED BY DIGITAL EQUIPMENT CORPORATION (DEC) OF SAN GERMAN, PUERTO RICO ENTITLED "PLAN & PROFILE", DRAWN BY: YELAZQUES, DATED: 01-23-1987, ORIGINAL SCALE: 1:500 OR 1"=41'.

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4) ANALYTICAL DATA PRESENTED ARE FROM GROUNDWATER SAMPLES COLLECTED APRIL 2017 AND JUNE 2017.

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6) FOR WELLS GZ-505R, GZ-701R, GZ-702R, GZ-703R, OW-304L, AND WB-3L THE NOTED CONCENTRATION IS THE MAXIMUM FROM THE APRIL 2017 AND JUNE 2017 SAMPLING EVENTS.

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PROJECT PROGRESS REPORT
JANUARY (Q1) THROUGH JUNE (Q2)
HP VOLUNTARY REMEDIATION PROJECT
SAN GERMAN, PUERTO RICO

# APRIL & JUNE 2017
# VC CONCENTRATIONS IN FILL/ALLUVIUM

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
HP, Inc.

| | | | |
|---|---|---|---|
| PROJ MGR: JAC | REVIEWED BY: CAL | CHECKED BY: CAL | FIGURE |
| DESIGNED BY: JJR | DRAWN BY: EMD/ADP | SCALE: 1 INCH = 50 FT | 4E |
| DATE: 08-03-2017 | PROJECT NO. 01.0024065.19 | REVISION NO. | |

© 2017 - GZA GeoEnvironmental, Inc. J:\23,000-24,999\24065\24065-19 JAC\Figures\GIS\MXDs\24065-19_VC_Fill\Alluvium_APRIL2017\Data_FIG4E.mxd, 8/3/2017, 3:58:29 PM, anthony.pungitore

## LEGEND

- MONITORING WELL SCREENED IN FILL
- INJECTION WELL SCREENED IN FILL
- MONITORING WELL SCREENED IN ALLUVIUM
- GZ-503L 6.7 — MONITORING WELL SCREENED IN SAPROLITE
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR VINYL CHLORIDE (VC) IN SAPROLITE UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- IW-2 ND — INJECTION WELL SCREENED IN SAPROLITE
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR VINYL CHLORIDE (VC) IN SAPROLITE UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- OW-404R 2.0 — MONITORING WELL SCREENED IN BEDROCK
  CHEMICAL CONCENTRATION IN GROUNDWATER FOR VINYL CHLORIDE (VC) IN BEDROCK UNIT IN MICROGRAMS PER LITER ug/L (APRIL AND JUNE 2017)
- ABANDONED MONITORING WELL
- ABANDONED BEDROCK EXTRACTION WELL
- SANITARY SEWER MANHOLE
- APPROXIMATE PROPERTY BOUNDARY
- ELEVATION CONTOUR (2012 USGS TOPOGRAPHIC QUADRANGLE)

(DRY) - INDICATES WELL DRY UPON SAMPLING
(NS) - INDICATES NO SAMPLE TAKEN
(ND) - INDICATES VOLATILE ORGANIC COMPOUNDS (VOC's) NOT DETECTED

0 25 50 100 150
SCALE IN FEET

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PROJECT PROGRESS REPORT
JANUARY (Q1) THROUGH JUNE 2017 (Q2)
HP VOLUNTARY REMEDIATION PROJECT
SAN GERMAN, PUERTO RICO

APRIL & JUNE 2017
VC CONCENTRATIONS IN SAPROLITE/BEDROCK

| | | | |
|---|---|---|---|
| PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | PREPARED FOR: HP, Inc. | |
| PROJ MGR: JAC | REVIEWED BY: CAL | CHECKED BY: CAL | FIGURE 4F |
| DESIGNED BY: JJR | DRAWN BY: EMD/ADP | SCALE: 1 INCH = 50 FT | |
| DATE: 08-03-2017 | PROJECT NO. 01.0024065.19 | REVISION NO. | |

© 2017 - GZA GeoEnvironmental, Inc. J:\23,000-24,999\24065\24065-19_JAC\Figures\GIS\MXDs\24065-19_VC_SapBed_APRIL2017\Data_FIG4F.mxd, 8/3/2017, 3:42:49 PM, anthony.puntigore

# APPENDIX A

LIMITATIONS

## LIMITATIONS

1. The reported findings submitted in this report are based in part upon previous and recent data obtained from a limited number of samples from widely spaced subsurface explorations and monitoring wells. The nature and extent of variations between these explorations may not become evident until further investigation is performed. If variations or other latent conditions then appear evident, it will be necessary to re-evaluate the conclusions of this Report.

2. Water level readings have been made in the observation wells periodically and under conditions stated in the text. These data have been reviewed and interpretations have been made in the text of this Report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall and other factors different from those prevailing at the time measurements were made.

3. Quantitative laboratory testing was performed as part of the site investigation and remediation work. Where such analyses have been conducted by an outside laboratory, GZA GeoEnvironmental, Inc. (GZA) has relied upon the data provided, and has not conducted an independent evaluation of the reliability of these data.

4. The findings contained in this Report are based in part upon various types of chemical data and are contingent upon their validity. These data have been reviewed and interpretations made in the Report. Some of these data were preliminary "screening" level data, and may have not been confirmed with quantitative analyses. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time, and other factors. Should additional chemical data become available in the future, these data should be reviewed by GZA, and the findings presented herein modified accordingly.

5. Chemical analyses have been performed for specific parameters during the course of this study, as detailed in the text. It must be noted that additional constituents not searched for during the current study may be present in soil and groundwater at the site.

# APPENDIX B

## LABORATORY ANALYTICAL REPORTS – APRIL 2017 AND JUNE 2017

(Pages 114 – 1928 have been excluded from laboratory report 660-800874-1 and pages 29 – 292 have been excluded from laboratory report 660-81492-1. Pages are available upon request.)

Daliz Estades Santaliz

Licensed Chemist

To Whom It May Concern:

I, Daliz M. Estades Santaliz, in my capacity as Puerto Rico Certified Chemist, hereby certify the attached Analytical Results from Project HP-San German IB April, 2017 and Laboratory ID Numbers:

660-80084-1
660-80084-2
660-80084-3
660-80084-4
660-80084-5
660-80084-6
660-80084-7
660-80084-8
660-80084-9
660-80084-10
660-80084-11
660-80084-12
660-80084-13

660-80120-2
660-80120-3
660-80120-4
660-80120-5
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660-80146-8

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Daliz M. Estades Santaliz
Lic. 40280
A 16
QUIMICO LICENCIADO

Lcda. Daliz M. Estades Santaliz

PO Box 727
Dorado, PR 00646-0727

# ANALYTICAL REPORT

Job Number: 660-80084-1

Job Description: HP-San German IB April 2017

For:
GZA GeoEnvironmental, Inc.
249 Vanderbilt Ave
Norwood, MA 02062

Attention: Mr. James Roehrig

Approved for release.
Haukur M Gudnason
Project Manager II
6/21/2017 12:44 PM

Haukur M Gudnason, Project Manager II
6712 Benjamin Road, Tampa, FL, 33634
(813)280-8342
haukur.gudnason@testamericainc.com
06/21/2017
Revision: 1

Methods: FDEP, DOH Certification #: E84282, E81005 These test results meet all the requirements of NELAC unless specified in the case narrative. All questions regarding this test report should be directed to the TestAmerica Project Manager who signed this test report. The estimated uncertainty associated with these reported results is available upon request. The results contained in this test report relate only to these samples included herein.

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## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| F1 | MS and/or MSD Recovery is outside acceptance limits. |
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |
| E | Result exceeded calibration range. |

### GC VOA

| Qualifier | Qualifier Description |
|---|---|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

### Metals

| Qualifier | Qualifier Description |
|---|---|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |

### General Chemistry

| Qualifier | Qualifier Description |
|---|---|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

**Job Narrative**
**660-80084-1**

**Comments**
Report revised to include receipt information regarding the presence of headspace in VOC vials. When there was one or more vials without headspace received they were used for analysis.
660-80084
Several 8260 samples had one or two vials with headspace > 4 mm. We still have at least one which is uncompromized. The vial(s) with headspace were used for screening and not definitive analysis.
660-80084-11 8260B GZ-501L
660-80084-12 8260B OW-101L
660-80084-13 8260B GZ-503L
660-80084-3 8260B OW-404R
660-80084-5 8260B WB-2L
660-80084-6 8260B WB-1U

660-80120 8260 vials with headspace
Sample 660-80120-1 had headspace in one of the two vials.
Sample 660-80120-2 had headspace in both of the vials.
Samples 660-80120-3, 660-80120-7 MS/MSD, and 660-80120-8 had headspace in one of the three vials.
Sample 660-80120-9 had headspace in two of the three vials.
Samples 660-80120-5 and 660-80120-7 had headspace in all three vials.

660-80121 8260 vials with headspace
Sample 660-80121-1 had headspace in one of the two vials.
Sample 660-80121-2 had headspace in both of the vials.
Sample 660-80121-9 had headspace in one of the three vials.
Samples 660-80121-4 and 660-80121-7 had headspace in two of the three vials.
Samples 660-80121-8, 660-80121-11, 660-80121-12, 660-80121-13, 660-80121-16 had headspace in all three vials.

660-80146 vials with headspace
The trip blank was noted as having headspace in one of the two vials. The vial without headspace was analyzed.

**Receipt**
The samples were received on 4/12/2017 9:45 AM, 4/13/2017 9:35 AM and 4/14/2017 10:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.9º C, 3.0º C, 4.7º C and 4.9º C.

**Receipt Exceptions**
Method(s) RSK-175: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory: -5, -7 and -8

**GC/MS VOA**
Method(s) 8260B: The following sample was diluted to bring the concentration of target analytes within the calibration range: OW-101. Elevated reporting limits (RLs) are provided.

Method(s) 8260B: The following sample was diluted to bring the concentration of target analytes within the calibration range: OW-304R and OW-304L. Elevated reporting limits (RLs) are provided.

Method(s) 8260B: Closing CCV was not run due to analyst error. Batch 182102.
WB-4L

Method(s) 8260B: The initial calibration verification (ICV) result for batch 660-181328 was above the upper control limit for bromomethane. Sample results were non-detects, and have been reported as qualified data.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

**HPLC/IC**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**GC VOA**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**Metals**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

**Field Service**
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

# Detection Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: Trip Blank — Lab Sample ID: 660-80084-1

No Detections.

## Client Sample ID: Field Blank — Lab Sample ID: 660-80084-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 0.79 | J | 1.0 | 0.49 | ug/L | 1 | | 8260B | Total/NA |
| 1,4-Dichlorobenzene | 1.8 | | 1.0 | 0.60 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: OW-404R — Lab Sample ID: 660-80084-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 3.3 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 1.2 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 2.0 | | 1.0 | 0.71 | ug/L | 1 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene - DL | 150 | | 5.0 | 3.3 | ug/L | 5 | | 8260B | Total/NA |
| Trichloroethene - DL | 110 | | 5.0 | 3.1 | ug/L | 5 | | 8260B | Total/NA |

## Client Sample ID: OW-404U — Lab Sample ID: 660-80084-4

No Detections.

## Client Sample ID: WB-2L — Lab Sample ID: 660-80084-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 52 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 3.5 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: WB-1U — Lab Sample ID: 660-80084-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 72 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 0.93 | J | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 56 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 2.1 | | 1.0 | 0.71 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: GZ-504L — Lab Sample ID: 660-80084-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 32 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 12 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |
| Methane | 18 | | 0.58 | 0.29 | ug/L | 1 | | RSK-175 | Total/NA |
| Dissolved Iron | 89 | J | 200 | 50 | ug/L | 1 | | 6010B | Dissolved |
| Total Organic Carbon | 1.3 | | 1.0 | 0.50 | mg/L | 1 | | 5310 B-2011 | Total/NA |

## Client Sample ID: WB-1L — Lab Sample ID: 660-80084-8

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 2.9 | F1 | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 0.80 | J F1 | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 2.7 | | 1.0 | 0.71 | ug/L | 1 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene - DL | 150 | | 5.0 | 3.3 | ug/L | 5 | | 8260B | Total/NA |
| Trichloroethene - DL | 100 | | 5.0 | 3.1 | ug/L | 5 | | 8260B | Total/NA |

This Detection Summary does not include radiochemical test results.

# Detection Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: WB-1L DUP — Lab Sample ID: 660-80084-9

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 2.8 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 0.87 | J | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 99 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 1.9 | | 1.0 | 0.71 | ug/L | 1 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene - DL | 140 | | 5.0 | 3.3 | ug/L | 5 | | 8260B | Total/NA |

## Client Sample ID: GZ-504R — Lab Sample ID: 660-80084-10

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 22 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Tetrachloroethene | 1.1 | | 1.0 | 0.50 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 25 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |
| Methane | 1.3 | | 0.58 | 0.29 | ug/L | 1 | | RSK-175 | Total/NA |
| Total Organic Carbon | 1.0 | | 1.0 | 0.50 | mg/L | 1 | | 5310 B-2011 | Total/NA |

## Client Sample ID: GZ-501L — Lab Sample ID: 660-80084-11

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethane | 0.55 | J | 1.0 | 0.52 | ug/L | 1 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene | 41 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Tetrachloroethene | 2.2 | | 1.0 | 0.50 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 31 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: OW-101L — Lab Sample ID: 660-80084-12

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 41 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 2.6 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: GZ-503L — Lab Sample ID: 660-80084-13

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 73 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 4.5 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 0.84 | J | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Tetrachloroethene | 2.9 | | 1.0 | 0.50 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 60 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 6.7 | | 1.0 | 0.71 | ug/L | 1 | | 8260B | Total/NA |
| Methane | 29 | | 0.58 | 0.29 | ug/L | 1 | | RSK-175 | Total/NA |
| Total Organic Carbon | 1.1 | | 1.0 | 0.50 | mg/L | 1 | | 5310 B-2011 | Total/NA |

## Client Sample ID: Trip Blank — Lab Sample ID: 660-80120-2

No Detections.

## Client Sample ID: GZ-519U — Lab Sample ID: 660-80120-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroform | 2.1 | | 1.0 | 0.90 | ug/L | 1 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene | 57 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 2.5 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |

This Detection Summary does not include radiochemical test results.

# Detection Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-519U (Continued) — Lab Sample ID: 660-80120-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 1.8 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene - DL | 120 | | 5.0 | 3.1 | ug/L | 5 | | 8260B | Total/NA |
| Methane | 1.1 | | 0.58 | 0.29 | ug/L | 1 | | RSK-175 | Total/NA |
| Total Organic Carbon | 0.96 | J | 1.0 | 0.50 | mg/L | 1 | | 5310 B-2011 | Total/NA |

## Client Sample ID: OW-101 — Lab Sample ID: 660-80120-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 220 | | 10 | 6.7 | ug/L | 10 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 14 | | 10 | 6.7 | ug/L | 10 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene - DL | 1600 | | 100 | 65 | ug/L | 100 | | 8260B | Total/NA |
| Trichloroethene - DL | 2400 | | 100 | 61 | ug/L | 100 | | 8260B | Total/NA |
| Methane | 140 | | 0.58 | 0.29 | ug/L | 1 | | RSK-175 | Total/NA |
| Total Organic Carbon | 1.6 | | 1.0 | 0.50 | mg/L | 1 | | 5310 B-2011 | Total/NA |

## Client Sample ID: GZ-505R — Lab Sample ID: 660-80120-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 74 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 1.0 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 1.4 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Tetrachloroethene | 2.6 | | 1.0 | 0.50 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene - DL | 120 | | 5.0 | 3.1 | ug/L | 5 | | 8260B | Total/NA |
| Methane | 18 | | 0.58 | 0.29 | ug/L | 1 | | RSK-175 | Total/NA |
| Total Organic Carbon | 0.98 | J | 1.0 | 0.50 | mg/L | 1 | | 5310 B-2011 | Total/NA |

## Client Sample ID: OW-307 — Lab Sample ID: 660-80120-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | 8.0 | | 5.0 | 2.5 | ug/L | 1 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 7.1 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 1.0 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 36 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 66 | | 1.0 | 0.71 | ug/L | 1 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene - DL | 370 | | 10 | 6.5 | ug/L | 10 | | 8260B | Total/NA |
| Ethane | 0.78 | J | 1.1 | 0.55 | ug/L | 1 | | RSK-175 | Total/NA |
| Ethylene | 3.4 | | 1.0 | 0.50 | ug/L | 1 | | RSK-175 | Total/NA |
| Methane (TCD) | 6600 | | 390 | 39 | ug/L | 1 | | RSK-175 | Total/NA |
| Dissolved Iron | 3100 | | 200 | 50 | ug/L | 1 | | 6010B | Dissolved |
| Total Organic Carbon | 1.2 | | 1.0 | 0.50 | mg/L | 1 | | 5310 B-2011 | Total/NA |

## Client Sample ID: WB-3L — Lab Sample ID: 660-80120-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 85 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 3.7 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 0.72 | J | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Tetrachloroethene | 3.7 | | 1.0 | 0.50 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 65 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 3.6 | | 1.0 | 0.71 | ug/L | 1 | | 8260B | Total/NA |

This Detection Summary does not include radiochemical test results.

# Detection Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: WB-3L DUP — Lab Sample ID: 660-80120-8

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 80 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 3.5 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 0.72 | J | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Tetrachloroethene | 3.6 | | 1.0 | 0.50 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 61 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 3.3 | | 1.0 | 0.71 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: WB-2U — Lab Sample ID: 660-80120-9

No Detections.

## Client Sample ID: Trip Blank — Lab Sample ID: 660-80121-2

No Detections.

## Client Sample ID: Field Blank — Lab Sample ID: 660-80121-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 0.63 | J | 1.0 | 0.49 | ug/L | 1 | | 8260B | Total/NA |
| 1,4-Dichlorobenzene | 1.3 | | 1.0 | 0.60 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: OW-304R — Lab Sample ID: 660-80121-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | 5.0 | | 2.0 | 1.1 | ug/L | 2 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene | 180 | | 2.0 | 1.3 | ug/L | 2 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 2.5 | | 2.0 | 1.3 | ug/L | 2 | | 8260B | Total/NA |
| Tetrachloroethene | 2.0 | | 2.0 | 1.0 | ug/L | 2 | | 8260B | Total/NA |
| Vinyl chloride | 96 | | 2.0 | 1.4 | ug/L | 2 | | 8260B | Total/NA |
| Trichloroethene - DL | 860 | | 20 | 12 | ug/L | 20 | | 8260B | Total/NA |

## Client Sample ID: Equipment Blank 1 — Lab Sample ID: 660-80121-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 0.65 | J | 1.0 | 0.49 | ug/L | 1 | | 8260B | Total/NA |
| 1,4-Dichlorobenzene | 1.3 | | 1.0 | 0.60 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: GZ-701L — Lab Sample ID: 660-80121-6

No Detections.

## Client Sample ID: Equipment Blank 2 — Lab Sample ID: 660-80121-7

No Detections.

## Client Sample ID: GZ-702R — Lab Sample ID: 660-80121-8

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 43 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 0.68 | J | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 22 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |

This Detection Summary does not include radiochemical test results.

# Detection Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-601R — Lab Sample ID: 660-80121-9

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 32 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 1.9 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: GZ-505R DUP — Lab Sample ID: 660-80121-10

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 72 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 1.1 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 1.6 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Tetrachloroethene | 2.7 | | 1.0 | 0.50 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene - DL | 130 | | 10 | 6.1 | ug/L | 10 | | 8260B | Total/NA |

## Client Sample ID: GZ-701R — Lab Sample ID: 660-80121-11

No Detections.

## Client Sample ID: GZ-703R DUP — Lab Sample ID: 660-80121-12

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 33 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 1.7 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene - DL | 100 | | 5.0 | 3.1 | ug/L | 5 | | 8260B | Total/NA |

## Client Sample ID: GZ-703R — Lab Sample ID: 660-80121-13

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 33 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 1.6 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Tetrachloroethene | 0.95 | J | 1.0 | 0.50 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene - DL | 99 | | 5.0 | 3.1 | ug/L | 5 | | 8260B | Total/NA |

## Client Sample ID: GZ-702U — Lab Sample ID: 660-80121-14

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 11 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 11 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: GZ-506R — Lab Sample ID: 660-80121-15

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethane | 0.79 | J | 1.0 | 0.52 | ug/L | 1 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene | 22 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 11 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |
| Methane | 8.4 | | 0.58 | 0.29 | ug/L | 1 | | RSK-175 | Total/NA |
| Dissolved Iron | 410 | | 200 | 50 | ug/L | 1 | | 6010B | Dissolved |
| Total Organic Carbon | 0.80 | J | 1.0 | 0.50 | mg/L | 1 | | 5310 B-2011 | Total/NA |

## Client Sample ID: OW-304L — Lab Sample ID: 660-80121-16

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethane | 3.9 | | 2.0 | 1.0 | ug/L | 2 | | 8260B | Total/NA |

This Detection Summary does not include radiochemical test results.

## Client Sample ID: OW-304L (Continued) — Lab Sample ID: 660-80121-16

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 1.5 | J | 2.0 | 1.3 | ug/L | 2 | | 8260B | Total/NA |
| Vinyl chloride | 13 | | 2.0 | 1.4 | ug/L | 2 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene - DL | 250 | | 20 | 13 | ug/L | 20 | | 8260B | Total/NA |
| Trichloroethene - DL | 530 | | 20 | 12 | ug/L | 20 | | 8260B | Total/NA |
| Methane | 19 | | 0.58 | 0.29 | ug/L | 1 | | RSK-175 | Total/NA |
| Dissolved Iron | 59 | J | 200 | 50 | ug/L | 1 | | 6010B | Dissolved |
| Total Organic Carbon | 2.6 | | 1.0 | 0.50 | mg/L | 1 | | 5310 B-2011 | Total/NA |

## Client Sample ID: Trip Blank — Lab Sample ID: 660-80146-2

No Detections.

## Client Sample ID: Field Blank — Lab Sample ID: 660-80146-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Dichlorobenzene | 1.3 | | 1.0 | 0.60 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: Purge Water 4.13.17 — Lab Sample ID: 660-80146-4

No Detections.

## Client Sample ID: IW-3 — Lab Sample ID: 660-80146-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 4.7 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Methylene Chloride | 9.6 | J | 10 | 5.0 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 1.5 | | 1.0 | 0.71 | ug/L | 1 | | 8260B | Total/NA |
| Ethane | 5.2 | | 1.1 | 0.55 | ug/L | 1 | | RSK-175 | Total/NA |
| Methane (TCD) | 1600 | | 390 | 39 | ug/L | 1 | | RSK-175 | Total/NA |
| Dissolved Iron | 81000 | | 200 | 50 | ug/L | 1 | | 6010B | Dissolved |
| Total Organic Carbon | 3800 | | 40 | 20 | mg/L | 40 | | 5310 B-2011 | Total/NA |

## Client Sample ID: WB-4L — Lab Sample ID: 660-80146-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 53 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 0.71 | J | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 1.1 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Tetrachloroethene | 1.9 | | 1.0 | 0.50 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene - DL | 120 | | 5.0 | 3.1 | ug/L | 5 | | 8260B | Total/NA |
| Methane | 2.2 | | 0.58 | 0.29 | ug/L | 1 | | RSK-175 | Total/NA |
| Total Organic Carbon | 1.1 | | 1.0 | 0.50 | mg/L | 1 | | 5310 B-2011 | Total/NA |

## Client Sample ID: IW-2 — Lab Sample ID: 660-80146-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 11 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Ethane | 0.73 | J | 1.1 | 0.55 | ug/L | 1 | | RSK-175 | Total/NA |
| Ethylene | 1.7 | | 1.0 | 0.50 | ug/L | 1 | | RSK-175 | Total/NA |
| Methane (TCD) | 4600 | | 390 | 39 | ug/L | 1 | | RSK-175 | Total/NA |
| Dissolved Iron | 180000 | | 200 | 50 | ug/L | 1 | | 6010B | Dissolved |

This Detection Summary does not include radiochemical test results.

# Detection Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: IW-2 (Continued) — Lab Sample ID: 660-80146-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 4000 | | 100 | 50 | mg/L | 100 | | 5310 B-2011 | Total/NA |

## Client Sample ID: IW-1 — Lab Sample ID: 660-80146-8

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | 35 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 3.1 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 46 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 14 | | 1.0 | 0.71 | ug/L | 1 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene - DL | 480 | | 10 | 6.5 | ug/L | 10 | | 8260B | Total/NA |
| Methane (TCD) | 3900 | | 390 | 39 | ug/L | 1 | | RSK-175 | Total/NA |
| Dissolved Iron | 130000 | | 200 | 50 | ug/L | 1 | | 6010B | Dissolved |
| Total Organic Carbon | 4100 | | 100 | 50 | mg/L | 100 | | 5310 B-2011 | Total/NA |

This Detection Summary does not include radiochemical test results.

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: Trip Blank

**Lab Sample ID: 660-80084-1**

**Date Collected: 04/11/17 06:35**
**Matrix: Water**
**Date Received: 04/12/17 09:45**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 13:25 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 13:25 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 13:25 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 13:25 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 13:25 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 13:25 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 13:25 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 13:25 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 13:25 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 13:25 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 13:25 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 13:25 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 13:25 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 13:25 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 13:25 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 13:25 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/17/17 13:25 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 13:25 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 13:25 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 13:25 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 13:25 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 13:25 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 13:25 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 13:25 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 13:25 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/17/17 13:25 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 13:25 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 13:25 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/17/17 13:25 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 13:25 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 13:25 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/17/17 13:25 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/17/17 13:25* | *1* |
| *Dibromofluoromethane* | *100* | | *83 - 123* | | *04/17/17 13:25* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/17/17 13:25* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: Field Blank

**Lab Sample ID: 660-80084-2**

**Date Collected: 04/11/17 06:30**
**Matrix: Water**
**Date Received: 04/12/17 09:45**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 13:44 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 13:44 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 13:44 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 13:44 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 13:44 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 13:44 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 13:44 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 13:44 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 13:44 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 13:44 | 1 |
| **1,2-Dichlorobenzene** | **0.79** | **J** | 1.0 | 0.49 | ug/L | | | 04/17/17 13:44 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 13:44 | 1 |
| **1,4-Dichlorobenzene** | **1.8** | | 1.0 | 0.60 | ug/L | | | 04/17/17 13:44 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 13:44 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 13:44 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 13:44 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/17/17 13:44 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 13:44 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 13:44 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 13:44 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 13:44 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 13:44 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 13:44 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 13:44 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 13:44 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/17/17 13:44 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 13:44 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 13:44 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/17/17 13:44 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 13:44 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 13:44 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/17/17 13:44 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/17/17 13:44* | *1* |
| *Dibromofluoromethane* | *99* | | *83 - 123* | | *04/17/17 13:44* | *1* |
| *Toluene-d8 (Surr)* | *96* | | *78 - 126* | | *04/17/17 13:44* | *1* |

## Client Sample ID: OW-404R

**Date Collected: 04/11/17 09:30**
**Date Received: 04/12/17 09:45**

## Lab Sample ID: 660-80084-3

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 18:50 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 18:50 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 18:50 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 18:50 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 18:50 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 18:50 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 18:50 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 18:50 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 18:50 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 18:50 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 18:50 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 18:50 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 18:50 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 18:50 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 18:50 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 18:50 | 1 |
| **trans-1,2-Dichloroethene** | **3.3** | | 1.0 | 0.67 | ug/L | | | 04/17/17 18:50 | 1 |
| **1,1-Dichloroethene** | **1.2** | | 1.0 | 0.67 | ug/L | | | 04/17/17 18:50 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 18:50 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 18:50 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 18:50 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 18:50 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 18:50 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 18:50 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/17/17 18:50 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 18:50 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 18:50 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 18:50 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 18:50 | 1 |
| **Vinyl chloride** | **2.0** | | 1.0 | 0.71 | ug/L | | | 04/17/17 18:50 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/17/17 18:50* | *1* |
| *Dibromofluoromethane* | *94* | | *83 - 123* | | *04/17/17 18:50* | *1* |
| *Toluene-d8 (Surr)* | *97* | | *78 - 126* | | *04/17/17 18:50* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **cis-1,2-Dichloroethylene** | **150** | | 5.0 | 3.3 | ug/L | | | 04/17/17 18:31 | 5 |
| **Trichloroethene** | **110** | | 5.0 | 3.1 | ug/L | | | 04/17/17 18:31 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/17/17 18:31* | *5* |
| *Dibromofluoromethane* | *96* | | *83 - 123* | | *04/17/17 18:31* | *5* |
| *Toluene-d8 (Surr)* | *97* | | *78 - 126* | | *04/17/17 18:31* | *5* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: OW-404U

**Lab Sample ID: 660-80084-4**

**Date Collected: 04/11/17 11:00**
**Matrix: Water**
**Date Received: 04/12/17 09:45**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 14:03 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 14:03 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 14:03 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 14:03 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 14:03 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 14:03 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 14:03 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 14:03 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 14:03 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 14:03 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 14:03 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 14:03 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 14:03 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 14:03 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 14:03 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 14:03 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/17/17 14:03 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 14:03 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 14:03 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 14:03 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 14:03 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 14:03 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 14:03 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 14:03 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 14:03 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/17/17 14:03 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 14:03 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 14:03 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/17/17 14:03 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 14:03 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 14:03 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/17/17 14:03 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/17/17 14:03* | *1* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/17/17 14:03* | *1* |
| *Toluene-d8 (Surr)* | *96* | | *78 - 126* | | *04/17/17 14:03* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: WB-2L

**Date Collected: 04/11/17 10:30**
**Date Received: 04/12/17 09:45**

## Lab Sample ID: 660-80084-5

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 16:55 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 16:55 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 16:55 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 16:55 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 16:55 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 16:55 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 16:55 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 16:55 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 16:55 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 16:55 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 16:55 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 16:55 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 16:55 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 16:55 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 16:55 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 16:55 | 1 |
| **cis-1,2-Dichloroethylene** | **52** | | 1.0 | 0.65 | ug/L | | | 04/17/17 16:55 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 16:55 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 16:55 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 16:55 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 16:55 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 16:55 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 16:55 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 16:55 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 16:55 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/17/17 16:55 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 16:55 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 16:55 | 1 |
| **Trichloroethene** | **3.5** | | 1.0 | 0.61 | ug/L | | | 04/17/17 16:55 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 16:55 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 16:55 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/17/17 16:55 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/17/17 16:55* | *1* |
| *Dibromofluoromethane* | *96* | | *83 - 123* | | *04/17/17 16:55* | *1* |
| *Toluene-d8 (Surr)* | *97* | | *78 - 126* | | *04/17/17 16:55* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: WB-1U

**Date Collected: 04/11/17 08:00**
**Date Received: 04/12/17 09:45**

## Lab Sample ID: 660-80084-6

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 17:15 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 17:15 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 17:15 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 17:15 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 17:15 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 17:15 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 17:15 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 17:15 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 17:15 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 17:15 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 17:15 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 17:15 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 17:15 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 17:15 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 17:15 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 17:15 | 1 |
| **cis-1,2-Dichloroethylene** | **72** | | 1.0 | 0.65 | ug/L | | | 04/17/17 17:15 | 1 |
| **trans-1,2-Dichloroethene** | **0.93** | **J** | 1.0 | 0.67 | ug/L | | | 04/17/17 17:15 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 17:15 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 17:15 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 17:15 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 17:15 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 17:15 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 17:15 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 17:15 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/17/17 17:15 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 17:15 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 17:15 | 1 |
| **Trichloroethene** | **56** | | 1.0 | 0.61 | ug/L | | | 04/17/17 17:15 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 17:15 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 17:15 | 1 |
| **Vinyl chloride** | **2.1** | | 1.0 | 0.71 | ug/L | | | 04/17/17 17:15 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 119* | | *04/17/17 17:15* | *1* |
| *Dibromofluoromethane* | *96* | | *83 - 123* | | *04/17/17 17:15* | *1* |
| *Toluene-d8 (Surr)* | *97* | | *78 - 126* | | *04/17/17 17:15* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-504L

**Date Collected: 04/11/17 07:55**
**Date Received: 04/12/17 09:45**

## Lab Sample ID: 660-80084-7

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 15:58 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 15:58 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 15:58 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 15:58 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 15:58 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 15:58 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 15:58 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 15:58 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 15:58 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 15:58 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 15:58 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 15:58 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 15:58 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 15:58 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 15:58 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 15:58 | 1 |
| **cis-1,2-Dichloroethylene** | **32** | | 1.0 | 0.65 | ug/L | | | 04/17/17 15:58 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 15:58 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 15:58 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 15:58 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 15:58 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 15:58 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 15:58 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 15:58 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 15:58 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/17/17 15:58 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 15:58 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 15:58 | 1 |
| **Trichloroethene** | **12** | | 1.0 | 0.61 | ug/L | | | 04/17/17 15:58 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 15:58 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 15:58 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/17/17 15:58 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 119* | | *04/17/17 15:58* | *1* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/17/17 15:58* | *1* |
| *Toluene-d8 (Surr)* | *98* | | *78 - 126* | | *04/17/17 15:58* | *1* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethane | <1.1 | | 1.1 | 0.55 | ug/L | | | 04/24/17 13:13 | 1 |
| Ethylene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 13:13 | 1 |
| **Methane** | **18** | | 0.58 | 0.29 | ug/L | | | 04/24/17 13:13 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Dissolved Iron** | **89** | **J** | 200 | 50 | ug/L | | 04/18/17 14:09 | 04/19/17 09:47 | 1 |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-504L

**Date Collected: 04/11/17 07:55**
**Date Received: 04/12/17 09:45**

## Lab Sample ID: 660-80084-7

**Matrix: Water**

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1.3 | | 1.0 | 0.50 | mg/L | | | 04/24/17 21:36 | 1 |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: WB-1L

**Date Collected: 04/11/17 08:45**
**Date Received: 04/12/17 09:45**

## Lab Sample ID: 660-80084-8

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 14:42 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 14:42 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 14:42 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 14:42 | 1 |
| Chlorobenzene | <1.0 | F1 | 1.0 | 0.63 | ug/L | | | 04/17/17 14:42 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 14:42 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 14:42 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 14:42 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 14:42 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 14:42 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 14:42 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 14:42 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 14:42 | 1 |
| Dichlorodifluoromethane | <5.0 | F1 | 5.0 | 2.5 | ug/L | | | 04/17/17 14:42 | 1 |
| 1,1-Dichloroethane | <1.0 | F1 | 1.0 | 0.52 | ug/L | | | 04/17/17 14:42 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 14:42 | 1 |
| **trans-1,2-Dichloroethene** | **2.9** | **F1** | 1.0 | 0.67 | ug/L | | | 04/17/17 14:42 | 1 |
| **1,1-Dichloroethene** | **0.80** | **J F1** | 1.0 | 0.67 | ug/L | | | 04/17/17 14:42 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 14:42 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 14:42 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 14:42 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 14:42 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 14:42 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 14:42 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/17/17 14:42 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 14:42 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 14:42 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 14:42 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 14:42 | 1 |
| **Vinyl chloride** | **2.7** | | 1.0 | 0.71 | ug/L | | | 04/17/17 14:42 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 119* | | *04/17/17 14:42* | *1* |
| *Dibromofluoromethane* | *95* | | *83 - 123* | | *04/17/17 14:42* | *1* |
| *Toluene-d8 (Surr)* | *97* | | *78 - 126* | | *04/17/17 14:42* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **cis-1,2-Dichloroethylene** | **150** | | 5.0 | 3.3 | ug/L | | | 04/17/17 17:52 | 5 |
| **Trichloroethene** | **100** | | 5.0 | 3.1 | ug/L | | | 04/17/17 17:52 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/17/17 17:52* | *5* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/17/17 17:52* | *5* |
| *Toluene-d8 (Surr)* | *96* | | *78 - 126* | | *04/17/17 17:52* | *5* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: WB-1L DUP

**Date Collected: 04/11/17 08:45**
**Date Received: 04/12/17 09:45**

## Lab Sample ID: 660-80084-9

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 19:28 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 19:28 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 19:28 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 19:28 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 19:28 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 19:28 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 19:28 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 19:28 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 19:28 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 19:28 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 19:28 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 19:28 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 19:28 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 19:28 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 19:28 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 19:28 | 1 |
| **trans-1,2-Dichloroethene** | **2.8** | | 1.0 | 0.67 | ug/L | | | 04/17/17 19:28 | 1 |
| **1,1-Dichloroethene** | **0.87** | **J** | 1.0 | 0.67 | ug/L | | | 04/17/17 19:28 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 19:28 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 19:28 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 19:28 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 19:28 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 19:28 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 19:28 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/17/17 19:28 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 19:28 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 19:28 | 1 |
| **Trichloroethene** | **99** | | 1.0 | 0.61 | ug/L | | | 04/17/17 19:28 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 19:28 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 19:28 | 1 |
| **Vinyl chloride** | **1.9** | | 1.0 | 0.71 | ug/L | | | 04/17/17 19:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/17/17 19:28* | *1* |
| *Dibromofluoromethane* | *95* | | *83 - 123* | | *04/17/17 19:28* | *1* |
| *Toluene-d8 (Surr)* | *97* | | *78 - 126* | | *04/17/17 19:28* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **cis-1,2-Dichloroethylene** | **140** | | 5.0 | 3.3 | ug/L | | | 04/17/17 18:11 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 119* | | *04/17/17 18:11* | *5* |
| *Dibromofluoromethane* | *97* | | *83 - 123* | | *04/17/17 18:11* | *5* |
| *Toluene-d8 (Surr)* | *97* | | *78 - 126* | | *04/17/17 18:11* | *5* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-504R

**Date Collected: 04/11/17 10:05**
**Date Received: 04/12/17 09:45**

## Lab Sample ID: 660-80084-10

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 14:22 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 14:22 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 14:22 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 14:22 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 14:22 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 14:22 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 14:22 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 14:22 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 14:22 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 14:22 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 14:22 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 14:22 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 14:22 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 14:22 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 14:22 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 14:22 | 1 |
| **cis-1,2-Dichloroethylene** | **22** | | 1.0 | 0.65 | ug/L | | | 04/17/17 14:22 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 14:22 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 14:22 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 14:22 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 14:22 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 14:22 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 14:22 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 14:22 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 14:22 | 1 |
| **Tetrachloroethene** | **1.1** | | 1.0 | 0.50 | ug/L | | | 04/17/17 14:22 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 14:22 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 14:22 | 1 |
| **Trichloroethene** | **25** | | 1.0 | 0.61 | ug/L | | | 04/17/17 14:22 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 14:22 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 14:22 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/17/17 14:22 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 119* | | *04/17/17 14:22* | *1* |
| *Dibromofluoromethane* | *97* | | *83 - 123* | | *04/17/17 14:22* | *1* |
| *Toluene-d8 (Surr)* | *96* | | *78 - 126* | | *04/17/17 14:22* | *1* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethane | <1.1 | | 1.1 | 0.55 | ug/L | | | 04/24/17 13:26 | 1 |
| Ethylene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 13:26 | 1 |
| **Methane** | **1.3** | | 0.58 | 0.29 | ug/L | | | 04/24/17 13:26 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | <200 | | 200 | 50 | ug/L | | 04/18/17 14:09 | 04/19/17 09:50 | 1 |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-504R

**Date Collected: 04/11/17 10:05**
**Date Received: 04/12/17 09:45**

## Lab Sample ID: 660-80084-10

**Matrix: Water**

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1.0 | | 1.0 | 0.50 | mg/L | | | 04/24/17 22:23 | 1 |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-501L

**Date Collected: 04/11/17 12:45**
**Date Received: 04/12/17 09:45**

## Lab Sample ID: 660-80084-11

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 16:17 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 16:17 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 16:17 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 16:17 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 16:17 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 16:17 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 16:17 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 16:17 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 16:17 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 16:17 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 16:17 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 16:17 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 16:17 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 16:17 | 1 |
| **1,1-Dichloroethane** | **0.55** | **J** | 1.0 | 0.52 | ug/L | | | 04/17/17 16:17 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 16:17 | 1 |
| **cis-1,2-Dichloroethylene** | **41** | | 1.0 | 0.65 | ug/L | | | 04/17/17 16:17 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 16:17 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 16:17 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 16:17 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 16:17 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 16:17 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 16:17 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 16:17 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 16:17 | 1 |
| **Tetrachloroethene** | **2.2** | | 1.0 | 0.50 | ug/L | | | 04/17/17 16:17 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 16:17 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 16:17 | 1 |
| **Trichloroethene** | **31** | | 1.0 | 0.61 | ug/L | | | 04/17/17 16:17 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 16:17 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 16:17 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/17/17 16:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/17/17 16:17* | *1* |
| *Dibromofluoromethane* | *97* | | *83 - 123* | | *04/17/17 16:17* | *1* |
| *Toluene-d8 (Surr)* | *97* | | *78 - 126* | | *04/17/17 16:17* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: OW-101L

**Lab Sample ID: 660-80084-12**

**Date Collected: 04/11/17 13:40**

**Matrix: Water**

**Date Received: 04/12/17 09:45**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 16:36 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 16:36 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 16:36 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 16:36 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 16:36 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 16:36 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 16:36 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 16:36 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 16:36 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 16:36 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 16:36 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 16:36 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 16:36 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 16:36 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 16:36 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 16:36 | 1 |
| **cis-1,2-Dichloroethylene** | **41** | | 1.0 | 0.65 | ug/L | | | 04/17/17 16:36 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 16:36 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 16:36 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 16:36 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 16:36 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 16:36 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 16:36 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 16:36 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 16:36 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/17/17 16:36 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 16:36 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 16:36 | 1 |
| **Trichloroethene** | **2.6** | | 1.0 | 0.61 | ug/L | | | 04/17/17 16:36 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 16:36 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 16:36 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/17/17 16:36 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/17/17 16:36* | *1* |
| *Dibromofluoromethane* | *97* | | *83 - 123* | | *04/17/17 16:36* | *1* |
| *Toluene-d8 (Surr)* | *96* | | *78 - 126* | | *04/17/17 16:36* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-503L

**Date Collected: 04/11/17 12:50**
**Date Received: 04/12/17 09:45**

## Lab Sample ID: 660-80084-13

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 17:33 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 17:33 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 17:33 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 17:33 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 17:33 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 17:33 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 17:33 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 17:33 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 17:33 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 17:33 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 17:33 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 17:33 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 17:33 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 17:33 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 17:33 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 17:33 | 1 |
| **cis-1,2-Dichloroethylene** | **73** | | 1.0 | 0.65 | ug/L | | | 04/17/17 17:33 | 1 |
| **trans-1,2-Dichloroethene** | **4.5** | | 1.0 | 0.67 | ug/L | | | 04/17/17 17:33 | 1 |
| **1,1-Dichloroethene** | **0.84** | **J** | 1.0 | 0.67 | ug/L | | | 04/17/17 17:33 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 17:33 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 17:33 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 17:33 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 17:33 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 17:33 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 17:33 | 1 |
| **Tetrachloroethene** | **2.9** | | 1.0 | 0.50 | ug/L | | | 04/17/17 17:33 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 17:33 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 17:33 | 1 |
| **Trichloroethene** | **60** | | 1.0 | 0.61 | ug/L | | | 04/17/17 17:33 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 17:33 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 17:33 | 1 |
| **Vinyl chloride** | **6.7** | | 1.0 | 0.71 | ug/L | | | 04/17/17 17:33 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/17/17 17:33* | *1* |
| *Dibromofluoromethane* | *95* | | *83 - 123* | | *04/17/17 17:33* | *1* |
| *Toluene-d8 (Surr)* | *97* | | *78 - 126* | | *04/17/17 17:33* | *1* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethane | <1.1 | | 1.1 | 0.55 | ug/L | | | 04/24/17 13:39 | 1 |
| Ethylene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 13:39 | 1 |
| **Methane** | **29** | | 0.58 | 0.29 | ug/L | | | 04/24/17 13:39 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | <200 | | 200 | 50 | ug/L | | 04/18/17 14:09 | 04/19/17 09:59 | 1 |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-503L

**Date Collected: 04/11/17 12:50**
**Date Received: 04/12/17 09:45**

## Lab Sample ID: 660-80084-13

**Matrix: Water**

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1.1 | | 1.0 | 0.50 | mg/L | | | 04/24/17 22:44 | 1 |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: Trip Blank

**Lab Sample ID: 660-80120-2**

**Date Collected: 04/12/17 00:00**
**Matrix: Water**
**Date Received: 04/13/17 09:35**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 13:31 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 13:31 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 13:31 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 13:31 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 13:31 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 13:31 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/22/17 13:31 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 13:31 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/22/17 13:31 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 13:31 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/22/17 13:31 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 13:31 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/22/17 13:31 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 13:31 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 13:31 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 13:31 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/22/17 13:31 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 13:31 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 13:31 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 13:31 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 13:31 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 13:31 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 13:31 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 13:31 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 13:31 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/22/17 13:31 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 13:31 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 13:31 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/22/17 13:31 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 13:31 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 13:31 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/22/17 13:31 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 119* | | *04/22/17 13:31* | *1* |
| *Dibromofluoromethane* | *99* | | *83 - 123* | | *04/22/17 13:31* | *1* |
| *Toluene-d8 (Surr)* | *93* | | *78 - 126* | | *04/22/17 13:31* | *1* |

## Client Sample ID: GZ-519U

**Date Collected: 04/12/17 06:55**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80120-3

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 19:46 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 19:46 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 19:46 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 19:46 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 19:46 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 19:46 | 1 |
| **Chloroform** | **2.1** | | 1.0 | 0.90 | ug/L | | | 04/22/17 19:46 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 19:46 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/22/17 19:46 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 19:46 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/22/17 19:46 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 19:46 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/22/17 19:46 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 19:46 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 19:46 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 19:46 | 1 |
| **cis-1,2-Dichloroethylene** | **57** | | 1.0 | 0.65 | ug/L | | | 04/22/17 19:46 | 1 |
| **trans-1,2-Dichloroethene** | **2.5** | | 1.0 | 0.67 | ug/L | | | 04/22/17 19:46 | 1 |
| **1,1-Dichloroethene** | **1.8** | | 1.0 | 0.67 | ug/L | | | 04/22/17 19:46 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 19:46 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 19:46 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 19:46 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 19:46 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 19:46 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 19:46 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/22/17 19:46 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 19:46 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 19:46 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 19:46 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 19:46 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/22/17 19:46 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 119* | | *04/22/17 19:46* | *1* |
| *Dibromofluoromethane* | *95* | | *83 - 123* | | *04/22/17 19:46* | *1* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/22/17 19:46* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Trichloroethene** | **120** | | 5.0 | 3.1 | ug/L | | | 04/22/17 18:10 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 119* | | *04/22/17 18:10* | *5* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/22/17 18:10* | *5* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/22/17 18:10* | *5* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethane | <1.1 | | 1.1 | 0.55 | ug/L | | | 04/24/17 13:52 | 1 |
| Ethylene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 13:52 | 1 |

## Client Sample ID: GZ-519U

**Lab Sample ID: 660-80120-3**

**Date Collected: 04/12/17 06:55**

**Matrix: Water**

**Date Received: 04/13/17 09:35**

### Method: RSK-175 - Dissolved Gases (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 1.1 | | 0.58 | 0.29 | ug/L | | | 04/24/17 13:52 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | <200 | | 200 | 50 | ug/L | | 04/18/17 14:09 | 04/19/17 10:02 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 0.96 | J | 1.0 | 0.50 | mg/L | | | 04/24/17 23:02 | 1 |

## Client Sample ID: OW-101

**Date Collected: 04/12/17 08:05**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80120-4

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <10 | | 10 | 5.8 | ug/L | | | 04/22/17 20:25 | 10 |
| Bromoform | <10 | | 10 | 6.3 | ug/L | | | 04/22/17 20:25 | 10 |
| Bromomethane | <50 | | 50 | 25 | ug/L | | | 04/22/17 20:25 | 10 |
| Carbon tetrachloride | <10 | | 10 | 4.3 | ug/L | | | 04/22/17 20:25 | 10 |
| Chlorobenzene | <10 | | 10 | 6.3 | ug/L | | | 04/22/17 20:25 | 10 |
| Chloroethane | <50 | | 50 | 25 | ug/L | | | 04/22/17 20:25 | 10 |
| Chloroform | <10 | | 10 | 9.0 | ug/L | | | 04/22/17 20:25 | 10 |
| Chloromethane | <40 | | 40 | 10 | ug/L | | | 04/22/17 20:25 | 10 |
| Dibromochloromethane | <10 | | 10 | 3.1 | ug/L | | | 04/22/17 20:25 | 10 |
| Dibromomethane | <10 | | 10 | 4.6 | ug/L | | | 04/22/17 20:25 | 10 |
| 1,2-Dichlorobenzene | <10 | | 10 | 4.9 | ug/L | | | 04/22/17 20:25 | 10 |
| 1,3-Dichlorobenzene | <10 | | 10 | 6.4 | ug/L | | | 04/22/17 20:25 | 10 |
| 1,4-Dichlorobenzene | <10 | | 10 | 6.0 | ug/L | | | 04/22/17 20:25 | 10 |
| Dichlorodifluoromethane | <50 | | 50 | 25 | ug/L | | | 04/22/17 20:25 | 10 |
| 1,1-Dichloroethane | <10 | | 10 | 5.2 | ug/L | | | 04/22/17 20:25 | 10 |
| 1,2-Dichloroethane | <10 | | 10 | 5.7 | ug/L | | | 04/22/17 20:25 | 10 |
| **trans-1,2-Dichloroethene** | **220** | | 10 | 6.7 | ug/L | | | 04/22/17 20:25 | 10 |
| **1,1-Dichloroethene** | **14** | | 10 | 6.7 | ug/L | | | 04/22/17 20:25 | 10 |
| 1,2-Dichloropropane | <10 | | 10 | 5.2 | ug/L | | | 04/22/17 20:25 | 10 |
| cis-1,3-Dichloropropene | <10 | | 10 | 3.9 | ug/L | | | 04/22/17 20:25 | 10 |
| trans-1,3-Dichloropropene | <10 | | 10 | 2.7 | ug/L | | | 04/22/17 20:25 | 10 |
| Methylene Chloride | <100 | | 100 | 50 | ug/L | | | 04/22/17 20:25 | 10 |
| 1,1,1,2-Tetrachloroethane | <10 | | 10 | 6.3 | ug/L | | | 04/22/17 20:25 | 10 |
| 1,1,2,2-Tetrachloroethane | <10 | | 10 | 1.7 | ug/L | | | 04/22/17 20:25 | 10 |
| Tetrachloroethene | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 20:25 | 10 |
| 1,1,1-Trichloroethane | <10 | | 10 | 4.7 | ug/L | | | 04/22/17 20:25 | 10 |
| 1,1,2-Trichloroethane | <10 | | 10 | 4.7 | ug/L | | | 04/22/17 20:25 | 10 |
| Trichlorofluoromethane | <50 | | 50 | 25 | ug/L | | | 04/22/17 20:25 | 10 |
| 1,2,3-Trichloropropane | <10 | | 10 | 4.4 | ug/L | | | 04/22/17 20:25 | 10 |
| Vinyl chloride | <10 | | 10 | 7.1 | ug/L | | | 04/22/17 20:25 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/22/17 20:25* | *10* |
| *Dibromofluoromethane* | *93* | | *83 - 123* | | *04/22/17 20:25* | *10* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/22/17 20:25* | *10* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **cis-1,2-Dichloroethylene** | **1600** | | 100 | 65 | ug/L | | | 04/22/17 18:29 | 100 |
| **Trichloroethene** | **2400** | | 100 | 61 | ug/L | | | 04/22/17 18:29 | 100 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/22/17 18:29* | *100* |
| *Dibromofluoromethane* | *97* | | *83 - 123* | | *04/22/17 18:29* | *100* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/22/17 18:29* | *100* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethane | <1.1 | | 1.1 | 0.55 | ug/L | | | 04/24/17 14:05 | 1 |
| Ethylene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 14:05 | 1 |

## Client Sample ID: OW-101

**Date Collected: 04/12/17 08:05**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80120-4

**Matrix: Water**

### Method: RSK-175 - Dissolved Gases (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 140 | | 0.58 | 0.29 | ug/L | | | 04/24/17 14:05 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | <200 | | 200 | 50 | ug/L | | 04/18/17 14:09 | 04/19/17 10:05 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1.6 | | 1.0 | 0.50 | mg/L | | | 04/24/17 23:21 | 1 |

## Client Sample ID: GZ-505R

**Date Collected: 04/12/17 12:20**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80120-5

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 20:06 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 20:06 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 20:06 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 20:06 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 20:06 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 20:06 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/22/17 20:06 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 20:06 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/22/17 20:06 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 20:06 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/22/17 20:06 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 20:06 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/22/17 20:06 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 20:06 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 20:06 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 20:06 | 1 |
| **cis-1,2-Dichloroethylene** | **74** | | 1.0 | 0.65 | ug/L | | | 04/22/17 20:06 | 1 |
| **trans-1,2-Dichloroethene** | **1.0** | | 1.0 | 0.67 | ug/L | | | 04/22/17 20:06 | 1 |
| **1,1-Dichloroethene** | **1.4** | | 1.0 | 0.67 | ug/L | | | 04/22/17 20:06 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 20:06 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 20:06 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 20:06 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 20:06 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 20:06 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 20:06 | 1 |
| **Tetrachloroethene** | **2.6** | | 1.0 | 0.50 | ug/L | | | 04/22/17 20:06 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 20:06 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 20:06 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 20:06 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 20:06 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/22/17 20:06 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/22/17 20:06* | *1* |
| *Dibromofluoromethane* | *93* | | *83 - 123* | | *04/22/17 20:06* | *1* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/22/17 20:06* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Trichloroethene** | **120** | | 5.0 | 3.1 | ug/L | | | 04/22/17 18:48 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 119* | | *04/22/17 18:48* | *5* |
| *Dibromofluoromethane* | *95* | | *83 - 123* | | *04/22/17 18:48* | *5* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/22/17 18:48* | *5* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethane | <1.1 | | 1.1 | 0.55 | ug/L | | | 04/24/17 14:18 | 1 |
| Ethylene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 14:18 | 1 |

## Client Sample ID: GZ-505R

**Lab Sample ID: 660-80120-5**

**Date Collected: 04/12/17 12:20**

**Matrix: Water**

**Date Received: 04/13/17 09:35**

### Method: RSK-175 - Dissolved Gases (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 18 | | 0.58 | 0.29 | ug/L | | | 04/24/17 14:18 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | <200 | | 200 | 50 | ug/L | | 04/18/17 14:09 | 04/19/17 10:08 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 0.98 | J | 1.0 | 0.50 | mg/L | | | 04/24/17 23:39 | 1 |

## Client Sample ID: OW-307

**Date Collected: 04/12/17 11:35**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80120-6

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 19:27 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 19:27 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 19:27 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 19:27 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 19:27 | 1 |
| **Chloroethane** | **8.0** | | 5.0 | 2.5 | ug/L | | | 04/22/17 19:27 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/22/17 19:27 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 19:27 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/22/17 19:27 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 19:27 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/22/17 19:27 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 19:27 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/22/17 19:27 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 19:27 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 19:27 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 19:27 | 1 |
| **trans-1,2-Dichloroethene** | **7.1** | | 1.0 | 0.67 | ug/L | | | 04/22/17 19:27 | 1 |
| **1,1-Dichloroethene** | **1.0** | | 1.0 | 0.67 | ug/L | | | 04/22/17 19:27 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 19:27 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 19:27 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 19:27 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 19:27 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 19:27 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 19:27 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/22/17 19:27 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 19:27 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 19:27 | 1 |
| **Trichloroethene** | **36** | | 1.0 | 0.61 | ug/L | | | 04/22/17 19:27 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 19:27 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 19:27 | 1 |
| **Vinyl chloride** | **66** | | 1.0 | 0.71 | ug/L | | | 04/22/17 19:27 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 119* | | *04/22/17 19:27* | *1* |
| *Dibromofluoromethane* | *94* | | *83 - 123* | | *04/22/17 19:27* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/22/17 19:27* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **cis-1,2-Dichloroethylene** | **370** | | 10 | 6.5 | ug/L | | | 04/22/17 19:08 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/22/17 19:08* | *10* |
| *Dibromofluoromethane* | *93* | | *83 - 123* | | *04/22/17 19:08* | *10* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/22/17 19:08* | *10* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Ethane** | **0.78** | **J** | 1.1 | 0.55 | ug/L | | | 04/24/17 17:22 | 1 |
| **Ethylene** | **3.4** | | 1.0 | 0.50 | ug/L | | | 04/24/17 17:22 | 1 |

## Client Sample ID: OW-307

**Date Collected: 04/12/17 11:35**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80120-6

**Matrix: Water**

### Method: RSK-175 - Dissolved Gases (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Methane (TCD) | 6600 | | 390 | 39 | ug/L | | | 04/24/17 17:22 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | 3100 | | 200 | 50 | ug/L | | 04/18/17 14:09 | 04/19/17 10:11 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1.2 | | 1.0 | 0.50 | mg/L | | | 04/24/17 23:58 | 1 |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: WB-3L

**Date Collected: 04/12/17 14:05**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80120-7

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 13:50 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 13:50 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 13:50 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 13:50 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 13:50 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 13:50 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/22/17 13:50 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 13:50 | 1 |
| Dibromochloromethane | <1.0 | F1 | 1.0 | 0.31 | ug/L | | | 04/22/17 13:50 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 13:50 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/22/17 13:50 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 13:50 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/22/17 13:50 | 1 |
| Dichlorodifluoromethane | <5.0 | F1 | 5.0 | 2.5 | ug/L | | | 04/22/17 13:50 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 13:50 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 13:50 | 1 |
| **cis-1,2-Dichloroethylene** | **85** | | 1.0 | 0.65 | ug/L | | | 04/22/17 13:50 | 1 |
| **trans-1,2-Dichloroethene** | **3.7** | | 1.0 | 0.67 | ug/L | | | 04/22/17 13:50 | 1 |
| **1,1-Dichloroethene** | **0.72** | **J** | 1.0 | 0.67 | ug/L | | | 04/22/17 13:50 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 13:50 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 13:50 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 13:50 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 13:50 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 13:50 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 13:50 | 1 |
| **Tetrachloroethene** | **3.7** | | 1.0 | 0.50 | ug/L | | | 04/22/17 13:50 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 13:50 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 13:50 | 1 |
| **Trichloroethene** | **65** | | 1.0 | 0.61 | ug/L | | | 04/22/17 13:50 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 13:50 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 13:50 | 1 |
| **Vinyl chloride** | **3.6** | | 1.0 | 0.71 | ug/L | | | 04/22/17 13:50 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 119* | | *04/22/17 13:50* | *1* |
| *Dibromofluoromethane* | *96* | | *83 - 123* | | *04/22/17 13:50* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/22/17 13:50* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: WB-3L DUP

**Lab Sample ID: 660-80120-8**

**Date Collected: 04/12/17 14:05**
**Matrix: Water**
**Date Received: 04/13/17 09:35**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 14:26 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 14:26 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 14:26 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 14:26 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 14:26 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 14:26 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/22/17 14:26 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 14:26 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/22/17 14:26 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 14:26 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/22/17 14:26 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 14:26 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/22/17 14:26 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 14:26 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 14:26 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 14:26 | 1 |
| **cis-1,2-Dichloroethylene** | **80** | | 1.0 | 0.65 | ug/L | | | 04/22/17 14:26 | 1 |
| **trans-1,2-Dichloroethene** | **3.5** | | 1.0 | 0.67 | ug/L | | | 04/22/17 14:26 | 1 |
| **1,1-Dichloroethene** | **0.72** | **J** | 1.0 | 0.67 | ug/L | | | 04/22/17 14:26 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 14:26 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 14:26 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 14:26 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 14:26 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 14:26 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 14:26 | 1 |
| **Tetrachloroethene** | **3.6** | | 1.0 | 0.50 | ug/L | | | 04/22/17 14:26 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 14:26 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 14:26 | 1 |
| **Trichloroethene** | **61** | | 1.0 | 0.61 | ug/L | | | 04/22/17 14:26 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 14:26 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 14:26 | 1 |
| **Vinyl chloride** | **3.3** | | 1.0 | 0.71 | ug/L | | | 04/22/17 14:26 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/22/17 14:26* | *1* |
| *Dibromofluoromethane* | *95* | | *83 - 123* | | *04/22/17 14:26* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/22/17 14:26* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: WB-2U

**Date Collected: 04/12/17 14:50**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80120-9

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 16:15 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 16:15 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 16:15 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 16:15 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 16:15 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 16:15 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/22/17 16:15 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 16:15 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/22/17 16:15 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 16:15 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/22/17 16:15 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 16:15 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/22/17 16:15 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 16:15 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 16:15 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 16:15 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/22/17 16:15 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 16:15 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 16:15 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 16:15 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 16:15 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 16:15 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 16:15 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 16:15 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 16:15 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/22/17 16:15 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 16:15 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 16:15 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/22/17 16:15 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 16:15 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 16:15 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/22/17 16:15 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/22/17 16:15* | *1* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/22/17 16:15* | *1* |
| *Toluene-d8 (Surr)* | *93* | | *78 - 126* | | *04/22/17 16:15* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: Trip Blank

**Lab Sample ID: 660-80121-2**

**Date Collected: 04/12/17 06:25**
**Matrix: Water**
**Date Received: 04/13/17 09:35**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 16:34 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 16:34 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 16:34 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 16:34 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 16:34 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 16:34 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/22/17 16:34 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 16:34 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/22/17 16:34 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 16:34 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/22/17 16:34 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 16:34 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/22/17 16:34 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 16:34 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 16:34 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 16:34 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/22/17 16:34 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 16:34 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 16:34 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 16:34 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 16:34 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 16:34 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 16:34 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 16:34 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 16:34 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/22/17 16:34 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 16:34 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 16:34 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/22/17 16:34 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 16:34 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 16:34 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/22/17 16:34 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | | *70 - 119* | | *04/22/17 16:34* | *1* |
| *Dibromofluoromethane* | *99* | | *83 - 123* | | *04/22/17 16:34* | *1* |
| *Toluene-d8 (Surr)* | *93* | | *78 - 126* | | *04/22/17 16:34* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: Field Blank

**Lab Sample ID: 660-80121-3**

**Date Collected: 04/12/17 06:30**
**Matrix: Water**
**Date Received: 04/13/17 09:35**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 16:54 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 16:54 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 16:54 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 16:54 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 16:54 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 16:54 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/22/17 16:54 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 16:54 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/22/17 16:54 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 16:54 | 1 |
| **1,2-Dichlorobenzene** | **0.63** | **J** | 1.0 | 0.49 | ug/L | | | 04/22/17 16:54 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 16:54 | 1 |
| **1,4-Dichlorobenzene** | **1.3** | | 1.0 | 0.60 | ug/L | | | 04/22/17 16:54 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 16:54 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 16:54 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 16:54 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/22/17 16:54 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 16:54 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 16:54 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 16:54 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 16:54 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 16:54 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 16:54 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 16:54 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 16:54 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/22/17 16:54 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 16:54 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 16:54 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/22/17 16:54 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 16:54 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 16:54 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/22/17 16:54 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/22/17 16:54* | *1* |
| *Dibromofluoromethane* | *99* | | *83 - 123* | | *04/22/17 16:54* | *1* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/22/17 16:54* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: OW-304R

**Date Collected: 04/12/17 07:55**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80121-4

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <2.0 | | 2.0 | 1.2 | ug/L | | | 04/24/17 01:07 | 2 |
| Bromoform | <2.0 | | 2.0 | 1.3 | ug/L | | | 04/24/17 01:07 | 2 |
| Bromomethane | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 01:07 | 2 |
| Carbon tetrachloride | <2.0 | | 2.0 | 0.86 | ug/L | | | 04/24/17 01:07 | 2 |
| Chlorobenzene | <2.0 | | 2.0 | 1.3 | ug/L | | | 04/24/17 01:07 | 2 |
| Chloroethane | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 01:07 | 2 |
| Chloroform | <2.0 | | 2.0 | 1.8 | ug/L | | | 04/24/17 01:07 | 2 |
| Chloromethane | <8.0 | | 8.0 | 2.0 | ug/L | | | 04/24/17 01:07 | 2 |
| Dibromochloromethane | <2.0 | | 2.0 | 0.62 | ug/L | | | 04/24/17 01:07 | 2 |
| Dibromomethane | <2.0 | | 2.0 | 0.92 | ug/L | | | 04/24/17 01:07 | 2 |
| 1,2-Dichlorobenzene | <2.0 | | 2.0 | 0.98 | ug/L | | | 04/24/17 01:07 | 2 |
| 1,3-Dichlorobenzene | <2.0 | | 2.0 | 1.3 | ug/L | | | 04/24/17 01:07 | 2 |
| 1,4-Dichlorobenzene | <2.0 | | 2.0 | 1.2 | ug/L | | | 04/24/17 01:07 | 2 |
| Dichlorodifluoromethane | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 01:07 | 2 |
| 1,1-Dichloroethane | <2.0 | | 2.0 | 1.0 | ug/L | | | 04/24/17 01:07 | 2 |
| **1,2-Dichloroethane** | **5.0** | | 2.0 | 1.1 | ug/L | | | 04/24/17 01:07 | 2 |
| **cis-1,2-Dichloroethylene** | **180** | | 2.0 | 1.3 | ug/L | | | 04/24/17 01:07 | 2 |
| **trans-1,2-Dichloroethene** | **2.5** | | 2.0 | 1.3 | ug/L | | | 04/24/17 01:07 | 2 |
| 1,1-Dichloroethene | <2.0 | | 2.0 | 1.3 | ug/L | | | 04/24/17 01:07 | 2 |
| 1,2-Dichloropropane | <2.0 | | 2.0 | 1.0 | ug/L | | | 04/24/17 01:07 | 2 |
| cis-1,3-Dichloropropene | <2.0 | | 2.0 | 0.78 | ug/L | | | 04/24/17 01:07 | 2 |
| trans-1,3-Dichloropropene | <2.0 | | 2.0 | 0.54 | ug/L | | | 04/24/17 01:07 | 2 |
| Methylene Chloride | <20 | | 20 | 10 | ug/L | | | 04/24/17 01:07 | 2 |
| 1,1,1,2-Tetrachloroethane | <2.0 | | 2.0 | 1.3 | ug/L | | | 04/24/17 01:07 | 2 |
| 1,1,2,2-Tetrachloroethane | <2.0 | | 2.0 | 0.34 | ug/L | | | 04/24/17 01:07 | 2 |
| **Tetrachloroethene** | **2.0** | | 2.0 | 1.0 | ug/L | | | 04/24/17 01:07 | 2 |
| 1,1,1-Trichloroethane | <2.0 | | 2.0 | 0.94 | ug/L | | | 04/24/17 01:07 | 2 |
| 1,1,2-Trichloroethane | <2.0 | | 2.0 | 0.94 | ug/L | | | 04/24/17 01:07 | 2 |
| Trichlorofluoromethane | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 01:07 | 2 |
| 1,2,3-Trichloropropane | <2.0 | | 2.0 | 0.88 | ug/L | | | 04/24/17 01:07 | 2 |
| **Vinyl chloride** | **96** | | 2.0 | 1.4 | ug/L | | | 04/24/17 01:07 | 2 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 119* | | *04/24/17 01:07* | *2* |
| *Dibromofluoromethane* | *93* | | *83 - 123* | | *04/24/17 01:07* | *2* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/24/17 01:07* | *2* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Trichloroethene** | **860** | | 20 | 12 | ug/L | | | 04/23/17 21:55 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/23/17 21:55* | *20* |
| *Dibromofluoromethane* | *96* | | *83 - 123* | | *04/23/17 21:55* | *20* |
| *Toluene-d8 (Surr)* | *93* | | *78 - 126* | | *04/23/17 21:55* | *20* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: Equipment Blank 1

**Lab Sample ID: 660-80121-5**

**Date Collected: 04/12/17 07:40**
**Matrix: Water**
**Date Received: 04/13/17 09:35**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 17:13 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 17:13 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 17:13 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 17:13 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 17:13 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 17:13 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/22/17 17:13 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 17:13 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/22/17 17:13 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 17:13 | 1 |
| **1,2-Dichlorobenzene** | **0.65** | **J** | 1.0 | 0.49 | ug/L | | | 04/22/17 17:13 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 17:13 | 1 |
| **1,4-Dichlorobenzene** | **1.3** | | 1.0 | 0.60 | ug/L | | | 04/22/17 17:13 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 17:13 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 17:13 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 17:13 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/22/17 17:13 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 17:13 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 17:13 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 17:13 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 17:13 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 17:13 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 17:13 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 17:13 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 17:13 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/22/17 17:13 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 17:13 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 17:13 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/22/17 17:13 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 17:13 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 17:13 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/22/17 17:13 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 119* | | *04/22/17 17:13* | *1* |
| *Dibromofluoromethane* | *97* | | *83 - 123* | | *04/22/17 17:13* | *1* |
| *Toluene-d8 (Surr)* | *92* | | *78 - 126* | | *04/22/17 17:13* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-701L

**Date Collected: 04/12/17 10:05**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80121-6

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 17:51 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 17:51 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 17:51 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 17:51 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 17:51 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 17:51 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/22/17 17:51 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 17:51 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/22/17 17:51 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 17:51 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/22/17 17:51 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 17:51 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/22/17 17:51 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 17:51 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 17:51 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 17:51 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/22/17 17:51 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 17:51 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 17:51 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 17:51 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 17:51 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 17:51 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 17:51 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 17:51 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 17:51 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/22/17 17:51 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 17:51 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 17:51 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/22/17 17:51 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 17:51 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 17:51 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/22/17 17:51 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/22/17 17:51* | *1* |
| *Dibromofluoromethane* | *101* | | *83 - 123* | | *04/22/17 17:51* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/22/17 17:51* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: Equipment Blank 2

**Lab Sample ID: 660-80121-7**

**Date Collected: 04/12/17 08:05**
**Matrix: Water**
**Date Received: 04/13/17 09:35**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 17:32 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 17:32 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 17:32 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 17:32 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 17:32 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 17:32 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/22/17 17:32 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 17:32 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/22/17 17:32 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 17:32 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/22/17 17:32 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 17:32 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/22/17 17:32 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 17:32 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 17:32 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 17:32 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/22/17 17:32 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 17:32 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 17:32 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 17:32 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 17:32 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 17:32 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 17:32 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 17:32 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 17:32 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/22/17 17:32 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 17:32 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 17:32 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/22/17 17:32 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 17:32 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 17:32 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/22/17 17:32 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 119* | | *04/22/17 17:32* | *1* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/22/17 17:32* | *1* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/22/17 17:32* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-702R

**Date Collected: 04/12/17 09:35**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80121-8

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/23/17 21:36 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 21:36 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 21:36 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/23/17 21:36 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 21:36 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 21:36 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/23/17 21:36 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/23/17 21:36 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/23/17 21:36 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/23/17 21:36 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/23/17 21:36 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/23/17 21:36 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/23/17 21:36 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 21:36 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 21:36 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/23/17 21:36 | 1 |
| **cis-1,2-Dichloroethylene** | **43** | | 1.0 | 0.65 | ug/L | | | 04/23/17 21:36 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/23/17 21:36 | 1 |
| **1,1-Dichloroethene** | **0.68** | **J** | 1.0 | 0.67 | ug/L | | | 04/23/17 21:36 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 21:36 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/23/17 21:36 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/23/17 21:36 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/23/17 21:36 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 21:36 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/23/17 21:36 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/23/17 21:36 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 21:36 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 21:36 | 1 |
| **Trichloroethene** | **22** | | 1.0 | 0.61 | ug/L | | | 04/23/17 21:36 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 21:36 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/23/17 21:36 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/23/17 21:36 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/23/17 21:36* | *1* |
| *Dibromofluoromethane* | *96* | | *83 - 123* | | *04/23/17 21:36* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/23/17 21:36* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-601R

**Date Collected: 04/12/17 10:20**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80121-9

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/23/17 19:23 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 19:23 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 19:23 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/23/17 19:23 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 19:23 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 19:23 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/23/17 19:23 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/23/17 19:23 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/23/17 19:23 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/23/17 19:23 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/23/17 19:23 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/23/17 19:23 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/23/17 19:23 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 19:23 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 19:23 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/23/17 19:23 | 1 |
| **cis-1,2-Dichloroethylene** | **32** | | 1.0 | 0.65 | ug/L | | | 04/23/17 19:23 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/23/17 19:23 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/23/17 19:23 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 19:23 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/23/17 19:23 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/23/17 19:23 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/23/17 19:23 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 19:23 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/23/17 19:23 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/23/17 19:23 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 19:23 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 19:23 | 1 |
| **Trichloroethene** | **1.9** | | 1.0 | 0.61 | ug/L | | | 04/23/17 19:23 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 19:23 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/23/17 19:23 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/23/17 19:23 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/23/17 19:23* | *1* |
| *Dibromofluoromethane* | *96* | | *83 - 123* | | *04/23/17 19:23* | *1* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/23/17 19:23* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-505R DUP

**Lab Sample ID: 660-80121-10**

**Date Collected: 04/12/17 12:20**
**Date Received: 04/13/17 09:35**

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/24/17 00:29 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 00:29 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 00:29 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/24/17 00:29 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 00:29 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 00:29 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/24/17 00:29 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/24/17 00:29 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/24/17 00:29 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/24/17 00:29 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/24/17 00:29 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/24/17 00:29 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/24/17 00:29 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 00:29 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 00:29 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/24/17 00:29 | 1 |
| **cis-1,2-Dichloroethylene** | **72** | | 1.0 | 0.65 | ug/L | | | 04/24/17 00:29 | 1 |
| **trans-1,2-Dichloroethene** | **1.1** | | 1.0 | 0.67 | ug/L | | | 04/24/17 00:29 | 1 |
| **1,1-Dichloroethene** | **1.6** | | 1.0 | 0.67 | ug/L | | | 04/24/17 00:29 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 00:29 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/24/17 00:29 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/24/17 00:29 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 00:29 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 00:29 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/24/17 00:29 | 1 |
| **Tetrachloroethene** | **2.7** | | 1.0 | 0.50 | ug/L | | | 04/24/17 00:29 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 00:29 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 00:29 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 00:29 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/24/17 00:29 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/24/17 00:29 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/24/17 00:29* | *1* |
| *Dibromofluoromethane* | *93* | | *83 - 123* | | *04/24/17 00:29* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/24/17 00:29* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Trichloroethene** | **130** | | 10 | 6.1 | ug/L | | | 04/23/17 22:15 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 119* | | *04/23/17 22:15* | *10* |
| *Dibromofluoromethane* | *97* | | *83 - 123* | | *04/23/17 22:15* | *10* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/23/17 22:15* | *10* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-701R

**Date Collected: 04/12/17 11:00**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80121-11

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/23/17 19:41 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 19:41 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 19:41 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/23/17 19:41 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 19:41 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 19:41 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/23/17 19:41 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/23/17 19:41 | 1 |
| Dibromochloromethane | <1.0 | F1 | 1.0 | 0.31 | ug/L | | | 04/23/17 19:41 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/23/17 19:41 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/23/17 19:41 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/23/17 19:41 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/23/17 19:41 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 19:41 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 19:41 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/23/17 19:41 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/23/17 19:41 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/23/17 19:41 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/23/17 19:41 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 19:41 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/23/17 19:41 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/23/17 19:41 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/23/17 19:41 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 19:41 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/23/17 19:41 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/23/17 19:41 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 19:41 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 19:41 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/23/17 19:41 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 19:41 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/23/17 19:41 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/23/17 19:41 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 119* | | *04/23/17 19:41* | *1* |
| *Dibromofluoromethane* | *99* | | *83 - 123* | | *04/23/17 19:41* | *1* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/23/17 19:41* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-703R DUP

**Lab Sample ID: 660-80121-12**

**Date Collected: 04/12/17 11:30**
**Date Received: 04/13/17 09:35**

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/23/17 23:51 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 23:51 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 23:51 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/23/17 23:51 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 23:51 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 23:51 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/23/17 23:51 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/23/17 23:51 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/23/17 23:51 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/23/17 23:51 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/23/17 23:51 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/23/17 23:51 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/23/17 23:51 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 23:51 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 23:51 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/23/17 23:51 | 1 |
| **cis-1,2-Dichloroethylene** | **33** | | 1.0 | 0.65 | ug/L | | | 04/23/17 23:51 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/23/17 23:51 | 1 |
| **1,1-Dichloroethene** | **1.7** | | 1.0 | 0.67 | ug/L | | | 04/23/17 23:51 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 23:51 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/23/17 23:51 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/23/17 23:51 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/23/17 23:51 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 23:51 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/23/17 23:51 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/23/17 23:51 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 23:51 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 23:51 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 23:51 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/23/17 23:51 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/23/17 23:51 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/23/17 23:51* | *1* |
| *Dibromofluoromethane* | *95* | | *83 - 123* | | *04/23/17 23:51* | *1* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/23/17 23:51* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Trichloroethene** | **100** | | 5.0 | 3.1 | ug/L | | | 04/23/17 22:33 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/23/17 22:33* | *5* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/23/17 22:33* | *5* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/23/17 22:33* | *5* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-703R

**Date Collected: 04/12/17 11:30**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80121-13

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/24/17 00:10 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 00:10 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 00:10 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/24/17 00:10 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 00:10 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 00:10 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/24/17 00:10 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/24/17 00:10 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/24/17 00:10 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/24/17 00:10 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/24/17 00:10 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/24/17 00:10 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/24/17 00:10 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 00:10 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 00:10 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/24/17 00:10 | 1 |
| **cis-1,2-Dichloroethylene** | **33** | | 1.0 | 0.65 | ug/L | | | 04/24/17 00:10 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 00:10 | 1 |
| **1,1-Dichloroethene** | **1.6** | | 1.0 | 0.67 | ug/L | | | 04/24/17 00:10 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 00:10 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/24/17 00:10 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/24/17 00:10 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 00:10 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 00:10 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/24/17 00:10 | 1 |
| **Tetrachloroethene** | **0.95** | **J** | 1.0 | 0.50 | ug/L | | | 04/24/17 00:10 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 00:10 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 00:10 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 00:10 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/24/17 00:10 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/24/17 00:10 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/24/17 00:10* | *1* |
| *Dibromofluoromethane* | *95* | | *83 - 123* | | *04/24/17 00:10* | *1* |
| *Toluene-d8 (Surr)* | *93* | | *78 - 126* | | *04/24/17 00:10* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Trichloroethene** | **99** | | 5.0 | 3.1 | ug/L | | | 04/23/17 22:53 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/23/17 22:53* | *5* |
| *Dibromofluoromethane* | *97* | | *83 - 123* | | *04/23/17 22:53* | *5* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/23/17 22:53* | *5* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-702U

**Date Collected: 04/12/17 09:40**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80121-14

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/23/17 20:57 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 20:57 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 20:57 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/23/17 20:57 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 20:57 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 20:57 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/23/17 20:57 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/23/17 20:57 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/23/17 20:57 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/23/17 20:57 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/23/17 20:57 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/23/17 20:57 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/23/17 20:57 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 20:57 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 20:57 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/23/17 20:57 | 1 |
| **cis-1,2-Dichloroethylene** | **11** | | 1.0 | 0.65 | ug/L | | | 04/23/17 20:57 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/23/17 20:57 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/23/17 20:57 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 20:57 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/23/17 20:57 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/23/17 20:57 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/23/17 20:57 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 20:57 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/23/17 20:57 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/23/17 20:57 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 20:57 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 20:57 | 1 |
| **Trichloroethene** | **11** | | 1.0 | 0.61 | ug/L | | | 04/23/17 20:57 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 20:57 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/23/17 20:57 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/23/17 20:57 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 119* | | *04/23/17 20:57* | *1* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/23/17 20:57* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/23/17 20:57* | *1* |

## Client Sample ID: GZ-506R

**Date Collected: 04/12/17 07:30**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80121-15

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/23/17 21:17 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 21:17 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 21:17 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/23/17 21:17 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 21:17 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 21:17 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/23/17 21:17 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/23/17 21:17 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/23/17 21:17 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/23/17 21:17 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/23/17 21:17 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/23/17 21:17 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/23/17 21:17 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 21:17 | 1 |
| **1,1-Dichloroethane** | **0.79** | **J** | 1.0 | 0.52 | ug/L | | | 04/23/17 21:17 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/23/17 21:17 | 1 |
| **cis-1,2-Dichloroethylene** | **22** | | 1.0 | 0.65 | ug/L | | | 04/23/17 21:17 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/23/17 21:17 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/23/17 21:17 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 21:17 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/23/17 21:17 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/23/17 21:17 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/23/17 21:17 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 21:17 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/23/17 21:17 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/23/17 21:17 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 21:17 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 21:17 | 1 |
| **Trichloroethene** | **11** | | 1.0 | 0.61 | ug/L | | | 04/23/17 21:17 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 21:17 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/23/17 21:17 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/23/17 21:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/23/17 21:17* | *1* |
| *Dibromofluoromethane* | *97* | | *83 - 123* | | *04/23/17 21:17* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/23/17 21:17* | *1* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethane | <1.1 | | 1.1 | 0.55 | ug/L | | | 04/24/17 16:04 | 1 |
| Ethylene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 16:04 | 1 |
| **Methane** | **8.4** | | 0.58 | 0.29 | ug/L | | | 04/24/17 16:04 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Dissolved Iron** | **410** | | 200 | 50 | ug/L | | 04/18/17 14:09 | 04/19/17 10:14 | 1 |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-506R

**Date Collected: 04/12/17 07:30**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80121-15

**Matrix: Water**

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 0.80 | J | 1.0 | 0.50 | mg/L | | | 04/25/17 00:16 | 1 |

## Client Sample ID: OW-304L

**Lab Sample ID: 660-80121-16**

**Date Collected: 04/12/17 08:20**

**Matrix: Water**

**Date Received: 04/13/17 09:35**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <2.0 | | 2.0 | 1.2 | ug/L | | | 04/24/17 00:48 | 2 |
| Bromoform | <2.0 | | 2.0 | 1.3 | ug/L | | | 04/24/17 00:48 | 2 |
| Bromomethane | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 00:48 | 2 |
| Carbon tetrachloride | <2.0 | | 2.0 | 0.86 | ug/L | | | 04/24/17 00:48 | 2 |
| Chlorobenzene | <2.0 | | 2.0 | 1.3 | ug/L | | | 04/24/17 00:48 | 2 |
| Chloroethane | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 00:48 | 2 |
| Chloroform | <2.0 | | 2.0 | 1.8 | ug/L | | | 04/24/17 00:48 | 2 |
| Chloromethane | <8.0 | | 8.0 | 2.0 | ug/L | | | 04/24/17 00:48 | 2 |
| Dibromochloromethane | <2.0 | | 2.0 | 0.62 | ug/L | | | 04/24/17 00:48 | 2 |
| Dibromomethane | <2.0 | | 2.0 | 0.92 | ug/L | | | 04/24/17 00:48 | 2 |
| 1,2-Dichlorobenzene | <2.0 | | 2.0 | 0.98 | ug/L | | | 04/24/17 00:48 | 2 |
| 1,3-Dichlorobenzene | <2.0 | | 2.0 | 1.3 | ug/L | | | 04/24/17 00:48 | 2 |
| 1,4-Dichlorobenzene | <2.0 | | 2.0 | 1.2 | ug/L | | | 04/24/17 00:48 | 2 |
| Dichlorodifluoromethane | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 00:48 | 2 |
| **1,1-Dichloroethane** | **3.9** | | 2.0 | 1.0 | ug/L | | | 04/24/17 00:48 | 2 |
| 1,2-Dichloroethane | <2.0 | | 2.0 | 1.1 | ug/L | | | 04/24/17 00:48 | 2 |
| **trans-1,2-Dichloroethene** | **1.5** | **J** | 2.0 | 1.3 | ug/L | | | 04/24/17 00:48 | 2 |
| 1,1-Dichloroethene | <2.0 | | 2.0 | 1.3 | ug/L | | | 04/24/17 00:48 | 2 |
| 1,2-Dichloropropane | <2.0 | | 2.0 | 1.0 | ug/L | | | 04/24/17 00:48 | 2 |
| cis-1,3-Dichloropropene | <2.0 | | 2.0 | 0.78 | ug/L | | | 04/24/17 00:48 | 2 |
| trans-1,3-Dichloropropene | <2.0 | | 2.0 | 0.54 | ug/L | | | 04/24/17 00:48 | 2 |
| Methylene Chloride | <20 | | 20 | 10 | ug/L | | | 04/24/17 00:48 | 2 |
| 1,1,1,2-Tetrachloroethane | <2.0 | | 2.0 | 1.3 | ug/L | | | 04/24/17 00:48 | 2 |
| 1,1,2,2-Tetrachloroethane | <2.0 | | 2.0 | 0.34 | ug/L | | | 04/24/17 00:48 | 2 |
| Tetrachloroethene | <2.0 | | 2.0 | 1.0 | ug/L | | | 04/24/17 00:48 | 2 |
| 1,1,1-Trichloroethane | <2.0 | | 2.0 | 0.94 | ug/L | | | 04/24/17 00:48 | 2 |
| 1,1,2-Trichloroethane | <2.0 | | 2.0 | 0.94 | ug/L | | | 04/24/17 00:48 | 2 |
| Trichlorofluoromethane | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 00:48 | 2 |
| 1,2,3-Trichloropropane | <2.0 | | 2.0 | 0.88 | ug/L | | | 04/24/17 00:48 | 2 |
| **Vinyl chloride** | **13** | | 2.0 | 1.4 | ug/L | | | 04/24/17 00:48 | 2 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/24/17 00:48* | *2* |
| *Dibromofluoromethane* | *91* | | *83 - 123* | | *04/24/17 00:48* | *2* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/24/17 00:48* | *2* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **cis-1,2-Dichloroethylene** | **250** | | 20 | 13 | ug/L | | | 04/23/17 23:12 | 20 |
| **Trichloroethene** | **530** | | 20 | 12 | ug/L | | | 04/23/17 23:12 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | | *70 - 119* | | *04/23/17 23:12* | *20* |
| *Dibromofluoromethane* | *96* | | *83 - 123* | | *04/23/17 23:12* | *20* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/23/17 23:12* | *20* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethane | <1.1 | | 1.1 | 0.55 | ug/L | | | 04/24/17 16:17 | 1 |
| Ethylene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 16:17 | 1 |

## Client Sample ID: OW-304L

**Date Collected: 04/12/17 08:20**
**Date Received: 04/13/17 09:35**

## Lab Sample ID: 660-80121-16

**Matrix: Water**

### Method: RSK-175 - Dissolved Gases (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 19 | | 0.58 | 0.29 | ug/L | | | 04/24/17 16:17 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | 59 | J | 200 | 50 | ug/L | | 04/18/17 14:09 | 04/19/17 10:17 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 2.6 | | 1.0 | 0.50 | mg/L | | | 04/25/17 01:04 | 1 |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: Trip Blank

**Lab Sample ID: 660-80146-2**

**Date Collected: 04/13/17 06:30**
**Matrix: Water**
**Date Received: 04/14/17 10:40**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/24/17 12:38 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 12:38 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 12:38 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/24/17 12:38 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 12:38 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 12:38 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/24/17 12:38 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/24/17 12:38 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/24/17 12:38 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/24/17 12:38 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/24/17 12:38 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/24/17 12:38 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/24/17 12:38 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 12:38 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 12:38 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/24/17 12:38 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/24/17 12:38 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 12:38 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 12:38 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 12:38 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/24/17 12:38 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/24/17 12:38 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 12:38 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 12:38 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/24/17 12:38 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 12:38 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 12:38 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 12:38 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/24/17 12:38 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 12:38 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/24/17 12:38 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/24/17 12:38 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/24/17 12:38* | *1* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/24/17 12:38* | *1* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/24/17 12:38* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: Field Blank

**Lab Sample ID: 660-80146-3**

**Date Collected: 04/13/17 06:25**
**Matrix: Water**
**Date Received: 04/14/17 10:40**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/24/17 13:16 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 13:16 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 13:16 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/24/17 13:16 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 13:16 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 13:16 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/24/17 13:16 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/24/17 13:16 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/24/17 13:16 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/24/17 13:16 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/24/17 13:16 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/24/17 13:16 | 1 |
| **1,4-Dichlorobenzene** | **1.3** | | 1.0 | 0.60 | ug/L | | | 04/24/17 13:16 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 13:16 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 13:16 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/24/17 13:16 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/24/17 13:16 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 13:16 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 13:16 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 13:16 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/24/17 13:16 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/24/17 13:16 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 13:16 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 13:16 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/24/17 13:16 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 13:16 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 13:16 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 13:16 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/24/17 13:16 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 13:16 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/24/17 13:16 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/24/17 13:16 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 119* | | *04/24/17 13:16* | *1* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/24/17 13:16* | *1* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/24/17 13:16* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: Purge Water 4.13.17

**Lab Sample ID: 660-80146-4**

**Date Collected: 04/13/17 12:25**
**Matrix: Water**
**Date Received: 04/14/17 10:40**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/24/17 13:36 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 13:36 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 13:36 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/24/17 13:36 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 13:36 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 13:36 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/24/17 13:36 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/24/17 13:36 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/24/17 13:36 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/24/17 13:36 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/24/17 13:36 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/24/17 13:36 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/24/17 13:36 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 13:36 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 13:36 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/24/17 13:36 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/24/17 13:36 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 13:36 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 13:36 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 13:36 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/24/17 13:36 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/24/17 13:36 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 13:36 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 13:36 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/24/17 13:36 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 13:36 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 13:36 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 13:36 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/24/17 13:36 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 13:36 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/24/17 13:36 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/24/17 13:36 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/24/17 13:36* | *1* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/24/17 13:36* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/24/17 13:36* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: IW-3

**Date Collected: 04/13/17 09:50**
**Date Received: 04/14/17 10:40**

## Lab Sample ID: 660-80146-5

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/24/17 14:14 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 14:14 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 14:14 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/24/17 14:14 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 14:14 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 14:14 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/24/17 14:14 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/24/17 14:14 | 1 |
| Dibromochloromethane | <1.0 | F1 | 1.0 | 0.31 | ug/L | | | 04/24/17 14:14 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/24/17 14:14 | 1 |
| 1,2-Dichlorobenzene | <1.0 | F1 | 1.0 | 0.49 | ug/L | | | 04/24/17 14:14 | 1 |
| 1,3-Dichlorobenzene | <1.0 | F1 | 1.0 | 0.64 | ug/L | | | 04/24/17 14:14 | 1 |
| 1,4-Dichlorobenzene | <1.0 | F1 | 1.0 | 0.60 | ug/L | | | 04/24/17 14:14 | 1 |
| Dichlorodifluoromethane | <5.0 | F1 | 5.0 | 2.5 | ug/L | | | 04/24/17 14:14 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 14:14 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/24/17 14:14 | 1 |
| **cis-1,2-Dichloroethylene** | **4.7** | | 1.0 | 0.65 | ug/L | | | 04/24/17 14:14 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 14:14 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 14:14 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 14:14 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/24/17 14:14 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/24/17 14:14 | 1 |
| **Methylene Chloride** | **9.6** | **J** | 10 | 5.0 | ug/L | | | 04/24/17 14:14 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 14:14 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/24/17 14:14 | 1 |
| Tetrachloroethene | <1.0 | F1 | 1.0 | 0.50 | ug/L | | | 04/24/17 14:14 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 14:14 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 14:14 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/24/17 14:14 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 14:14 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/24/17 14:14 | 1 |
| **Vinyl chloride** | **1.5** | | 1.0 | 0.71 | ug/L | | | 04/24/17 14:14 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/24/17 14:14* | *1* |
| *Dibromofluoromethane* | *92* | | *83 - 123* | | *04/24/17 14:14* | *1* |
| *Toluene-d8 (Surr)* | *93* | | *78 - 126* | | *04/24/17 14:14* | *1* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Ethane** | **5.2** | | 1.1 | 0.55 | ug/L | | | 04/24/17 16:30 | 1 |
| Ethylene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 16:30 | 1 |
| **Methane (TCD)** | **1600** | | 390 | 39 | ug/L | | | 04/24/17 16:30 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Dissolved Iron** | **81000** | | 200 | 50 | ug/L | | 04/24/17 13:20 | 04/25/17 14:29 | 1 |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: IW-3

**Date Collected: 04/13/17 09:50**
**Date Received: 04/14/17 10:40**

## Lab Sample ID: 660-80146-5

**Matrix: Water**

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 3800 | | 40 | 20 | mg/L | | | 04/25/17 01:30 | 40 |

## Client Sample ID: WB-4L

**Date Collected: 04/13/17 08:25**
**Date Received: 04/14/17 10:40**

## Lab Sample ID: 660-80146-6

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/24/17 18:49 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 18:49 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 18:49 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/24/17 18:49 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 18:49 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 18:49 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/24/17 18:49 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/24/17 18:49 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/24/17 18:49 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/24/17 18:49 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/24/17 18:49 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/24/17 18:49 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/24/17 18:49 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 18:49 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 18:49 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/24/17 18:49 | 1 |
| **cis-1,2-Dichloroethylene** | **53** | | 1.0 | 0.65 | ug/L | | | 04/24/17 18:49 | 1 |
| **trans-1,2-Dichloroethene** | **0.71** | **J** | 1.0 | 0.67 | ug/L | | | 04/24/17 18:49 | 1 |
| **1,1-Dichloroethene** | **1.1** | | 1.0 | 0.67 | ug/L | | | 04/24/17 18:49 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 18:49 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/24/17 18:49 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/24/17 18:49 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 18:49 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 18:49 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/24/17 18:49 | 1 |
| **Tetrachloroethene** | **1.9** | | 1.0 | 0.50 | ug/L | | | 04/24/17 18:49 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 18:49 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 18:49 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 18:49 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/24/17 18:49 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/24/17 18:49 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *94* | | *70 - 119* | | *04/24/17 18:49* | *1* |
| *Dibromofluoromethane* | *93* | | *83 - 123* | | *04/24/17 18:49* | *1* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* | | *04/24/17 18:49* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Trichloroethene** | **120** | | 5.0 | 3.1 | ug/L | | | 04/25/17 16:30 | 5 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | | *70 - 119* | | *04/25/17 16:30* | *5* |
| *Dibromofluoromethane* | *104* | | *83 - 123* | | *04/25/17 16:30* | *5* |
| *Toluene-d8 (Surr)* | *100* | | *78 - 126* | | *04/25/17 16:30* | *5* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethane | <1.1 | | 1.1 | 0.55 | ug/L | | | 04/24/17 16:43 | 1 |
| Ethylene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 16:43 | 1 |

## Client Sample ID: WB-4L

**Date Collected: 04/13/17 08:25**
**Date Received: 04/14/17 10:40**

## Lab Sample ID: 660-80146-6

**Matrix: Water**

### Method: RSK-175 - Dissolved Gases (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 2.2 | | 0.58 | 0.29 | ug/L | | | 04/24/17 16:43 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | <200 | | 200 | 50 | ug/L | | 04/24/17 13:20 | 04/25/17 14:42 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1.1 | | 1.0 | 0.50 | mg/L | | | 04/25/17 02:47 | 1 |

## Client Sample ID: IW-2

**Lab Sample ID: 660-80146-7**

**Date Collected: 04/13/17 09:20**

**Matrix: Water**

**Date Received: 04/14/17 10:40**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/24/17 15:31 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 15:31 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 15:31 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/24/17 15:31 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 15:31 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 15:31 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/24/17 15:31 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/24/17 15:31 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/24/17 15:31 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/24/17 15:31 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/24/17 15:31 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/24/17 15:31 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/24/17 15:31 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 15:31 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 15:31 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/24/17 15:31 | 1 |
| **cis-1,2-Dichloroethylene** | **11** | | 1.0 | 0.65 | ug/L | | | 04/24/17 15:31 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 15:31 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 15:31 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 15:31 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/24/17 15:31 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/24/17 15:31 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 15:31 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 15:31 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/24/17 15:31 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 15:31 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 15:31 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 15:31 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/24/17 15:31 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 15:31 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/24/17 15:31 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/24/17 15:31 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 119* | | *04/24/17 15:31* | *1* |
| *Dibromofluoromethane* | *91* | | *83 - 123* | | *04/24/17 15:31* | *1* |
| *Toluene-d8 (Surr)* | *91* | | *78 - 126* | | *04/24/17 15:31* | *1* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Ethane** | **0.73** | **J** | 1.1 | 0.55 | ug/L | | | 04/24/17 16:56 | 1 |
| **Ethylene** | **1.7** | | 1.0 | 0.50 | ug/L | | | 04/24/17 16:56 | 1 |
| **Methane (TCD)** | **4600** | | 390 | 39 | ug/L | | | 04/24/17 16:56 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Dissolved Iron** | **180000** | | 200 | 50 | ug/L | | 04/24/17 13:20 | 04/25/17 14:45 | 1 |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: IW-2

**Date Collected: 04/13/17 09:20**
**Date Received: 04/14/17 10:40**

## Lab Sample ID: 660-80146-7

**Matrix: Water**

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 4000 | | 100 | 50 | mg/L | | | 04/26/17 17:49 | 100 |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: IW-1

**Date Collected: 04/13/17 08:05**
**Date Received: 04/14/17 10:40**

## Lab Sample ID: 660-80146-8

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/24/17 19:27 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 19:27 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 19:27 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/24/17 19:27 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 19:27 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 19:27 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/24/17 19:27 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/24/17 19:27 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/24/17 19:27 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/24/17 19:27 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/24/17 19:27 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/24/17 19:27 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/24/17 19:27 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 19:27 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 19:27 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/24/17 19:27 | 1 |
| **trans-1,2-Dichloroethene** | **35** | | 1.0 | 0.67 | ug/L | | | 04/24/17 19:27 | 1 |
| **1,1-Dichloroethene** | **3.1** | | 1.0 | 0.67 | ug/L | | | 04/24/17 19:27 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 19:27 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/24/17 19:27 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/24/17 19:27 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 19:27 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 19:27 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/24/17 19:27 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 19:27 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 19:27 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 19:27 | 1 |
| **Trichloroethene** | **46** | | 1.0 | 0.61 | ug/L | | | 04/24/17 19:27 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 19:27 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/24/17 19:27 | 1 |
| **Vinyl chloride** | **14** | | 1.0 | 0.71 | ug/L | | | 04/24/17 19:27 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/24/17 19:27* | *1* |
| *Dibromofluoromethane* | *93* | | *83 - 123* | | *04/24/17 19:27* | *1* |
| *Toluene-d8 (Surr)* | *93* | | *78 - 126* | | *04/24/17 19:27* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **cis-1,2-Dichloroethylene** | **480** | | 10 | 6.5 | ug/L | | | 04/24/17 19:08 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 119* | | *04/24/17 19:08* | *10* |
| *Dibromofluoromethane* | *96* | | *83 - 123* | | *04/24/17 19:08* | *10* |
| *Toluene-d8 (Surr)* | *96* | | *78 - 126* | | *04/24/17 19:08* | *10* |

### Method: RSK-175 - Dissolved Gases (GC)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethane | <1.1 | | 1.1 | 0.55 | ug/L | | | 04/24/17 17:09 | 1 |
| Ethylene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 17:09 | 1 |

## Client Sample ID: IW-1

**Date Collected: 04/13/17 08:05**
**Date Received: 04/14/17 10:40**

## Lab Sample ID: 660-80146-8

**Matrix: Water**

### Method: RSK-175 - Dissolved Gases (GC) (Continued)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Methane (TCD) | 3900 | | 390 | 39 | ug/L | | | 04/24/17 17:09 | 1 |

### Method: 6010B - Metals (ICP) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | 130000 | | 200 | 50 | ug/L | | 04/24/17 13:20 | 04/25/17 14:48 | 1 |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 4100 | | 100 | 50 | mg/L | | | 04/26/17 18:05 | 100 |

# Default Detection Limits

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | RL | MDL | Units | Method |
|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 1.0 | 0.63 | ug/L | 8260B |
| 1,1,1-Trichloroethane | 1.0 | 0.47 | ug/L | 8260B |
| 1,1,2,2-Tetrachloroethane | 1.0 | 0.17 | ug/L | 8260B |
| 1,1,2-Trichloroethane | 1.0 | 0.47 | ug/L | 8260B |
| 1,1-Dichloroethane | 1.0 | 0.52 | ug/L | 8260B |
| 1,1-Dichloroethene | 1.0 | 0.67 | ug/L | 8260B |
| 1,2,3-Trichloropropane | 1.0 | 0.44 | ug/L | 8260B |
| 1,2-Dichlorobenzene | 1.0 | 0.49 | ug/L | 8260B |
| 1,2-Dichloroethane | 1.0 | 0.57 | ug/L | 8260B |
| 1,2-Dichloropropane | 1.0 | 0.52 | ug/L | 8260B |
| 1,3-Dichlorobenzene | 1.0 | 0.64 | ug/L | 8260B |
| 1,4-Dichlorobenzene | 1.0 | 0.60 | ug/L | 8260B |
| Bromobenzene | 1.0 | 0.58 | ug/L | 8260B |
| Bromoform | 1.0 | 0.63 | ug/L | 8260B |
| Bromomethane | 5.0 | 2.5 | ug/L | 8260B |
| Carbon tetrachloride | 1.0 | 0.43 | ug/L | 8260B |
| Chlorobenzene | 1.0 | 0.63 | ug/L | 8260B |
| Chloroethane | 5.0 | 2.5 | ug/L | 8260B |
| Chloroform | 1.0 | 0.90 | ug/L | 8260B |
| Chloromethane | 4.0 | 1.0 | ug/L | 8260B |
| cis-1,2-Dichloroethylene | 1.0 | 0.65 | ug/L | 8260B |
| cis-1,3-Dichloropropene | 1.0 | 0.39 | ug/L | 8260B |
| Dibromochloromethane | 1.0 | 0.31 | ug/L | 8260B |
| Dibromomethane | 1.0 | 0.46 | ug/L | 8260B |
| Dichlorodifluoromethane | 5.0 | 2.5 | ug/L | 8260B |
| Methylene Chloride | 10 | 5.0 | ug/L | 8260B |
| Tetrachloroethene | 1.0 | 0.50 | ug/L | 8260B |
| trans-1,2-Dichloroethene | 1.0 | 0.67 | ug/L | 8260B |
| trans-1,3-Dichloropropene | 1.0 | 0.27 | ug/L | 8260B |
| Trichloroethene | 1.0 | 0.61 | ug/L | 8260B |
| Trichlorofluoromethane | 5.0 | 2.5 | ug/L | 8260B |
| Vinyl chloride | 1.0 | 0.71 | ug/L | 8260B |

## Method: RSK-175 - Dissolved Gases (GC)

| Analyte | RL | MDL | Units | Method |
|---|---|---|---|---|
| Ethane | 1.1 | 0.55 | ug/L | RSK-175 |
| Ethylene | 1.0 | 0.50 | ug/L | RSK-175 |
| Methane | 0.58 | 0.29 | ug/L | RSK-175 |
| Methane (TCD) | 390 | 39 | ug/L | RSK-175 |

## Method: 6010B - Metals (ICP) - Dissolved

### Prep: 3005A

| Analyte | RL | MDL | Units | Method |
|---|---|---|---|---|
| Dissolved Iron | 200 | 50 | ug/L | 6010B |

## General Chemistry

| Analyte | RL | MDL | Units | Method |
|---|---|---|---|---|
| Total Organic Carbon | 1.0 | 0.50 | mg/L | 5310 B-2011 |

# Surrogate Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Matrix: Water** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| Lab Sample ID | Client Sample ID | BFB (70-119) | DBFM (83-123) | TOL (78-126) |
| 660-80084-1 | Trip Blank | 94 | 100 | 95 |
| 660-80084-2 | Field Blank | 94 | 99 | 96 |
| 660-80084-3 - DL | OW-404R | 94 | 96 | 97 |
| 660-80084-3 | OW-404R | 95 | 94 | 97 |
| 660-80084-4 | OW-404U | 95 | 98 | 96 |
| 660-80084-5 | WB-2L | 95 | 96 | 97 |
| 660-80084-6 | WB-1U | 96 | 96 | 97 |
| 660-80084-7 | GZ-504L | 96 | 98 | 98 |
| 660-80084-8 | WB-1L | 93 | 95 | 97 |
| 660-80084-8 - DL | WB-1L | 95 | 98 | 96 |
| 660-80084-8 MS | WB-1L MS | 100 | 97 | 96 |
| 660-80084-8 MSD | WB-1L MSD | 98 | 98 | 98 |
| 660-80084-9 - DL | WB-1L DUP | 96 | 97 | 97 |
| 660-80084-9 | WB-1L DUP | 95 | 95 | 97 |
| 660-80084-10 | GZ-504R | 96 | 97 | 96 |
| 660-80084-11 | GZ-501L | 94 | 97 | 97 |
| 660-80084-12 | OW-101L | 95 | 97 | 96 |
| 660-80084-13 | GZ-503L | 95 | 95 | 97 |
| 660-80120-2 | Trip Blank | 93 | 99 | 93 |
| 660-80120-3 - DL | GZ-519U | 93 | 98 | 95 |
| 660-80120-3 | GZ-519U | 93 | 95 | 94 |
| 660-80120-4 - DL | OW-101 | 95 | 97 | 95 |
| 660-80120-4 | OW-101 | 95 | 93 | 95 |
| 660-80120-5 - DL | GZ-505R | 93 | 95 | 94 |
| 660-80120-5 | GZ-505R | 94 | 93 | 94 |
| 660-80120-6 - DL | OW-307 | 94 | 93 | 95 |
| 660-80120-6 | OW-307 | 98 | 94 | 95 |
| 660-80120-7 | WB-3L | 93 | 96 | 95 |
| 660-80120-7 MS | WB-3L MS | 99 | 94 | 94 |
| 660-80120-7 MSD | WB-3L MSD | 98 | 95 | 95 |
| 660-80120-8 | WB-3L DUP | 95 | 95 | 95 |
| 660-80120-9 | WB-2U | 94 | 98 | 93 |
| 660-80121-2 | Trip Blank | 97 | 99 | 93 |
| 660-80121-3 | Field Blank | 95 | 99 | 94 |
| 660-80121-4 - DL | OW-304R | 95 | 96 | 93 |
| 660-80121-4 | OW-304R | 96 | 93 | 95 |
| 660-80121-5 | Equipment Blank 1 | 93 | 97 | 92 |
| 660-80121-6 | GZ-701L | 95 | 101 | 95 |
| 660-80121-7 | Equipment Blank 2 | 96 | 98 | 94 |
| 660-80121-8 | GZ-702R | 95 | 96 | 95 |
| 660-80121-9 | GZ-601R | 95 | 96 | 94 |
| 660-80121-9 DU | GZ-601R | 93 | 96 | 96 |
| 660-80121-10 - DL | GZ-505R DUP | 96 | 97 | 94 |
| 660-80121-10 | GZ-505R DUP | 94 | 93 | 95 |
| 660-80121-11 | GZ-701R | 93 | 99 | 94 |
| 660-80121-11 MS | GZ-701R | 97 | 96 | 96 |
| 660-80121-12 - DL | GZ-703R DUP | 95 | 98 | 95 |
| 660-80121-12 | GZ-703R DUP | 95 | 95 | 94 |
| 660-80121-13 - DL | GZ-703R | 94 | 97 | 95 |

# Surrogate Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Matrix: Water** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| | | BFB | DBFM | TOL |
| Lab Sample ID | Client Sample ID | (70-119) | (83-123) | (78-126) |
| 660-80121-13 | GZ-703R | 95 | 95 | 93 |
| 660-80121-14 | GZ-702U | 93 | 98 | 95 |
| 660-80121-15 | GZ-506R | 94 | 97 | 95 |
| 660-80121-16 - DL | OW-304L | 97 | 96 | 95 |
| 660-80121-16 | OW-304L | 95 | 91 | 95 |
| 660-80146-2 | Trip Blank | 94 | 98 | 94 |
| 660-80146-3 | Field Blank | 96 | 98 | 94 |
| 660-80146-4 | Purge Water 4.13.17 | 94 | 98 | 95 |
| 660-80146-4 DU | Purge Water 4.13.17 | 95 | 98 | 94 |
| 660-80146-5 | IW-3 | 94 | 92 | 93 |
| 660-80146-5 MS | IW-3 | 100 | 91 | 92 |
| 660-80146-6 | WB-4L | 94 | 93 | 95 |
| 660-80146-6 - DL | WB-4L | 97 | 104 | 100 |
| 660-80146-7 | IW-2 | 96 | 91 | 91 |
| 660-80146-8 - DL | IW-1 | 96 | 96 | 96 |
| 660-80146-8 | IW-1 | 95 | 93 | 93 |
| LCS 660-181808/4 | Lab Control Sample | 96 | 99 | 96 |
| LCS 660-182028/5 | Lab Control Sample | 99 | 97 | 94 |
| LCS 660-182037/4 | Lab Control Sample | 97 | 98 | 94 |
| LCS 660-182052/4 | Lab Control Sample | 97 | 97 | 93 |
| LCS 660-182102/4 | Lab Control Sample | 98 | 105 | 107 |
| LCSD 660-182028/6 | Lab Control Sample Dup | 100 | 98 | 95 |
| LCSD 660-182037/5 | Lab Control Sample Dup | 98 | 97 | 94 |
| LCSD 660-182052/5 | Lab Control Sample Dup | 98 | 95 | 95 |
| LCSD 660-182102/5 | Lab Control Sample Dup | 101 | 101 | 102 |
| MB 660-181808/6 | Method Blank | 96 | 97 | 96 |
| MB 660-182028/8 | Method Blank | 95 | 99 | 93 |
| MB 660-182037/7 | Method Blank | 95 | 98 | 94 |
| MB 660-182052/7 | Method Blank | 97 | 98 | 94 |
| MB 660-182102/7 | Method Blank | 104 | 104 | 103 |

**Surrogate Legend**

BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 660-181808/6**
**Matrix: Water**
**Analysis Batch: 181808**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/17/17 13:02 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 13:02 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 13:02 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/17/17 13:02 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 13:02 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 13:02 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/17/17 13:02 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/17/17 13:02 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/17/17 13:02 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/17/17 13:02 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/17/17 13:02 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/17/17 13:02 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/17/17 13:02 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 13:02 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 13:02 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/17/17 13:02 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/17/17 13:02 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 13:02 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/17/17 13:02 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/17/17 13:02 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/17/17 13:02 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/17/17 13:02 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/17/17 13:02 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/17/17 13:02 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/17/17 13:02 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/17/17 13:02 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 13:02 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/17/17 13:02 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/17/17 13:02 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/17/17 13:02 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/17/17 13:02 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/17/17 13:02 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 119* | | *04/17/17 13:02* | *1* |
| *Dibromofluoromethane* | *97* | | *83 - 123* | | *04/17/17 13:02* | *1* |
| *Toluene-d8 (Surr)* | *96* | | *78 - 126* | | *04/17/17 13:02* | *1* |

**Lab Sample ID: LCS 660-181808/4**
**Matrix: Water**
**Analysis Batch: 181808**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromobenzene | 10.0 | 10.9 | | ug/L | | 109 | 58 - 151 |
| Bromoform | 10.0 | 9.33 | | ug/L | | 93 | 62 - 140 |
| Bromomethane | 10.0 | 6.62 | | ug/L | | 66 | 22 - 179 |
| Carbon tetrachloride | 10.0 | 10.0 | | ug/L | | 100 | 53 - 134 |
| Chlorobenzene | 10.0 | 11.0 | | ug/L | | 110 | 63 - 132 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 660-181808/4**
**Matrix: Water**
**Analysis Batch: 181808**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Chloroethane | 10.0 | 10.5 | | ug/L | | 105 | 53 - 144 |
| Chloroform | 10.0 | 10.7 | | ug/L | | 107 | 60 - 126 |
| Chloromethane | 10.0 | 10.9 | | ug/L | | 109 | 62 - 130 |
| Dibromochloromethane | 10.0 | 8.29 | | ug/L | | 83 | 55 - 134 |
| Dibromomethane | 10.0 | 10.4 | | ug/L | | 104 | 62 - 141 |
| 1,2-Dichlorobenzene | 10.0 | 11.6 | | ug/L | | 116 | 60 - 154 |
| 1,3-Dichlorobenzene | 10.0 | 11.3 | | ug/L | | 113 | 55 - 147 |
| 1,4-Dichlorobenzene | 10.0 | 11.2 | | ug/L | | 112 | 58 - 151 |
| Dichlorodifluoromethane | 10.0 | 9.71 | | ug/L | | 97 | 28 - 133 |
| 1,1-Dichloroethane | 10.0 | 10.9 | | ug/L | | 109 | 54 - 132 |
| 1,2-Dichloroethane | 10.0 | 10.2 | | ug/L | | 102 | 51 - 167 |
| cis-1,2-Dichloroethylene | 10.0 | 10.9 | | ug/L | | 109 | 49 - 127 |
| trans-1,2-Dichloroethene | 10.0 | 12.4 | | ug/L | | 124 | 46 - 125 |
| 1,1-Dichloroethene | 10.0 | 11.6 | | ug/L | | 116 | 43 - 118 |
| 1,2-Dichloropropane | 10.0 | 10.5 | | ug/L | | 105 | 60 - 138 |
| cis-1,3-Dichloropropene | 10.0 | 9.07 | | ug/L | | 91 | 49 - 141 |
| trans-1,3-Dichloropropene | 10.0 | 8.13 | | ug/L | | 81 | 52 - 140 |
| Methylene Chloride | 10.0 | 12.1 | | ug/L | | 121 | 52 - 132 |
| 1,1,1,2-Tetrachloroethane | 10.0 | 9.91 | | ug/L | | 99 | 60 - 134 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 9.38 | | ug/L | | 94 | 63 - 148 |
| Tetrachloroethene | 10.0 | 10.7 | | ug/L | | 107 | 48 - 136 |
| 1,1,1-Trichloroethane | 10.0 | 10.8 | | ug/L | | 108 | 58 - 136 |
| 1,1,2-Trichloroethane | 10.0 | 10.5 | | ug/L | | 105 | 60 - 140 |
| Trichloroethene | 10.0 | 11.0 | | ug/L | | 110 | 59 - 129 |
| Trichlorofluoromethane | 10.0 | 11.1 | | ug/L | | 111 | 62 - 138 |
| 1,2,3-Trichloropropane | 10.0 | 10.2 | | ug/L | | 102 | 51 - 171 |
| Vinyl chloride | 10.0 | 9.92 | | ug/L | | 99 | 66 - 121 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *96* | | *70 - 119* |
| *Dibromofluoromethane* | *99* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *96* | | *78 - 126* |

**Lab Sample ID: 660-80084-8 MS**
**Matrix: Water**
**Analysis Batch: 181808**

**Client Sample ID: WB-1L MS**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 10.0 | 11.6 | | ug/L | | 116 | 70 - 139 |
| Bromoform | <1.0 | | 10.0 | 9.09 | | ug/L | | 91 | 49 - 150 |
| Bromomethane | <5.0 | | 10.0 | 8.02 | | ug/L | | 80 | 23 - 140 |
| Carbon tetrachloride | <1.0 | | 10.0 | 10.8 | | ug/L | | 108 | 50 - 162 |
| Chlorobenzene | <1.0 | F1 | 10.0 | 11.9 | | ug/L | | 119 | 70 - 125 |
| Chloroethane | <5.0 | | 10.0 | 11.2 | | ug/L | | 112 | 43 - 165 |
| Chloroform | <1.0 | | 10.0 | 11.3 | | ug/L | | 113 | 70 - 124 |
| Chloromethane | <4.0 | | 10.0 | 11.6 | | ug/L | | 116 | 56 - 137 |
| Dibromochloromethane | <1.0 | | 10.0 | 8.01 | | ug/L | | 80 | 58 - 131 |
| Dibromomethane | <1.0 | | 10.0 | 10.3 | | ug/L | | 103 | 63 - 131 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 660-80084-8 MS** — **Client Sample ID: WB-1L MS**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 181808**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | <1.0 | | 10.0 | 12.2 | | ug/L | | 122 | 70 - 142 |
| 1,3-Dichlorobenzene | <1.0 | | 10.0 | 12.2 | | ug/L | | 122 | 70 - 137 |
| 1,4-Dichlorobenzene | <1.0 | | 10.0 | 12.2 | | ug/L | | 122 | 70 - 137 |
| Dichlorodifluoromethane | <5.0 | F1 | 10.0 | <5.0 | F1 | ug/L | | 0 | 37 - 139 |
| 1,1-Dichloroethane | <1.0 | F1 | 10.0 | 12.3 | | ug/L | | 123 | 70 - 126 |
| 1,2-Dichloroethane | <1.0 | | 10.0 | 10.8 | | ug/L | | 108 | 65 - 150 |
| cis-1,2-Dichloroethylene | 150 | E | 10.0 | 145 | E 4 | ug/L | | -56 | 70 - 122 |
| trans-1,2-Dichloroethene | 2.9 | F1 | 10.0 | 15.7 | F1 | ug/L | | 128 | 64 - 127 |
| 1,1-Dichloroethene | 0.80 | J F1 | 10.0 | 13.3 | | ug/L | | 126 | 60 - 127 |
| 1,2-Dichloropropane | <1.0 | | 10.0 | 11.1 | | ug/L | | 111 | 66 - 135 |
| cis-1,3-Dichloropropene | <1.0 | | 10.0 | 9.25 | | ug/L | | 93 | 46 - 131 |
| trans-1,3-Dichloropropene | <1.0 | | 10.0 | 8.26 | | ug/L | | 83 | 40 - 137 |
| Methylene Chloride | <10 | | 10.0 | 11.1 | | ug/L | | 111 | 61 - 134 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 10.0 | 10.6 | | ug/L | | 106 | 59 - 140 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 10.0 | 10.0 | | ug/L | | 100 | 41 - 149 |
| Tetrachloroethene | <1.0 | | 10.0 | 11.6 | | ug/L | | 116 | 62 - 128 |
| 1,1,1-Trichloroethane | <1.0 | | 10.0 | 11.5 | | ug/L | | 115 | 61 - 152 |
| 1,1,2-Trichloroethane | <1.0 | | 10.0 | 11.3 | | ug/L | | 113 | 60 - 132 |
| Trichloroethene | 120 | E | 10.0 | 112 | E 4 | ug/L | | -87 | 70 - 131 |
| Trichlorofluoromethane | <5.0 | | 10.0 | 11.6 | | ug/L | | 116 | 60 - 157 |
| 1,2,3-Trichloropropane | <1.0 | | 10.0 | 10.1 | | ug/L | | 101 | 35 - 164 |
| Vinyl chloride | 2.7 | | 10.0 | 12.9 | | ug/L | | 102 | 63 - 126 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *100* | | *70 - 119* |
| *Dibromofluoromethane* | *97* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *96* | | *78 - 126* |

**Lab Sample ID: 660-80084-8 MSD** — **Client Sample ID: WB-1L MSD**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 181808**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 10.0 | 12.3 | | ug/L | | 123 | 70 - 139 | 6 | 19 |
| Bromoform | <1.0 | | 10.0 | 9.75 | | ug/L | | 98 | 49 - 150 | 7 | 20 |
| Bromomethane | <5.0 | | 10.0 | 7.50 | | ug/L | | 75 | 23 - 140 | 7 | 41 |
| Carbon tetrachloride | <1.0 | | 10.0 | 11.9 | | ug/L | | 119 | 50 - 162 | 10 | 28 |
| Chlorobenzene | <1.0 | F1 | 10.0 | 12.7 | F1 | ug/L | | 127 | 70 - 125 | 6 | 23 |
| Chloroethane | <5.0 | | 10.0 | 11.1 | | ug/L | | 111 | 43 - 165 | 0 | 45 |
| Chloroform | <1.0 | | 10.0 | 12.0 | | ug/L | | 120 | 70 - 124 | 6 | 21 |
| Chloromethane | <4.0 | | 10.0 | 12.3 | | ug/L | | 123 | 56 - 137 | 6 | 16 |
| Dibromochloromethane | <1.0 | | 10.0 | 8.07 | | ug/L | | 81 | 58 - 131 | 1 | 18 |
| Dibromomethane | <1.0 | | 10.0 | 11.4 | | ug/L | | 114 | 63 - 131 | 11 | 21 |
| 1,2-Dichlorobenzene | <1.0 | | 10.0 | 12.9 | | ug/L | | 129 | 70 - 142 | 6 | 24 |
| 1,3-Dichlorobenzene | <1.0 | | 10.0 | 12.9 | | ug/L | | 129 | 70 - 137 | 5 | 24 |
| 1,4-Dichlorobenzene | <1.0 | | 10.0 | 12.6 | | ug/L | | 126 | 70 - 137 | 3 | 25 |
| Dichlorodifluoromethane | <5.0 | F1 | 10.0 | <5.0 | F1 | ug/L | | 0 | 37 - 139 | NC | 31 |
| 1,1-Dichloroethane | <1.0 | F1 | 10.0 | 12.9 | F1 | ug/L | | 129 | 70 - 126 | 5 | 29 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 660-80084-8 MSD** — **Client Sample ID: WB-1L MSD**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 181808**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | <1.0 | | 10.0 | 11.3 | | ug/L | | 113 | 65 - 150 | 4 | 19 |
| cis-1,2-Dichloroethylene | 150 | E | 10.0 | 149 | E 4 | ug/L | | -14 | 70 - 122 | 3 | 22 |
| trans-1,2-Dichloroethene | 2.9 | F1 | 10.0 | 17.1 | F1 | ug/L | | 142 | 64 - 127 | 9 | 21 |
| 1,1-Dichloroethene | 0.80 | J F1 | 10.0 | 14.6 | F1 | ug/L | | 138 | 60 - 127 | 9 | 33 |
| 1,2-Dichloropropane | <1.0 | | 10.0 | 11.4 | | ug/L | | 114 | 66 - 135 | 2 | 22 |
| cis-1,3-Dichloropropene | <1.0 | | 10.0 | 9.87 | | ug/L | | 99 | 46 - 131 | 6 | 25 |
| trans-1,3-Dichloropropene | <1.0 | | 10.0 | 8.99 | | ug/L | | 90 | 40 - 137 | 8 | 25 |
| Methylene Chloride | <10 | | 10.0 | 11.7 | | ug/L | | 117 | 61 - 134 | 5 | 21 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 10.0 | 10.7 | | ug/L | | 107 | 59 - 140 | 1 | 22 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 10.0 | 10.6 | | ug/L | | 106 | 41 - 149 | 5 | 23 |
| Tetrachloroethene | <1.0 | | 10.0 | 12.3 | | ug/L | | 123 | 62 - 128 | 6 | 26 |
| 1,1,1-Trichloroethane | <1.0 | | 10.0 | 12.4 | | ug/L | | 124 | 61 - 152 | 7 | 21 |
| 1,1,2-Trichloroethane | <1.0 | | 10.0 | 11.8 | | ug/L | | 118 | 60 - 132 | 4 | 22 |
| Trichloroethene | 120 | E | 10.0 | 116 | E 4 | ug/L | | -45 | 70 - 131 | 4 | 28 |
| Trichlorofluoromethane | <5.0 | | 10.0 | 13.2 | | ug/L | | 132 | 60 - 157 | 12 | 20 |
| 1,2,3-Trichloropropane | <1.0 | | 10.0 | 10.8 | | ug/L | | 108 | 35 - 164 | 7 | 24 |
| Vinyl chloride | 2.7 | | 10.0 | 14.6 | | ug/L | | 119 | 63 - 126 | 12 | 23 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 119* |
| *Dibromofluoromethane* | *98* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *98* | | *78 - 126* |

**Lab Sample ID: MB 660-182028/8** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 182028**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/22/17 12:43 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 12:43 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 12:43 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/22/17 12:43 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 12:43 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 12:43 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/22/17 12:43 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/22/17 12:43 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/22/17 12:43 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/22/17 12:43 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/22/17 12:43 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/22/17 12:43 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/22/17 12:43 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 12:43 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 12:43 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/22/17 12:43 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/22/17 12:43 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 12:43 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/22/17 12:43 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/22/17 12:43 | 1 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 660-182028/8**
**Matrix: Water**
**Analysis Batch: 182028**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/22/17 12:43 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/22/17 12:43 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/22/17 12:43 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/22/17 12:43 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/22/17 12:43 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/22/17 12:43 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 12:43 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/22/17 12:43 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/22/17 12:43 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/22/17 12:43 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/22/17 12:43 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/22/17 12:43 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/22/17 12:43* | *1* |
| *Dibromofluoromethane* | *99* | | *83 - 123* | | *04/22/17 12:43* | *1* |
| *Toluene-d8 (Surr)* | *93* | | *78 - 126* | | *04/22/17 12:43* | *1* |

**Lab Sample ID: LCS 660-182028/5**
**Matrix: Water**
**Analysis Batch: 182028**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromobenzene | 10.0 | 10.9 | | ug/L | | 109 | 58 - 151 |
| Bromoform | 10.0 | 7.95 | | ug/L | | 79 | 62 - 140 |
| Bromomethane | 10.0 | 7.38 | | ug/L | | 74 | 22 - 179 |
| Carbon tetrachloride | 10.0 | 8.55 | | ug/L | | 85 | 53 - 134 |
| Chlorobenzene | 10.0 | 10.1 | | ug/L | | 101 | 63 - 132 |
| Chloroethane | 10.0 | 7.03 | | ug/L | | 70 | 53 - 144 |
| Chloroform | 10.0 | 9.61 | | ug/L | | 96 | 60 - 126 |
| Chloromethane | 10.0 | 9.84 | | ug/L | | 98 | 62 - 130 |
| Dibromochloromethane | 10.0 | 6.81 | | ug/L | | 68 | 55 - 134 |
| Dibromomethane | 10.0 | 9.15 | | ug/L | | 92 | 62 - 141 |
| 1,2-Dichlorobenzene | 10.0 | 11.3 | | ug/L | | 113 | 60 - 154 |
| 1,3-Dichlorobenzene | 10.0 | 10.9 | | ug/L | | 109 | 55 - 147 |
| 1,4-Dichlorobenzene | 10.0 | 10.8 | | ug/L | | 108 | 58 - 151 |
| Dichlorodifluoromethane | 10.0 | 8.09 | | ug/L | | 81 | 28 - 133 |
| 1,1-Dichloroethane | 10.0 | 9.64 | | ug/L | | 96 | 54 - 132 |
| 1,2-Dichloroethane | 10.0 | 8.97 | | ug/L | | 90 | 51 - 167 |
| cis-1,2-Dichloroethylene | 10.0 | 9.38 | | ug/L | | 94 | 49 - 127 |
| trans-1,2-Dichloroethene | 10.0 | 10.4 | | ug/L | | 104 | 46 - 125 |
| 1,1-Dichloroethene | 10.0 | 9.63 | | ug/L | | 96 | 43 - 118 |
| 1,2-Dichloropropane | 10.0 | 9.40 | | ug/L | | 94 | 60 - 138 |
| cis-1,3-Dichloropropene | 10.0 | 8.07 | | ug/L | | 81 | 49 - 141 |
| trans-1,3-Dichloropropene | 10.0 | 6.90 | | ug/L | | 69 | 52 - 140 |
| Methylene Chloride | 10.0 | 11.8 | | ug/L | | 118 | 52 - 132 |
| 1,1,1,2-Tetrachloroethane | 10.0 | 9.32 | | ug/L | | 93 | 60 - 134 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 8.83 | | ug/L | | 88 | 63 - 148 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 660-182028/5**
**Matrix: Water**
**Analysis Batch: 182028**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Tetrachloroethene | 10.0 | 9.34 | | ug/L | | 93 | 48 - 136 |
| 1,1,1-Trichloroethane | 10.0 | 9.01 | | ug/L | | 90 | 58 - 136 |
| 1,1,2-Trichloroethane | 10.0 | 9.10 | | ug/L | | 91 | 60 - 140 |
| Trichloroethene | 10.0 | 9.64 | | ug/L | | 96 | 59 - 129 |
| Trichlorofluoromethane | 10.0 | 9.52 | | ug/L | | 95 | 62 - 138 |
| 1,2,3-Trichloropropane | 10.0 | 8.63 | | ug/L | | 86 | 51 - 171 |
| Vinyl chloride | 10.0 | 8.94 | | ug/L | | 89 | 66 - 121 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | | *70 - 119* |
| *Dibromofluoromethane* | *97* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* |

**Lab Sample ID: LCSD 660-182028/6**
**Matrix: Water**
**Analysis Batch: 182028**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | 10.0 | 11.4 | | ug/L | | 114 | 58 - 151 | 4 | 24 |
| Bromoform | 10.0 | 8.69 | | ug/L | | 87 | 62 - 140 | 9 | 25 |
| Bromomethane | 10.0 | 7.43 | | ug/L | | 74 | 22 - 179 | 1 | 44 |
| Carbon tetrachloride | 10.0 | 9.32 | | ug/L | | 93 | 53 - 134 | 9 | 19 |
| Chlorobenzene | 10.0 | 10.9 | | ug/L | | 109 | 63 - 132 | 8 | 20 |
| Chloroethane | 10.0 | 8.73 | | ug/L | | 87 | 53 - 144 | 22 | 38 |
| Chloroform | 10.0 | 10.0 | | ug/L | | 100 | 60 - 126 | 4 | 30 |
| Chloromethane | 10.0 | 10.7 | | ug/L | | 107 | 62 - 130 | 8 | 34 |
| Dibromochloromethane | 10.0 | 7.49 | | ug/L | | 75 | 55 - 134 | 9 | 24 |
| Dibromomethane | 10.0 | 10.1 | | ug/L | | 101 | 62 - 141 | 10 | 21 |
| 1,2-Dichlorobenzene | 10.0 | 11.9 | | ug/L | | 119 | 60 - 154 | 5 | 22 |
| 1,3-Dichlorobenzene | 10.0 | 11.6 | | ug/L | | 116 | 55 - 147 | 6 | 21 |
| 1,4-Dichlorobenzene | 10.0 | 11.4 | | ug/L | | 114 | 58 - 151 | 5 | 21 |
| Dichlorodifluoromethane | 10.0 | 7.69 | | ug/L | | 77 | 28 - 133 | 5 | 35 |
| 1,1-Dichloroethane | 10.0 | 10.3 | | ug/L | | 103 | 54 - 132 | 6 | 30 |
| 1,2-Dichloroethane | 10.0 | 9.44 | | ug/L | | 94 | 51 - 167 | 5 | 28 |
| cis-1,2-Dichloroethylene | 10.0 | 10.1 | | ug/L | | 101 | 49 - 127 | 8 | 29 |
| trans-1,2-Dichloroethene | 10.0 | 11.4 | | ug/L | | 114 | 46 - 125 | 9 | 32 |
| 1,1-Dichloroethene | 10.0 | 10.6 | | ug/L | | 106 | 43 - 118 | 10 | 29 |
| 1,2-Dichloropropane | 10.0 | 9.97 | | ug/L | | 100 | 60 - 138 | 6 | 20 |
| cis-1,3-Dichloropropene | 10.0 | 8.35 | | ug/L | | 83 | 49 - 141 | 3 | 24 |
| trans-1,3-Dichloropropene | 10.0 | 7.48 | | ug/L | | 75 | 52 - 140 | 8 | 20 |
| Methylene Chloride | 10.0 | 12.4 | | ug/L | | 124 | 52 - 132 | 5 | 30 |
| 1,1,1,2-Tetrachloroethane | 10.0 | 9.74 | | ug/L | | 97 | 60 - 134 | 4 | 26 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 9.65 | | ug/L | | 97 | 63 - 148 | 9 | 22 |
| Tetrachloroethene | 10.0 | 9.82 | | ug/L | | 98 | 48 - 136 | 5 | 38 |
| 1,1,1-Trichloroethane | 10.0 | 9.89 | | ug/L | | 99 | 58 - 136 | 9 | 21 |
| 1,1,2-Trichloroethane | 10.0 | 9.69 | | ug/L | | 97 | 60 - 140 | 6 | 22 |
| Trichloroethene | 10.0 | 10.4 | | ug/L | | 104 | 59 - 129 | 8 | 22 |
| Trichlorofluoromethane | 10.0 | 9.08 | | ug/L | | 91 | 62 - 138 | 5 | 40 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 660-182028/6**
**Matrix: Water**
**Analysis Batch: 182028**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | | | 10.0 | 10.9 | | ug/L | | 109 | 51 - 171 | 24 | 32 |
| Vinyl chloride | | | 10.0 | 9.11 | | ug/L | | 91 | 66 - 121 | 2 | 31 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *100* | | *70 - 119* |
| *Dibromofluoromethane* | *98* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* |

**Lab Sample ID: 660-80120-7 MS**
**Matrix: Water**
**Analysis Batch: 182028**

**Client Sample ID: WB-3L MS**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 10.0 | 9.32 | | ug/L | | 93 | 70 - 139 |
| Bromoform | <1.0 | | 10.0 | 7.09 | | ug/L | | 71 | 49 - 150 |
| Bromomethane | <5.0 | | 10.0 | 9.12 | | ug/L | | 91 | 23 - 140 |
| Carbon tetrachloride | <1.0 | | 10.0 | 6.74 | | ug/L | | 67 | 50 - 162 |
| Chlorobenzene | <1.0 | | 10.0 | 8.68 | | ug/L | | 87 | 70 - 125 |
| Chloroethane | <5.0 | | 10.0 | 8.02 | | ug/L | | 80 | 43 - 165 |
| Chloroform | <1.0 | | 10.0 | 7.77 | | ug/L | | 78 | 70 - 124 |
| Chloromethane | <4.0 | | 10.0 | 7.71 | | ug/L | | 77 | 56 - 137 |
| Dibromochloromethane | <1.0 | F1 | 10.0 | 5.69 | F1 | ug/L | | 57 | 58 - 131 |
| Dibromomethane | <1.0 | | 10.0 | 7.77 | | ug/L | | 78 | 63 - 131 |
| 1,2-Dichlorobenzene | <1.0 | | 10.0 | 9.41 | | ug/L | | 94 | 70 - 142 |
| 1,3-Dichlorobenzene | <1.0 | | 10.0 | 9.35 | | ug/L | | 93 | 70 - 137 |
| 1,4-Dichlorobenzene | <1.0 | | 10.0 | 9.24 | | ug/L | | 92 | 70 - 137 |
| Dichlorodifluoromethane | <5.0 | F1 | 10.0 | <5.0 | F1 | ug/L | | 0 | 37 - 139 |
| 1,1-Dichloroethane | <1.0 | | 10.0 | 8.11 | | ug/L | | 81 | 70 - 126 |
| 1,2-Dichloroethane | <1.0 | | 10.0 | 7.84 | | ug/L | | 78 | 65 - 150 |
| cis-1,2-Dichloroethylene | 85 | | 10.0 | 83.4 | 4 | ug/L | | -11 | 70 - 122 |
| trans-1,2-Dichloroethene | 3.7 | | 10.0 | 11.5 | | ug/L | | 78 | 64 - 127 |
| 1,1-Dichloroethene | 0.72 | J | 10.0 | 8.25 | | ug/L | | 75 | 60 - 127 |
| 1,2-Dichloropropane | <1.0 | | 10.0 | 8.07 | | ug/L | | 81 | 66 - 135 |
| cis-1,3-Dichloropropene | <1.0 | | 10.0 | 6.38 | | ug/L | | 64 | 46 - 131 |
| trans-1,3-Dichloropropene | <1.0 | | 10.0 | 5.71 | | ug/L | | 57 | 40 - 137 |
| Methylene Chloride | <10 | | 10.0 | 8.89 | J | ug/L | | 89 | 61 - 134 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 10.0 | 7.77 | | ug/L | | 78 | 59 - 140 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 10.0 | 7.55 | | ug/L | | 75 | 41 - 149 |
| Tetrachloroethene | 3.7 | | 10.0 | 10.8 | | ug/L | | 71 | 62 - 128 |
| 1,1,1-Trichloroethane | <1.0 | | 10.0 | 7.48 | | ug/L | | 75 | 61 - 152 |
| 1,1,2-Trichloroethane | <1.0 | | 10.0 | 7.84 | | ug/L | | 78 | 60 - 132 |
| Trichloroethene | 65 | | 10.0 | 66.5 | 4 | ug/L | | 10 | 70 - 131 |
| Trichlorofluoromethane | <5.0 | | 10.0 | 7.95 | | ug/L | | 80 | 60 - 157 |
| 1,2,3-Trichloropropane | <1.0 | | 10.0 | 8.30 | | ug/L | | 83 | 35 - 164 |
| Vinyl chloride | 3.6 | | 10.0 | 10.2 | | ug/L | | 65 | 63 - 126 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 660-80120-7 MS**
**Matrix: Water**
**Analysis Batch: 182028**

**Client Sample ID: WB-3L MS**
**Prep Type: Total/NA**

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | | *70 - 119* |
| *Dibromofluoromethane* | *94* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* |

**Lab Sample ID: 660-80120-7 MSD**
**Matrix: Water**
**Analysis Batch: 182028**

**Client Sample ID: WB-3L MSD**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 10.0 | 9.63 | | ug/L | | 96 | 70 - 139 | 3 | 19 |
| Bromoform | <1.0 | | 10.0 | 7.49 | | ug/L | | 75 | 49 - 150 | 5 | 20 |
| Bromomethane | <5.0 | | 10.0 | 8.27 | | ug/L | | 83 | 23 - 140 | 10 | 41 |
| Carbon tetrachloride | <1.0 | | 10.0 | 6.87 | | ug/L | | 69 | 50 - 162 | 2 | 28 |
| Chlorobenzene | <1.0 | | 10.0 | 9.38 | | ug/L | | 94 | 70 - 125 | 8 | 23 |
| Chloroethane | <5.0 | | 10.0 | 8.64 | | ug/L | | 86 | 43 - 165 | 7 | 45 |
| Chloroform | <1.0 | | 10.0 | 8.04 | | ug/L | | 80 | 70 - 124 | 3 | 21 |
| Chloromethane | <4.0 | | 10.0 | 8.13 | | ug/L | | 81 | 56 - 137 | 5 | 16 |
| Dibromochloromethane | <1.0 | F1 | 10.0 | 5.84 | | ug/L | | 58 | 58 - 131 | 3 | 18 |
| Dibromomethane | <1.0 | | 10.0 | 7.64 | | ug/L | | 76 | 63 - 131 | 2 | 21 |
| 1,2-Dichlorobenzene | <1.0 | | 10.0 | 10.4 | | ug/L | | 104 | 70 - 142 | 10 | 24 |
| 1,3-Dichlorobenzene | <1.0 | | 10.0 | 9.69 | | ug/L | | 97 | 70 - 137 | 4 | 24 |
| 1,4-Dichlorobenzene | <1.0 | | 10.0 | 9.71 | | ug/L | | 97 | 70 - 137 | 5 | 25 |
| Dichlorodifluoromethane | <5.0 | F1 | 10.0 | <5.0 | F1 | ug/L | | 0 | 37 - 139 | NC | 31 |
| 1,1-Dichloroethane | <1.0 | | 10.0 | 8.80 | | ug/L | | 88 | 70 - 126 | 8 | 29 |
| 1,2-Dichloroethane | <1.0 | | 10.0 | 8.26 | | ug/L | | 83 | 65 - 150 | 5 | 19 |
| cis-1,2-Dichloroethylene | 85 | | 10.0 | 85.6 | 4 | ug/L | | 11 | 70 - 122 | 3 | 22 |
| trans-1,2-Dichloroethene | 3.7 | | 10.0 | 12.5 | | ug/L | | 87 | 64 - 127 | 8 | 21 |
| 1,1-Dichloroethene | 0.72 | J | 10.0 | 8.55 | | ug/L | | 78 | 60 - 127 | 4 | 33 |
| 1,2-Dichloropropane | <1.0 | | 10.0 | 7.94 | | ug/L | | 79 | 66 - 135 | 2 | 22 |
| cis-1,3-Dichloropropene | <1.0 | | 10.0 | 6.86 | | ug/L | | 69 | 46 - 131 | 7 | 25 |
| trans-1,3-Dichloropropene | <1.0 | | 10.0 | 5.89 | | ug/L | | 59 | 40 - 137 | 3 | 25 |
| Methylene Chloride | <10 | | 10.0 | 9.21 | J | ug/L | | 92 | 61 - 134 | 3 | 21 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 10.0 | 8.22 | | ug/L | | 82 | 59 - 140 | 6 | 22 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 10.0 | 8.24 | | ug/L | | 82 | 41 - 149 | 9 | 23 |
| Tetrachloroethene | 3.7 | | 10.0 | 11.1 | | ug/L | | 74 | 62 - 128 | 3 | 26 |
| 1,1,1-Trichloroethane | <1.0 | | 10.0 | 7.75 | | ug/L | | 77 | 61 - 152 | 3 | 21 |
| 1,1,2-Trichloroethane | <1.0 | | 10.0 | 8.47 | | ug/L | | 85 | 60 - 132 | 8 | 22 |
| Trichloroethene | 65 | | 10.0 | 68.3 | 4 | ug/L | | 28 | 70 - 131 | 3 | 28 |
| Trichlorofluoromethane | <5.0 | | 10.0 | 7.47 | | ug/L | | 75 | 60 - 157 | 6 | 20 |
| 1,2,3-Trichloropropane | <1.0 | | 10.0 | 8.01 | | ug/L | | 80 | 35 - 164 | 4 | 24 |
| Vinyl chloride | 3.6 | | 10.0 | 10.4 | | ug/L | | 67 | 63 - 126 | 2 | 23 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 119* |
| *Dibromofluoromethane* | *95* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 660-182037/7**
**Matrix: Water**
**Analysis Batch: 182037**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/23/17 19:03 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 19:03 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 19:03 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/23/17 19:03 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 19:03 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 19:03 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/23/17 19:03 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/23/17 19:03 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/23/17 19:03 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/23/17 19:03 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/23/17 19:03 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/23/17 19:03 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/23/17 19:03 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 19:03 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 19:03 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/23/17 19:03 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/23/17 19:03 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/23/17 19:03 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/23/17 19:03 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/23/17 19:03 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/23/17 19:03 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/23/17 19:03 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/23/17 19:03 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/23/17 19:03 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/23/17 19:03 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/23/17 19:03 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 19:03 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/23/17 19:03 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/23/17 19:03 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/23/17 19:03 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/23/17 19:03 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/23/17 19:03 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* | | *04/23/17 19:03* | *1* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/23/17 19:03* | *1* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/23/17 19:03* | *1* |

**Lab Sample ID: LCS 660-182037/4**
**Matrix: Water**
**Analysis Batch: 182037**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromobenzene | 10.0 | 10.9 | | ug/L | | 109 | 58 - 151 |
| Bromoform | 10.0 | 8.06 | | ug/L | | 81 | 62 - 140 |
| Bromomethane | 10.0 | 10.8 | | ug/L | | 108 | 22 - 179 |
| Carbon tetrachloride | 10.0 | 8.68 | | ug/L | | 87 | 53 - 134 |
| Chlorobenzene | 10.0 | 10.4 | | ug/L | | 104 | 63 - 132 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 660-182037/4**
**Matrix: Water**
**Analysis Batch: 182037**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Chloroethane | 10.0 | 11.6 | | ug/L | | 116 | 53 - 144 |
| Chloroform | 10.0 | 9.53 | | ug/L | | 95 | 60 - 126 |
| Chloromethane | 10.0 | 10.5 | | ug/L | | 105 | 62 - 130 |
| Dibromochloromethane | 10.0 | 6.86 | | ug/L | | 69 | 55 - 134 |
| Dibromomethane | 10.0 | 9.22 | | ug/L | | 92 | 62 - 141 |
| 1,2-Dichlorobenzene | 10.0 | 11.0 | | ug/L | | 110 | 60 - 154 |
| 1,3-Dichlorobenzene | 10.0 | 10.9 | | ug/L | | 109 | 55 - 147 |
| 1,4-Dichlorobenzene | 10.0 | 11.1 | | ug/L | | 111 | 58 - 151 |
| Dichlorodifluoromethane | 10.0 | 8.29 | | ug/L | | 83 | 28 - 133 |
| 1,1-Dichloroethane | 10.0 | 10.0 | | ug/L | | 100 | 54 - 132 |
| 1,2-Dichloroethane | 10.0 | 9.42 | | ug/L | | 94 | 51 - 167 |
| cis-1,2-Dichloroethylene | 10.0 | 9.89 | | ug/L | | 99 | 49 - 127 |
| trans-1,2-Dichloroethene | 10.0 | 11.3 | | ug/L | | 113 | 46 - 125 |
| 1,1-Dichloroethene | 10.0 | 10.4 | | ug/L | | 104 | 43 - 118 |
| 1,2-Dichloropropane | 10.0 | 9.72 | | ug/L | | 97 | 60 - 138 |
| cis-1,3-Dichloropropene | 10.0 | 8.08 | | ug/L | | 81 | 49 - 141 |
| trans-1,3-Dichloropropene | 10.0 | 7.25 | | ug/L | | 72 | 52 - 140 |
| Methylene Chloride | 10.0 | 11.8 | | ug/L | | 118 | 52 - 132 |
| 1,1,1,2-Tetrachloroethane | 10.0 | 9.19 | | ug/L | | 92 | 60 - 134 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 8.56 | | ug/L | | 86 | 63 - 148 |
| Tetrachloroethene | 10.0 | 9.72 | | ug/L | | 97 | 48 - 136 |
| 1,1,1-Trichloroethane | 10.0 | 8.88 | | ug/L | | 89 | 58 - 136 |
| 1,1,2-Trichloroethane | 10.0 | 9.41 | | ug/L | | 94 | 60 - 140 |
| Trichloroethene | 10.0 | 10.2 | | ug/L | | 102 | 59 - 129 |
| Trichlorofluoromethane | 10.0 | 10.4 | | ug/L | | 104 | 62 - 138 |
| 1,2,3-Trichloropropane | 10.0 | 9.54 | | ug/L | | 95 | 51 - 171 |
| Vinyl chloride | 10.0 | 9.42 | | ug/L | | 94 | 66 - 121 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | | *70 - 119* |
| *Dibromofluoromethane* | *98* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* |

**Lab Sample ID: LCSD 660-182037/5**
**Matrix: Water**
**Analysis Batch: 182037**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | 10.0 | 11.1 | | ug/L | | 111 | 58 - 151 | 2 | 24 |
| Bromoform | 10.0 | 8.26 | | ug/L | | 83 | 62 - 140 | 2 | 25 |
| Bromomethane | 10.0 | 9.12 | | ug/L | | 91 | 22 - 179 | 17 | 44 |
| Carbon tetrachloride | 10.0 | 7.53 | | ug/L | | 75 | 53 - 134 | 14 | 19 |
| Chlorobenzene | 10.0 | 10.5 | | ug/L | | 105 | 63 - 132 | 1 | 20 |
| Chloroethane | 10.0 | 10.1 | | ug/L | | 101 | 53 - 144 | 14 | 38 |
| Chloroform | 10.0 | 9.76 | | ug/L | | 98 | 60 - 126 | 2 | 30 |
| Chloromethane | 10.0 | 9.31 | | ug/L | | 93 | 62 - 130 | 12 | 34 |
| Dibromochloromethane | 10.0 | 7.11 | | ug/L | | 71 | 55 - 134 | 4 | 24 |
| Dibromomethane | 10.0 | 9.02 | | ug/L | | 90 | 62 - 141 | 2 | 21 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 660-182037/5**
**Matrix: Water**
**Analysis Batch: 182037**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 10.0 | 11.7 | | ug/L | | 117 | 60 - 154 | 6 | 22 |
| 1,3-Dichlorobenzene | 10.0 | 11.2 | | ug/L | | 112 | 55 - 147 | 3 | 21 |
| 1,4-Dichlorobenzene | 10.0 | 11.1 | | ug/L | | 111 | 58 - 151 | 0 | 21 |
| Dichlorodifluoromethane | 10.0 | 6.36 | | ug/L | | 64 | 28 - 133 | 26 | 35 |
| 1,1-Dichloroethane | 10.0 | 9.80 | | ug/L | | 98 | 54 - 132 | 2 | 30 |
| 1,2-Dichloroethane | 10.0 | 9.40 | | ug/L | | 94 | 51 - 167 | 0 | 28 |
| cis-1,2-Dichloroethylene | 10.0 | 9.38 | | ug/L | | 94 | 49 - 127 | 5 | 29 |
| trans-1,2-Dichloroethene | 10.0 | 10.2 | | ug/L | | 102 | 46 - 125 | 9 | 32 |
| 1,1-Dichloroethene | 10.0 | 8.90 | | ug/L | | 89 | 43 - 118 | 15 | 29 |
| 1,2-Dichloropropane | 10.0 | 9.51 | | ug/L | | 95 | 60 - 138 | 2 | 20 |
| cis-1,3-Dichloropropene | 10.0 | 8.19 | | ug/L | | 82 | 49 - 141 | 1 | 24 |
| trans-1,3-Dichloropropene | 10.0 | 6.80 | | ug/L | | 68 | 52 - 140 | 6 | 20 |
| Methylene Chloride | 10.0 | 11.9 | | ug/L | | 119 | 52 - 132 | 1 | 30 |
| 1,1,1,2-Tetrachloroethane | 10.0 | 9.35 | | ug/L | | 94 | 60 - 134 | 2 | 26 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 8.26 | | ug/L | | 83 | 63 - 148 | 4 | 22 |
| Tetrachloroethene | 10.0 | 8.71 | | ug/L | | 87 | 48 - 136 | 11 | 38 |
| 1,1,1-Trichloroethane | 10.0 | 8.81 | | ug/L | | 88 | 58 - 136 | 1 | 21 |
| 1,1,2-Trichloroethane | 10.0 | 9.52 | | ug/L | | 95 | 60 - 140 | 1 | 22 |
| Trichloroethene | 10.0 | 9.44 | | ug/L | | 94 | 59 - 129 | 8 | 22 |
| Trichlorofluoromethane | 10.0 | 8.45 | | ug/L | | 85 | 62 - 138 | 21 | 40 |
| 1,2,3-Trichloropropane | 10.0 | 8.77 | | ug/L | | 88 | 51 - 171 | 8 | 32 |
| Vinyl chloride | 10.0 | 8.15 | | ug/L | | 81 | 66 - 121 | 15 | 31 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 119* |
| *Dibromofluoromethane* | *97* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* |

**Lab Sample ID: 660-80121-11 MS**
**Matrix: Water**
**Analysis Batch: 182037**

**Client Sample ID: GZ-701R**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 10.0 | 9.76 | | ug/L | | 98 | 70 - 139 |
| Bromoform | <1.0 | | 10.0 | 7.10 | | ug/L | | 71 | 49 - 150 |
| Bromomethane | <5.0 | | 10.0 | 11.5 | | ug/L | | 115 | 23 - 140 |
| Carbon tetrachloride | <1.0 | | 10.0 | 7.24 | | ug/L | | 72 | 50 - 162 |
| Chlorobenzene | <1.0 | | 10.0 | 9.50 | | ug/L | | 95 | 70 - 125 |
| Chloroethane | <5.0 | | 10.0 | 10.1 | | ug/L | | 101 | 43 - 165 |
| Chloroform | <1.0 | | 10.0 | 8.76 | | ug/L | | 88 | 70 - 124 |
| Chloromethane | <4.0 | | 10.0 | 7.39 | | ug/L | | 74 | 56 - 137 |
| Dibromochloromethane | <1.0 | F1 | 10.0 | 5.47 | F1 | ug/L | | 55 | 58 - 131 |
| Dibromomethane | <1.0 | | 10.0 | 7.75 | | ug/L | | 78 | 63 - 131 |
| 1,2-Dichlorobenzene | <1.0 | | 10.0 | 10.1 | | ug/L | | 101 | 70 - 142 |
| 1,3-Dichlorobenzene | <1.0 | | 10.0 | 9.74 | | ug/L | | 97 | 70 - 137 |
| 1,4-Dichlorobenzene | <1.0 | | 10.0 | 9.95 | | ug/L | | 100 | 70 - 137 |
| Dichlorodifluoromethane | <5.0 | | 10.0 | 5.48 | | ug/L | | 55 | 37 - 139 |
| 1,1-Dichloroethane | <1.0 | | 10.0 | 9.18 | | ug/L | | 92 | 70 - 126 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 660-80121-11 MS** — **Client Sample ID: GZ-701R**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 182037**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | <1.0 | | 10.0 | 8.87 | | ug/L | | 89 | 65 - 150 |
| cis-1,2-Dichloroethylene | <1.0 | | 10.0 | 9.25 | | ug/L | | 93 | 70 - 122 |
| trans-1,2-Dichloroethene | <1.0 | | 10.0 | 9.78 | | ug/L | | 98 | 64 - 127 |
| 1,1-Dichloroethene | <1.0 | | 10.0 | 9.08 | | ug/L | | 91 | 60 - 127 |
| 1,2-Dichloropropane | <1.0 | | 10.0 | 8.95 | | ug/L | | 90 | 66 - 135 |
| cis-1,3-Dichloropropene | <1.0 | | 10.0 | 6.79 | | ug/L | | 68 | 46 - 131 |
| trans-1,3-Dichloropropene | <1.0 | | 10.0 | 5.83 | | ug/L | | 58 | 40 - 137 |
| Methylene Chloride | <10 | | 10.0 | 9.45 | J | ug/L | | 95 | 61 - 134 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 10.0 | 8.07 | | ug/L | | 81 | 59 - 140 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 10.0 | 7.91 | | ug/L | | 79 | 41 - 149 |
| Tetrachloroethene | <1.0 | | 10.0 | 8.14 | | ug/L | | 81 | 62 - 128 |
| 1,1,1-Trichloroethane | <1.0 | | 10.0 | 8.80 | | ug/L | | 88 | 61 - 152 |
| 1,1,2-Trichloroethane | <1.0 | | 10.0 | 8.02 | | ug/L | | 80 | 60 - 132 |
| Trichloroethene | <1.0 | | 10.0 | 9.14 | | ug/L | | 91 | 70 - 131 |
| Trichlorofluoromethane | <5.0 | | 10.0 | 8.02 | | ug/L | | 80 | 60 - 157 |
| 1,2,3-Trichloropropane | <1.0 | | 10.0 | 8.56 | | ug/L | | 86 | 35 - 164 |
| Vinyl chloride | <1.0 | | 10.0 | 6.85 | | ug/L | | 68 | 63 - 126 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | | *70 - 119* |
| *Dibromofluoromethane* | *96* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *96* | | *78 - 126* |

**Lab Sample ID: 660-80121-9 DU** — **Client Sample ID: GZ-601R**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 182037**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Bromoform | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Bromomethane | <5.0 | | <5.0 | | ug/L | | NC | 30 |
| Carbon tetrachloride | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Chlorobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Chloroethane | <5.0 | | <5.0 | | ug/L | | NC | 30 |
| Chloroform | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Chloromethane | <4.0 | | <4.0 | | ug/L | | NC | 30 |
| Dibromochloromethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Dibromomethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,2-Dichlorobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,3-Dichlorobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,4-Dichlorobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Dichlorodifluoromethane | <5.0 | | <5.0 | | ug/L | | NC | 30 |
| 1,1-Dichloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,2-Dichloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| cis-1,2-Dichloroethylene | 32 | | 32.5 | | ug/L | | 1 | 30 |
| trans-1,2-Dichloroethene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1-Dichloroethene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,2-Dichloropropane | <1.0 | | <1.0 | | ug/L | | NC | 30 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 660-80121-9 DU** — **Client Sample ID: GZ-601R**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 182037**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| trans-1,3-Dichloropropene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Methylene Chloride | <10 | | <10 | | ug/L | | NC | 30 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Tetrachloroethene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1,1-Trichloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1,2-Trichloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Trichloroethene | 1.9 | | 1.97 | | ug/L | | 1 | 30 |
| Trichlorofluoromethane | <5.0 | | <5.0 | | ug/L | | NC | 30 |
| 1,2,3-Trichloropropane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Vinyl chloride | <1.0 | | <1.0 | | ug/L | | NC | 30 |

| *Surrogate* | *DU %Recovery* | *DU Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *93* | | *70 - 119* |
| *Dibromofluoromethane* | *96* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *96* | | *78 - 126* |

**Lab Sample ID: MB 660-182052/7** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 182052**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/24/17 12:17 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 12:17 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 12:17 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/24/17 12:17 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 12:17 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 12:17 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/24/17 12:17 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/24/17 12:17 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/24/17 12:17 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/24/17 12:17 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/24/17 12:17 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/24/17 12:17 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/24/17 12:17 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 12:17 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 12:17 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/24/17 12:17 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/24/17 12:17 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 12:17 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/24/17 12:17 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/24/17 12:17 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/24/17 12:17 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/24/17 12:17 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/24/17 12:17 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/24/17 12:17 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/24/17 12:17 | 1 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 660-182052/7**
**Matrix: Water**
**Analysis Batch: 182052**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 12:17 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 12:17 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/24/17 12:17 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/24/17 12:17 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/24/17 12:17 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/24/17 12:17 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/24/17 12:17 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | | *70 - 119* | | *04/24/17 12:17* | *1* |
| *Dibromofluoromethane* | *98* | | *83 - 123* | | *04/24/17 12:17* | *1* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* | | *04/24/17 12:17* | *1* |

**Lab Sample ID: LCS 660-182052/4**
**Matrix: Water**
**Analysis Batch: 182052**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromobenzene | 10.0 | 11.0 | | ug/L | | 110 | 58 - 151 |
| Bromoform | 10.0 | 8.13 | | ug/L | | 81 | 62 - 140 |
| Bromomethane | 10.0 | 9.73 | | ug/L | | 97 | 22 - 179 |
| Carbon tetrachloride | 10.0 | 9.38 | | ug/L | | 94 | 53 - 134 |
| Chlorobenzene | 10.0 | 10.8 | | ug/L | | 108 | 63 - 132 |
| Chloroethane | 10.0 | 11.7 | | ug/L | | 117 | 53 - 144 |
| Chloroform | 10.0 | 9.87 | | ug/L | | 99 | 60 - 126 |
| Chloromethane | 10.0 | 11.0 | | ug/L | | 110 | 62 - 130 |
| Dibromochloromethane | 10.0 | 6.51 | | ug/L | | 65 | 55 - 134 |
| Dibromomethane | 10.0 | 9.36 | | ug/L | | 94 | 62 - 141 |
| 1,2-Dichlorobenzene | 10.0 | 11.3 | | ug/L | | 113 | 60 - 154 |
| 1,3-Dichlorobenzene | 10.0 | 11.0 | | ug/L | | 110 | 55 - 147 |
| 1,4-Dichlorobenzene | 10.0 | 11.3 | | ug/L | | 113 | 58 - 151 |
| Dichlorodifluoromethane | 10.0 | 9.49 | | ug/L | | 95 | 28 - 133 |
| 1,1-Dichloroethane | 10.0 | 9.99 | | ug/L | | 100 | 54 - 132 |
| 1,2-Dichloroethane | 10.0 | 9.33 | | ug/L | | 93 | 51 - 167 |
| cis-1,2-Dichloroethylene | 10.0 | 10.0 | | ug/L | | 100 | 49 - 127 |
| trans-1,2-Dichloroethene | 10.0 | 11.9 | | ug/L | | 119 | 46 - 125 |
| 1,1-Dichloroethene | 10.0 | 11.2 | | ug/L | | 112 | 43 - 118 |
| 1,2-Dichloropropane | 10.0 | 9.77 | | ug/L | | 98 | 60 - 138 |
| cis-1,3-Dichloropropene | 10.0 | 7.73 | | ug/L | | 77 | 49 - 141 |
| trans-1,3-Dichloropropene | 10.0 | 6.61 | | ug/L | | 66 | 52 - 140 |
| Methylene Chloride | 10.0 | 11.6 | | ug/L | | 116 | 52 - 132 |
| 1,1,1,2-Tetrachloroethane | 10.0 | 9.45 | | ug/L | | 94 | 60 - 134 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 8.48 | | ug/L | | 85 | 63 - 148 |
| Tetrachloroethene | 10.0 | 10.3 | | ug/L | | 103 | 48 - 136 |
| 1,1,1-Trichloroethane | 10.0 | 9.91 | | ug/L | | 99 | 58 - 136 |
| 1,1,2-Trichloroethane | 10.0 | 9.38 | | ug/L | | 94 | 60 - 140 |
| Trichloroethene | 10.0 | 10.9 | | ug/L | | 109 | 59 - 129 |
| Trichlorofluoromethane | 10.0 | 11.6 | | ug/L | | 116 | 62 - 138 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 660-182052/4**
**Matrix: Water**
**Analysis Batch: 182052**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2,3-Trichloropropane | 10.0 | 9.22 | | ug/L | | 92 | 51 - 171 |
| Vinyl chloride | 10.0 | 10.0 | | ug/L | | 100 | 66 - 121 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | | *70 - 119* |
| *Dibromofluoromethane* | *97* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *93* | | *78 - 126* |

**Lab Sample ID: LCSD 660-182052/5**
**Matrix: Water**
**Analysis Batch: 182052**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | 10.0 | 10.9 | | ug/L | | 109 | 58 - 151 | 1 | 24 |
| Bromoform | 10.0 | 8.37 | | ug/L | | 84 | 62 - 140 | 3 | 25 |
| Bromomethane | 10.0 | 9.95 | | ug/L | | 100 | 22 - 179 | 2 | 44 |
| Carbon tetrachloride | 10.0 | 9.16 | | ug/L | | 92 | 53 - 134 | 2 | 19 |
| Chlorobenzene | 10.0 | 10.6 | | ug/L | | 106 | 63 - 132 | 2 | 20 |
| Chloroethane | 10.0 | 10.8 | | ug/L | | 108 | 53 - 144 | 8 | 38 |
| Chloroform | 10.0 | 9.98 | | ug/L | | 100 | 60 - 126 | 1 | 30 |
| Chloromethane | 10.0 | 10.7 | | ug/L | | 107 | 62 - 130 | 4 | 34 |
| Dibromochloromethane | 10.0 | 6.90 | | ug/L | | 69 | 55 - 134 | 6 | 24 |
| Dibromomethane | 10.0 | 9.76 | | ug/L | | 98 | 62 - 141 | 4 | 21 |
| 1,2-Dichlorobenzene | 10.0 | 11.3 | | ug/L | | 113 | 60 - 154 | 1 | 22 |
| 1,3-Dichlorobenzene | 10.0 | 11.3 | | ug/L | | 113 | 55 - 147 | 3 | 21 |
| 1,4-Dichlorobenzene | 10.0 | 11.3 | | ug/L | | 113 | 58 - 151 | 0 | 21 |
| Dichlorodifluoromethane | 10.0 | 9.20 | | ug/L | | 92 | 28 - 133 | 3 | 35 |
| 1,1-Dichloroethane | 10.0 | 10.3 | | ug/L | | 103 | 54 - 132 | 3 | 30 |
| 1,2-Dichloroethane | 10.0 | 9.96 | | ug/L | | 100 | 51 - 167 | 7 | 28 |
| cis-1,2-Dichloroethylene | 10.0 | 10.1 | | ug/L | | 101 | 49 - 127 | 0 | 29 |
| trans-1,2-Dichloroethene | 10.0 | 11.9 | | ug/L | | 119 | 46 - 125 | 1 | 32 |
| 1,1-Dichloroethene | 10.0 | 11.0 | | ug/L | | 110 | 43 - 118 | 2 | 29 |
| 1,2-Dichloropropane | 10.0 | 9.61 | | ug/L | | 96 | 60 - 138 | 2 | 20 |
| cis-1,3-Dichloropropene | 10.0 | 7.91 | | ug/L | | 79 | 49 - 141 | 2 | 24 |
| trans-1,3-Dichloropropene | 10.0 | 6.84 | | ug/L | | 68 | 52 - 140 | 4 | 20 |
| Methylene Chloride | 10.0 | 11.8 | | ug/L | | 118 | 52 - 132 | 2 | 30 |
| 1,1,1,2-Tetrachloroethane | 10.0 | 9.38 | | ug/L | | 94 | 60 - 134 | 1 | 26 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 8.67 | | ug/L | | 87 | 63 - 148 | 2 | 22 |
| Tetrachloroethene | 10.0 | 10.2 | | ug/L | | 102 | 48 - 136 | 0 | 38 |
| 1,1,1-Trichloroethane | 10.0 | 10.2 | | ug/L | | 102 | 58 - 136 | 2 | 21 |
| 1,1,2-Trichloroethane | 10.0 | 9.86 | | ug/L | | 99 | 60 - 140 | 5 | 22 |
| Trichloroethene | 10.0 | 10.8 | | ug/L | | 108 | 59 - 129 | 1 | 22 |
| Trichlorofluoromethane | 10.0 | 10.8 | | ug/L | | 108 | 62 - 138 | 7 | 40 |
| 1,2,3-Trichloropropane | 10.0 | 9.37 | | ug/L | | 94 | 51 - 171 | 2 | 32 |
| Vinyl chloride | 10.0 | 9.69 | | ug/L | | 97 | 66 - 121 | 4 | 31 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 660-182052/5**
**Matrix: Water**
**Analysis Batch: 182052**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 119* |
| *Dibromofluoromethane* | *95* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *95* | | *78 - 126* |

**Lab Sample ID: 660-80146-5 MS**
**Matrix: Water**
**Analysis Batch: 182052**

**Client Sample ID: IW-3**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 10.0 | 6.97 | | ug/L | | 70 | 70 - 139 |
| Bromoform | <1.0 | | 10.0 | 7.13 | | ug/L | | 71 | 49 - 150 |
| Bromomethane | <5.0 | | 10.0 | 12.0 | | ug/L | | 120 | 23 - 140 |
| Carbon tetrachloride | <1.0 | | 10.0 | 6.09 | | ug/L | | 61 | 50 - 162 |
| Chlorobenzene | <1.0 | | 10.0 | 7.36 | | ug/L | | 74 | 70 - 125 |
| Chloroethane | <5.0 | | 10.0 | 10.9 | | ug/L | | 109 | 43 - 165 |
| Chloroform | <1.0 | | 10.0 | 8.55 | | ug/L | | 86 | 70 - 124 |
| Chloromethane | <4.0 | | 10.0 | 12.5 | | ug/L | | 125 | 56 - 137 |
| Dibromochloromethane | <1.0 | F1 | 10.0 | 5.22 | F1 | ug/L | | 52 | 58 - 131 |
| Dibromomethane | <1.0 | | 10.0 | 9.06 | | ug/L | | 91 | 63 - 131 |
| 1,2-Dichlorobenzene | <1.0 | F1 | 10.0 | 5.25 | F1 | ug/L | | 53 | 70 - 142 |
| 1,3-Dichlorobenzene | <1.0 | F1 | 10.0 | 4.74 | F1 | ug/L | | 47 | 70 - 137 |
| 1,4-Dichlorobenzene | <1.0 | F1 | 10.0 | 5.02 | F1 | ug/L | | 50 | 70 - 137 |
| Dichlorodifluoromethane | <5.0 | F1 | 10.0 | <5.0 | F1 | ug/L | | 0 | 37 - 139 |
| 1,1-Dichloroethane | <1.0 | | 10.0 | 9.53 | | ug/L | | 95 | 70 - 126 |
| 1,2-Dichloroethane | <1.0 | | 10.0 | 9.35 | | ug/L | | 94 | 65 - 150 |
| cis-1,2-Dichloroethylene | 4.7 | | 10.0 | 13.9 | | ug/L | | 92 | 70 - 122 |
| trans-1,2-Dichloroethene | <1.0 | | 10.0 | 10.7 | | ug/L | | 107 | 64 - 127 |
| 1,1-Dichloroethene | <1.0 | | 10.0 | 9.76 | | ug/L | | 98 | 60 - 127 |
| 1,2-Dichloropropane | <1.0 | | 10.0 | 8.29 | | ug/L | | 83 | 66 - 135 |
| cis-1,3-Dichloropropene | <1.0 | | 10.0 | 6.76 | | ug/L | | 68 | 46 - 131 |
| trans-1,3-Dichloropropene | <1.0 | | 10.0 | 6.18 | | ug/L | | 62 | 40 - 137 |
| Methylene Chloride | 9.6 | J | 10.0 | 19.4 | | ug/L | | 97 | 61 - 134 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 10.0 | 6.95 | | ug/L | | 69 | 59 - 140 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 10.0 | 8.20 | | ug/L | | 82 | 41 - 149 |
| Tetrachloroethene | <1.0 | F1 | 10.0 | 4.95 | F1 | ug/L | | 49 | 62 - 128 |
| 1,1,1-Trichloroethane | <1.0 | | 10.0 | 7.57 | | ug/L | | 76 | 61 - 152 |
| 1,1,2-Trichloroethane | <1.0 | | 10.0 | 8.69 | | ug/L | | 87 | 60 - 132 |
| Trichloroethene | <1.0 | | 10.0 | 7.40 | | ug/L | | 74 | 70 - 131 |
| Trichlorofluoromethane | <5.0 | | 10.0 | 10.2 | | ug/L | | 102 | 60 - 157 |
| 1,2,3-Trichloropropane | <1.0 | | 10.0 | 9.11 | | ug/L | | 91 | 35 - 164 |
| Vinyl chloride | 1.5 | | 10.0 | 11.8 | | ug/L | | 104 | 63 - 126 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *100* | | *70 - 119* |
| *Dibromofluoromethane* | *91* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *92* | | *78 - 126* |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 660-80146-4 DU**
**Matrix: Water**
**Analysis Batch: 182052**

**Client Sample ID: Purge Water 4.13.17**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Bromoform | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Bromomethane | <5.0 | | <5.0 | | ug/L | | NC | 30 |
| Carbon tetrachloride | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Chlorobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Chloroethane | <5.0 | | <5.0 | | ug/L | | NC | 30 |
| Chloroform | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Chloromethane | <4.0 | | <4.0 | | ug/L | | NC | 30 |
| Dibromochloromethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Dibromomethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,2-Dichlorobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,3-Dichlorobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,4-Dichlorobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Dichlorodifluoromethane | <5.0 | | <5.0 | | ug/L | | NC | 30 |
| 1,1-Dichloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,2-Dichloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| cis-1,2-Dichloroethylene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| trans-1,2-Dichloroethene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1-Dichloroethene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,2-Dichloropropane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| cis-1,3-Dichloropropene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| trans-1,3-Dichloropropene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Methylene Chloride | <10 | | <10 | | ug/L | | NC | 30 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Tetrachloroethene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1,1-Trichloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1,2-Trichloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Trichloroethene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Trichlorofluoromethane | <5.0 | | <5.0 | | ug/L | | NC | 30 |
| 1,2,3-Trichloropropane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Vinyl chloride | <1.0 | | <1.0 | | ug/L | | NC | 30 |

| *Surrogate* | *DU %Recovery* | *DU Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *95* | | *70 - 119* |
| *Dibromofluoromethane* | *98* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *94* | | *78 - 126* |

**Lab Sample ID: MB 660-182102/7**
**Matrix: Water**
**Analysis Batch: 182102**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 04/25/17 13:20 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/25/17 13:20 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/25/17 13:20 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 04/25/17 13:20 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/25/17 13:20 | 1 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 660-182102/7**
**Matrix: Water**
**Analysis Batch: 182102**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/25/17 13:20 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 04/25/17 13:20 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 04/25/17 13:20 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 04/25/17 13:20 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 04/25/17 13:20 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 04/25/17 13:20 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 04/25/17 13:20 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 04/25/17 13:20 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/25/17 13:20 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/25/17 13:20 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 04/25/17 13:20 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 04/25/17 13:20 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/25/17 13:20 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 04/25/17 13:20 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 04/25/17 13:20 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 04/25/17 13:20 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 04/25/17 13:20 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 04/25/17 13:20 | 1 |
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 04/25/17 13:20 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 04/25/17 13:20 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/25/17 13:20 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/25/17 13:20 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 04/25/17 13:20 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 04/25/17 13:20 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 04/25/17 13:20 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 04/25/17 13:20 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 04/25/17 13:20 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *104* | | *70 - 119* | | *04/25/17 13:20* | *1* |
| *Dibromofluoromethane* | *104* | | *83 - 123* | | *04/25/17 13:20* | *1* |
| *Toluene-d8 (Surr)* | *103* | | *78 - 126* | | *04/25/17 13:20* | *1* |

**Lab Sample ID: LCS 660-182102/4**
**Matrix: Water**
**Analysis Batch: 182102**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Bromobenzene | 10.0 | 9.79 | | ug/L | | 98 | 58 - 151 |
| Bromoform | 10.0 | 9.50 | | ug/L | | 95 | 62 - 140 |
| Bromomethane | 10.0 | 8.22 | | ug/L | | 82 | 22 - 179 |
| Carbon tetrachloride | 10.0 | 11.5 | | ug/L | | 115 | 53 - 134 |
| Chlorobenzene | 10.0 | 9.99 | | ug/L | | 100 | 63 - 132 |
| Chloroethane | 10.0 | 12.2 | | ug/L | | 122 | 53 - 144 |
| Chloroform | 10.0 | 11.0 | | ug/L | | 110 | 60 - 126 |
| Chloromethane | 10.0 | 11.5 | | ug/L | | 115 | 62 - 130 |
| Dibromochloromethane | 10.0 | 10.7 | | ug/L | | 107 | 55 - 134 |
| Dibromomethane | 10.0 | 10.8 | | ug/L | | 108 | 62 - 141 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 660-182102/4**
**Matrix: Water**
**Analysis Batch: 182102**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,2-Dichlorobenzene | 10.0 | 9.84 | | ug/L | | 98 | 60 - 154 |
| 1,3-Dichlorobenzene | 10.0 | 9.82 | | ug/L | | 98 | 55 - 147 |
| 1,4-Dichlorobenzene | 10.0 | 10.0 | | ug/L | | 100 | 58 - 151 |
| Dichlorodifluoromethane | 10.0 | 12.9 | | ug/L | | 129 | 28 - 133 |
| 1,1-Dichloroethane | 10.0 | 10.7 | | ug/L | | 107 | 54 - 132 |
| 1,2-Dichloroethane | 10.0 | 10.5 | | ug/L | | 105 | 51 - 167 |
| cis-1,2-Dichloroethylene | 10.0 | 11.2 | | ug/L | | 112 | 49 - 127 |
| trans-1,2-Dichloroethene | 10.0 | 11.4 | | ug/L | | 114 | 46 - 125 |
| 1,1-Dichloroethene | 10.0 | 11.4 | | ug/L | | 114 | 43 - 118 |
| 1,2-Dichloropropane | 10.0 | 10.5 | | ug/L | | 105 | 60 - 138 |
| cis-1,3-Dichloropropene | 10.0 | 11.0 | | ug/L | | 110 | 49 - 141 |
| trans-1,3-Dichloropropene | 10.0 | 10.6 | | ug/L | | 106 | 52 - 140 |
| Methylene Chloride | 10.0 | 10.2 | | ug/L | | 102 | 52 - 132 |
| 1,1,1,2-Tetrachloroethane | 10.0 | 9.81 | | ug/L | | 98 | 60 - 134 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 9.75 | | ug/L | | 98 | 63 - 148 |
| Tetrachloroethene | 10.0 | 11.4 | | ug/L | | 114 | 48 - 136 |
| 1,1,1-Trichloroethane | 10.0 | 11.2 | | ug/L | | 112 | 58 - 136 |
| 1,1,2-Trichloroethane | 10.0 | 11.3 | | ug/L | | 113 | 60 - 140 |
| Trichloroethene | 10.0 | 10.7 | | ug/L | | 107 | 59 - 129 |
| Trichlorofluoromethane | 10.0 | 11.8 | | ug/L | | 118 | 62 - 138 |
| 1,2,3-Trichloropropane | 10.0 | 9.85 | | ug/L | | 98 | 51 - 171 |
| Vinyl chloride | 10.0 | 11.9 | | ug/L | | 119 | 66 - 121 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 119* |
| *Dibromofluoromethane* | *105* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *107* | | *78 - 126* |

**Lab Sample ID: LCSD 660-182102/5**
**Matrix: Water**
**Analysis Batch: 182102**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Bromobenzene | 10.0 | 9.64 | | ug/L | | 96 | 58 - 151 | 2 | 24 |
| Bromoform | 10.0 | 9.05 | | ug/L | | 91 | 62 - 140 | 5 | 25 |
| Bromomethane | 10.0 | 9.04 | | ug/L | | 90 | 22 - 179 | 10 | 44 |
| Carbon tetrachloride | 10.0 | 10.7 | | ug/L | | 107 | 53 - 134 | 7 | 19 |
| Chlorobenzene | 10.0 | 9.59 | | ug/L | | 96 | 63 - 132 | 4 | 20 |
| Chloroethane | 10.0 | 11.8 | | ug/L | | 118 | 53 - 144 | 3 | 38 |
| Chloroform | 10.0 | 9.95 | | ug/L | | 100 | 60 - 126 | 10 | 30 |
| Chloromethane | 10.0 | 12.0 | | ug/L | | 120 | 62 - 130 | 4 | 34 |
| Dibromochloromethane | 10.0 | 9.46 | | ug/L | | 95 | 55 - 134 | 12 | 24 |
| Dibromomethane | 10.0 | 10.5 | | ug/L | | 105 | 62 - 141 | 3 | 21 |
| 1,2-Dichlorobenzene | 10.0 | 9.42 | | ug/L | | 94 | 60 - 154 | 4 | 22 |
| 1,3-Dichlorobenzene | 10.0 | 9.66 | | ug/L | | 97 | 55 - 147 | 2 | 21 |
| 1,4-Dichlorobenzene | 10.0 | 9.69 | | ug/L | | 97 | 58 - 151 | 3 | 21 |
| Dichlorodifluoromethane | 10.0 | 9.84 | | ug/L | | 98 | 28 - 133 | 27 | 35 |
| 1,1-Dichloroethane | 10.0 | 10.4 | | ug/L | | 104 | 54 - 132 | 3 | 30 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 660-182102/5**
**Matrix: Water**
**Analysis Batch: 182102**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | 10.0 | 10.3 | | ug/L | | 103 | 51 - 167 | 2 | 28 |
| cis-1,2-Dichloroethylene | 10.0 | 10.7 | | ug/L | | 107 | 49 - 127 | 5 | 29 |
| trans-1,2-Dichloroethene | 10.0 | 11.9 | | ug/L | | 119 | 46 - 125 | 4 | 32 |
| 1,1-Dichloroethene | 10.0 | 11.8 | | ug/L | | 118 | 43 - 118 | 3 | 29 |
| 1,2-Dichloropropane | 10.0 | 10.6 | | ug/L | | 106 | 60 - 138 | 1 | 20 |
| cis-1,3-Dichloropropene | 10.0 | 10.0 | | ug/L | | 100 | 49 - 141 | 9 | 24 |
| trans-1,3-Dichloropropene | 10.0 | 9.66 | | ug/L | | 97 | 52 - 140 | 9 | 20 |
| Methylene Chloride | 10.0 | 12.4 | | ug/L | | 124 | 52 - 132 | 19 | 30 |
| 1,1,1,2-Tetrachloroethane | 10.0 | 9.39 | | ug/L | | 94 | 60 - 134 | 4 | 26 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 9.40 | | ug/L | | 94 | 63 - 148 | 4 | 22 |
| Tetrachloroethene | 10.0 | 10.9 | | ug/L | | 109 | 48 - 136 | 4 | 38 |
| 1,1,1-Trichloroethane | 10.0 | 10.7 | | ug/L | | 107 | 58 - 136 | 4 | 21 |
| 1,1,2-Trichloroethane | 10.0 | 10.6 | | ug/L | | 106 | 60 - 140 | 6 | 22 |
| Trichloroethene | 10.0 | 10.7 | | ug/L | | 107 | 59 - 129 | 0 | 22 |
| Trichlorofluoromethane | 10.0 | 10.6 | | ug/L | | 106 | 62 - 138 | 11 | 40 |
| 1,2,3-Trichloropropane | 10.0 | 9.75 | | ug/L | | 97 | 51 - 171 | 1 | 32 |
| Vinyl chloride | 10.0 | 10.9 | | ug/L | | 109 | 66 - 121 | 9 | 31 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *101* | | *70 - 119* |
| *Dibromofluoromethane* | *101* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *102* | | *78 - 126* |

## Method: RSK-175 - Dissolved Gases (GC)

**Lab Sample ID: MB 680-477006/8**
**Matrix: Water**
**Analysis Batch: 477006**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethane | <1.1 | | 1.1 | 0.55 | ug/L | | | 04/24/17 11:20 | 1 |
| Ethylene | <1.0 | | 1.0 | 0.50 | ug/L | | | 04/24/17 11:20 | 1 |
| Methane | <0.58 | | 0.58 | 0.29 | ug/L | | | 04/24/17 11:20 | 1 |
| Methane (TCD) | <390 | | 390 | 39 | ug/L | | | 04/24/17 11:20 | 1 |

**Lab Sample ID: LCS 680-477006/3**
**Matrix: Water**
**Analysis Batch: 477006**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Ethane | 288 | 273 | | ug/L | | 95 | 75 - 125 |
| Ethylene | 269 | 255 | | ug/L | | 95 | 75 - 125 |
| Methane | 154 | 154 | | ug/L | | 100 | 75 - 125 |

## Method: RSK-175 - Dissolved Gases (GC) (Continued)

**Lab Sample ID: LCS 680-477006/6** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477006**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Methane (TCD) | 1920 | 1890 | | ug/L | | 98 | 75 - 125 |

**Lab Sample ID: LCSD 680-477006/4** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477006**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Ethane | 288 | 262 | | ug/L | | 91 | 75 - 125 | 4 | 30 |
| Ethylene | 269 | 244 | | ug/L | | 91 | 75 - 125 | 4 | 30 |
| Methane | 154 | 148 | | ug/L | | 96 | 75 - 125 | 4 | 30 |

**Lab Sample ID: LCSD 680-477006/7** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477006**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Methane (TCD) | 1920 | 1910 | | ug/L | | 100 | 75 - 125 | 1 | 30 |

## Method: 6010B - Metals (ICP)

**Lab Sample ID: MB 660-181866/1-A** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total Recoverable**
**Analysis Batch: 181892** — **Prep Batch: 181866**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | <200 | | 200 | 50 | ug/L | | 04/18/17 14:09 | 04/19/17 09:23 | 1 |

**Lab Sample ID: LCS 660-181866/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total Recoverable**
**Analysis Batch: 181892** — **Prep Batch: 181866**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Dissolved Iron | 1000 | 1030 | | ug/L | | 103 | 80 - 120 |

**Lab Sample ID: LCSD 660-181866/24-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Water** — **Prep Type: Total Recoverable**
**Analysis Batch: 181892** — **Prep Batch: 181866**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | 1000 | 1030 | | ug/L | | 103 | 80 - 120 | 0 | 20 |

**Lab Sample ID: MB 660-182073/1-A** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total Recoverable**
**Analysis Batch: 182135** — **Prep Batch: 182073**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | <200 | | 200 | 50 | ug/L | | 04/24/17 13:20 | 04/25/17 14:20 | 1 |

## Method: 6010B - Metals (ICP) (Continued)

**Lab Sample ID: LCS 660-182073/2-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total Recoverable**
**Analysis Batch: 182135** — **Prep Batch: 182073**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | | | 1000 | 1070 | | ug/L | | 107 | 80 - 120 | | |

**Lab Sample ID: 660-80146-5 MS** — **Client Sample ID: IW-3**
**Matrix: Water** — **Prep Type: Dissolved**
**Analysis Batch: 182135** — **Prep Batch: 182073**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | 81000 | | 1000 | 87300 | 4 | ug/L | | 623 | 80 - 120 | | |

**Lab Sample ID: 660-80146-5 MSD** — **Client Sample ID: IW-3**
**Matrix: Water** — **Prep Type: Dissolved**
**Analysis Batch: 182135** — **Prep Batch: 182073**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dissolved Iron | 81000 | | 1000 | 84600 | 4 | ug/L | | 354 | 80 - 120 | 3 | 20 |

## Method: 5310 B-2011 - Organic Carbon, Total (TOC)

**Lab Sample ID: MB 680-477274/2** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477274**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | <1.0 | | 1.0 | 0.50 | mg/L | | | 04/24/17 20:52 | 1 |

**Lab Sample ID: LCS 680-477274/3** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477274**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | | 20.0 | 19.2 | | mg/L | | 96 | 80 - 120 | | |

**Lab Sample ID: LCSD 680-477274/4** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477274**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | | 20.0 | 18.5 | | mg/L | | 93 | 80 - 120 | 4 | 25 |

**Lab Sample ID: 660-80084-7 MS** — **Client Sample ID: GZ-504L**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477274**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1.3 | | 20.0 | 20.9 | | mg/L | | 98 | 80 - 120 | | |

## Method: 5310 B-2011 - Organic Carbon, Total (TOC) (Continued)

**Lab Sample ID: 660-80084-7 MSD** — **Client Sample ID: GZ-504L**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477274**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1.3 | | 20.0 | 20.8 | | mg/L | | 97 | 80 - 120 | 1 | 25 |

**Lab Sample ID: MB 680-477275/2** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477275**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | <1.0 | | 1.0 | 0.50 | mg/L | | | 04/25/17 02:02 | 1 |

**Lab Sample ID: LCS 680-477275/3** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477275**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | | 20.0 | 19.2 | | mg/L | | 96 | 80 - 120 | | |

**Lab Sample ID: LCSD 680-477275/4** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477275**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | | 20.0 | 19.3 | | mg/L | | 96 | 80 - 120 | 0 | 25 |

**Lab Sample ID: 660-80146-6 MS** — **Client Sample ID: WB-4L**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477275**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1.1 | | 20.0 | 20.8 | | mg/L | | 99 | 80 - 120 | | |

**Lab Sample ID: 660-80146-6 MSD** — **Client Sample ID: WB-4L**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477275**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | 1.1 | | 20.0 | 20.7 | | mg/L | | 98 | 80 - 120 | 1 | 25 |

**Lab Sample ID: MB 680-477547/2** — **Client Sample ID: Method Blank**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477547**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | <1.0 | | 1.0 | 0.50 | mg/L | | | 04/26/17 13:01 | 1 |

**Lab Sample ID: LCS 680-477547/4** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 477547**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | | 20.0 | 19.5 | | mg/L | | 97 | 80 - 120 | | |

# QC Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

**Lab Sample ID: LCSD 680-477547/5**
**Matrix: Water**
**Analysis Batch: 477547**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon | | | 20.0 | 19.3 | | mg/L | | 96 | 80 - 120 | 1 | 25 |

## GC/MS VOA

### Analysis Batch: 181808

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80084-1 | Trip Blank | Total/NA | Water | 8260B | |
| 660-80084-2 | Field Blank | Total/NA | Water | 8260B | |
| 660-80084-3 - DL | OW-404R | Total/NA | Water | 8260B | |
| 660-80084-3 | OW-404R | Total/NA | Water | 8260B | |
| 660-80084-4 | OW-404U | Total/NA | Water | 8260B | |
| 660-80084-5 | WB-2L | Total/NA | Water | 8260B | |
| 660-80084-6 | WB-1U | Total/NA | Water | 8260B | |
| 660-80084-7 | GZ-504L | Total/NA | Water | 8260B | |
| 660-80084-8 | WB-1L | Total/NA | Water | 8260B | |
| 660-80084-8 - DL | WB-1L | Total/NA | Water | 8260B | |
| 660-80084-9 - DL | WB-1L DUP | Total/NA | Water | 8260B | |
| 660-80084-9 | WB-1L DUP | Total/NA | Water | 8260B | |
| 660-80084-10 | GZ-504R | Total/NA | Water | 8260B | |
| 660-80084-11 | GZ-501L | Total/NA | Water | 8260B | |
| 660-80084-12 | OW-101L | Total/NA | Water | 8260B | |
| 660-80084-13 | GZ-503L | Total/NA | Water | 8260B | |
| MB 660-181808/6 | Method Blank | Total/NA | Water | 8260B | |
| LCS 660-181808/4 | Lab Control Sample | Total/NA | Water | 8260B | |
| 660-80084-8 MS | WB-1L MS | Total/NA | Water | 8260B | |
| 660-80084-8 MSD | WB-1L MSD | Total/NA | Water | 8260B | |

### Analysis Batch: 182028

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80120-2 | Trip Blank | Total/NA | Water | 8260B | |
| 660-80120-3 - DL | GZ-519U | Total/NA | Water | 8260B | |
| 660-80120-3 | GZ-519U | Total/NA | Water | 8260B | |
| 660-80120-4 - DL | OW-101 | Total/NA | Water | 8260B | |
| 660-80120-4 | OW-101 | Total/NA | Water | 8260B | |
| 660-80120-5 - DL | GZ-505R | Total/NA | Water | 8260B | |
| 660-80120-5 | GZ-505R | Total/NA | Water | 8260B | |
| 660-80120-6 - DL | OW-307 | Total/NA | Water | 8260B | |
| 660-80120-6 | OW-307 | Total/NA | Water | 8260B | |
| 660-80120-7 | WB-3L | Total/NA | Water | 8260B | |
| 660-80120-8 | WB-3L DUP | Total/NA | Water | 8260B | |
| 660-80120-9 | WB-2U | Total/NA | Water | 8260B | |
| 660-80121-2 | Trip Blank | Total/NA | Water | 8260B | |
| 660-80121-3 | Field Blank | Total/NA | Water | 8260B | |
| 660-80121-5 | Equipment Blank 1 | Total/NA | Water | 8260B | |
| 660-80121-6 | GZ-701L | Total/NA | Water | 8260B | |
| 660-80121-7 | Equipment Blank 2 | Total/NA | Water | 8260B | |
| MB 660-182028/8 | Method Blank | Total/NA | Water | 8260B | |
| LCS 660-182028/5 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 660-182028/6 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 660-80120-7 MS | WB-3L MS | Total/NA | Water | 8260B | |
| 660-80120-7 MSD | WB-3L MSD | Total/NA | Water | 8260B | |

### Analysis Batch: 182037

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80121-4 - DL | OW-304R | Total/NA | Water | 8260B | |
| 660-80121-4 | OW-304R | Total/NA | Water | 8260B | |
| 660-80121-8 | GZ-702R | Total/NA | Water | 8260B | |

## GC/MS VOA (Continued)

### Analysis Batch: 182037 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80121-9 | GZ-601R | Total/NA | Water | 8260B | |
| 660-80121-10 - DL | GZ-505R DUP | Total/NA | Water | 8260B | |
| 660-80121-10 | GZ-505R DUP | Total/NA | Water | 8260B | |
| 660-80121-11 | GZ-701R | Total/NA | Water | 8260B | |
| 660-80121-12 - DL | GZ-703R DUP | Total/NA | Water | 8260B | |
| 660-80121-12 | GZ-703R DUP | Total/NA | Water | 8260B | |
| 660-80121-13 - DL | GZ-703R | Total/NA | Water | 8260B | |
| 660-80121-13 | GZ-703R | Total/NA | Water | 8260B | |
| 660-80121-14 | GZ-702U | Total/NA | Water | 8260B | |
| 660-80121-15 | GZ-506R | Total/NA | Water | 8260B | |
| 660-80121-16 - DL | OW-304L | Total/NA | Water | 8260B | |
| 660-80121-16 | OW-304L | Total/NA | Water | 8260B | |
| MB 660-182037/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 660-182037/4 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 660-182037/5 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 660-80121-11 MS | GZ-701R | Total/NA | Water | 8260B | |
| 660-80121-9 DU | GZ-601R | Total/NA | Water | 8260B | |

### Analysis Batch: 182052

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80146-2 | Trip Blank | Total/NA | Water | 8260B | |
| 660-80146-3 | Field Blank | Total/NA | Water | 8260B | |
| 660-80146-4 | Purge Water 4.13.17 | Total/NA | Water | 8260B | |
| 660-80146-5 | IW-3 | Total/NA | Water | 8260B | |
| 660-80146-6 | WB-4L | Total/NA | Water | 8260B | |
| 660-80146-7 | IW-2 | Total/NA | Water | 8260B | |
| 660-80146-8 - DL | IW-1 | Total/NA | Water | 8260B | |
| 660-80146-8 | IW-1 | Total/NA | Water | 8260B | |
| MB 660-182052/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 660-182052/4 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 660-182052/5 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 660-80146-5 MS | IW-3 | Total/NA | Water | 8260B | |
| 660-80146-4 DU | Purge Water 4.13.17 | Total/NA | Water | 8260B | |

### Analysis Batch: 182102

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80146-6 - DL | WB-4L | Total/NA | Water | 8260B | |
| MB 660-182102/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 660-182102/4 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 660-182102/5 | Lab Control Sample Dup | Total/NA | Water | 8260B | |

## GC VOA

### Analysis Batch: 477006

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80084-7 | GZ-504L | Total/NA | Water | RSK-175 | |
| 660-80084-10 | GZ-504R | Total/NA | Water | RSK-175 | |
| 660-80084-13 | GZ-503L | Total/NA | Water | RSK-175 | |
| 660-80120-3 | GZ-519U | Total/NA | Water | RSK-175 | |
| 660-80120-4 | OW-101 | Total/NA | Water | RSK-175 | |

## GC VOA (Continued)

### Analysis Batch: 477006 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80120-5 | GZ-505R | Total/NA | Water | RSK-175 | |
| 660-80120-6 | OW-307 | Total/NA | Water | RSK-175 | |
| 660-80121-15 | GZ-506R | Total/NA | Water | RSK-175 | |
| 660-80121-16 | OW-304L | Total/NA | Water | RSK-175 | |
| 660-80146-5 | IW-3 | Total/NA | Water | RSK-175 | |
| 660-80146-6 | WB-4L | Total/NA | Water | RSK-175 | |
| 660-80146-7 | IW-2 | Total/NA | Water | RSK-175 | |
| 660-80146-8 | IW-1 | Total/NA | Water | RSK-175 | |
| MB 680-477006/8 | Method Blank | Total/NA | Water | RSK-175 | |
| LCS 680-477006/3 | Lab Control Sample | Total/NA | Water | RSK-175 | |
| LCS 680-477006/6 | Lab Control Sample | Total/NA | Water | RSK-175 | |
| LCSD 680-477006/4 | Lab Control Sample Dup | Total/NA | Water | RSK-175 | |
| LCSD 680-477006/7 | Lab Control Sample Dup | Total/NA | Water | RSK-175 | |

## Metals

### Prep Batch: 181866

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80084-7 | GZ-504L | Dissolved | Water | 3005A | |
| 660-80084-10 | GZ-504R | Dissolved | Water | 3005A | |
| 660-80084-13 | GZ-503L | Dissolved | Water | 3005A | |
| 660-80120-3 | GZ-519U | Dissolved | Water | 3005A | |
| 660-80120-4 | OW-101 | Dissolved | Water | 3005A | |
| 660-80120-5 | GZ-505R | Dissolved | Water | 3005A | |
| 660-80120-6 | OW-307 | Dissolved | Water | 3005A | |
| 660-80121-15 | GZ-506R | Dissolved | Water | 3005A | |
| 660-80121-16 | OW-304L | Dissolved | Water | 3005A | |
| MB 660-181866/1-A | Method Blank | Total Recoverable | Water | 3005A | |
| LCS 660-181866/2-A | Lab Control Sample | Total Recoverable | Water | 3005A | |
| LCSD 660-181866/24-A | Lab Control Sample Dup | Total Recoverable | Water | 3005A | |

### Analysis Batch: 181892

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80084-7 | GZ-504L | Dissolved | Water | 6010B | 181866 |
| 660-80084-10 | GZ-504R | Dissolved | Water | 6010B | 181866 |
| 660-80084-13 | GZ-503L | Dissolved | Water | 6010B | 181866 |
| 660-80120-3 | GZ-519U | Dissolved | Water | 6010B | 181866 |
| 660-80120-4 | OW-101 | Dissolved | Water | 6010B | 181866 |
| 660-80120-5 | GZ-505R | Dissolved | Water | 6010B | 181866 |
| 660-80120-6 | OW-307 | Dissolved | Water | 6010B | 181866 |
| 660-80121-15 | GZ-506R | Dissolved | Water | 6010B | 181866 |
| 660-80121-16 | OW-304L | Dissolved | Water | 6010B | 181866 |
| MB 660-181866/1-A | Method Blank | Total Recoverable | Water | 6010B | 181866 |
| LCS 660-181866/2-A | Lab Control Sample | Total Recoverable | Water | 6010B | 181866 |
| LCSD 660-181866/24-A | Lab Control Sample Dup | Total Recoverable | Water | 6010B | 181866 |

### Prep Batch: 182073

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80146-5 | IW-3 | Dissolved | Water | 3005A | |
| 660-80146-6 | WB-4L | Dissolved | Water | 3005A | |

## Metals (Continued)

### Prep Batch: 182073 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80146-7 | IW-2 | Dissolved | Water | 3005A | |
| 660-80146-8 | IW-1 | Dissolved | Water | 3005A | |
| MB 660-182073/1-A | Method Blank | Total Recoverable | Water | 3005A | |
| LCS 660-182073/2-A | Lab Control Sample | Total Recoverable | Water | 3005A | |
| 660-80146-5 MS | IW-3 | Dissolved | Water | 3005A | |
| 660-80146-5 MSD | IW-3 | Dissolved | Water | 3005A | |

### Analysis Batch: 182135

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80146-5 | IW-3 | Dissolved | Water | 6010B | 182073 |
| 660-80146-6 | WB-4L | Dissolved | Water | 6010B | 182073 |
| 660-80146-7 | IW-2 | Dissolved | Water | 6010B | 182073 |
| 660-80146-8 | IW-1 | Dissolved | Water | 6010B | 182073 |
| MB 660-182073/1-A | Method Blank | Total Recoverable | Water | 6010B | 182073 |
| LCS 660-182073/2-A | Lab Control Sample | Total Recoverable | Water | 6010B | 182073 |
| 660-80146-5 MS | IW-3 | Dissolved | Water | 6010B | 182073 |
| 660-80146-5 MSD | IW-3 | Dissolved | Water | 6010B | 182073 |

## General Chemistry

### Analysis Batch: 477274

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80084-7 | GZ-504L | Total/NA | Water | 5310 B-2011 | |
| 660-80084-10 | GZ-504R | Total/NA | Water | 5310 B-2011 | |
| 660-80084-13 | GZ-503L | Total/NA | Water | 5310 B-2011 | |
| 660-80120-3 | GZ-519U | Total/NA | Water | 5310 B-2011 | |
| 660-80120-4 | OW-101 | Total/NA | Water | 5310 B-2011 | |
| 660-80120-5 | GZ-505R | Total/NA | Water | 5310 B-2011 | |
| 660-80120-6 | OW-307 | Total/NA | Water | 5310 B-2011 | |
| 660-80121-15 | GZ-506R | Total/NA | Water | 5310 B-2011 | |
| 660-80121-16 | OW-304L | Total/NA | Water | 5310 B-2011 | |
| 660-80146-5 | IW-3 | Total/NA | Water | 5310 B-2011 | |
| MB 680-477274/2 | Method Blank | Total/NA | Water | 5310 B-2011 | |
| LCS 680-477274/3 | Lab Control Sample | Total/NA | Water | 5310 B-2011 | |
| LCSD 680-477274/4 | Lab Control Sample Dup | Total/NA | Water | 5310 B-2011 | |
| 660-80084-7 MS | GZ-504L | Total/NA | Water | 5310 B-2011 | |
| 660-80084-7 MSD | GZ-504L | Total/NA | Water | 5310 B-2011 | |

### Analysis Batch: 477275

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80146-6 | WB-4L | Total/NA | Water | 5310 B-2011 | |
| MB 680-477275/2 | Method Blank | Total/NA | Water | 5310 B-2011 | |
| LCS 680-477275/3 | Lab Control Sample | Total/NA | Water | 5310 B-2011 | |
| LCSD 680-477275/4 | Lab Control Sample Dup | Total/NA | Water | 5310 B-2011 | |
| 660-80146-6 MS | WB-4L | Total/NA | Water | 5310 B-2011 | |
| 660-80146-6 MSD | WB-4L | Total/NA | Water | 5310 B-2011 | |

### Analysis Batch: 477547

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80146-7 | IW-2 | Total/NA | Water | 5310 B-2011 | |

## General Chemistry (Continued)

### Analysis Batch: 477547 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-80146-8 | IW-1 | Total/NA | Water | 5310 B-2011 | |
| MB 680-477547/2 | Method Blank | Total/NA | Water | 5310 B-2011 | |
| LCS 680-477547/4 | Lab Control Sample | Total/NA | Water | 5310 B-2011 | |
| LCSD 680-477547/5 | Lab Control Sample Dup | Total/NA | Water | 5310 B-2011 | |

# Lab Chronicle

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: Trip Blank — Lab Sample ID: 660-80084-1

**Date Collected: 04/11/17 06:35** — **Matrix: Water**
**Date Received: 04/12/17 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 13:25 | K1P | TAL TAM |

## Client Sample ID: Field Blank — Lab Sample ID: 660-80084-2

**Date Collected: 04/11/17 06:30** — **Matrix: Water**
**Date Received: 04/12/17 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 13:44 | K1P | TAL TAM |

## Client Sample ID: OW-404R — Lab Sample ID: 660-80084-3

**Date Collected: 04/11/17 09:30** — **Matrix: Water**
**Date Received: 04/12/17 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 5 | 181808 | 04/17/17 18:31 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 18:50 | K1P | TAL TAM |

## Client Sample ID: OW-404U — Lab Sample ID: 660-80084-4

**Date Collected: 04/11/17 11:00** — **Matrix: Water**
**Date Received: 04/12/17 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 14:03 | K1P | TAL TAM |

## Client Sample ID: WB-2L — Lab Sample ID: 660-80084-5

**Date Collected: 04/11/17 10:30** — **Matrix: Water**
**Date Received: 04/12/17 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 16:55 | K1P | TAL TAM |

## Client Sample ID: WB-1U — Lab Sample ID: 660-80084-6

**Date Collected: 04/11/17 08:00** — **Matrix: Water**
**Date Received: 04/12/17 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 17:15 | K1P | TAL TAM |

## Client Sample ID: GZ-504L — Lab Sample ID: 660-80084-7

**Date Collected: 04/11/17 07:55**
**Date Received: 04/12/17 09:45**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 15:58 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 13:13 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 181866 | 04/18/17 14:09 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 181892 | 04/19/17 09:47 | GAF | TAL TAM |
| Total/NA | Analysis | 5310 B-2011 | | 1 | 477274 | 04/24/17 21:36 | KLD | TAL SAV |

## Client Sample ID: WB-1L — Lab Sample ID: 660-80084-8

**Date Collected: 04/11/17 08:45**
**Date Received: 04/12/17 09:45**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 14:42 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | DL | 5 | 181808 | 04/17/17 17:52 | K1P | TAL TAM |

## Client Sample ID: WB-1L DUP — Lab Sample ID: 660-80084-9

**Date Collected: 04/11/17 08:45**
**Date Received: 04/12/17 09:45**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 5 | 181808 | 04/17/17 18:11 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 19:28 | K1P | TAL TAM |

## Client Sample ID: GZ-504R — Lab Sample ID: 660-80084-10

**Date Collected: 04/11/17 10:05**
**Date Received: 04/12/17 09:45**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 14:22 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 13:26 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 181866 | 04/18/17 14:09 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 181892 | 04/19/17 09:50 | GAF | TAL TAM |
| Total/NA | Analysis | 5310 B-2011 | | 1 | 477274 | 04/24/17 22:23 | KLD | TAL SAV |

## Client Sample ID: GZ-501L — Lab Sample ID: 660-80084-11

**Date Collected: 04/11/17 12:45**
**Date Received: 04/12/17 09:45**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 16:17 | K1P | TAL TAM |

## Client Sample ID: OW-101L — Lab Sample ID: 660-80084-12

**Date Collected: 04/11/17 13:40** — **Matrix: Water**
**Date Received: 04/12/17 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 16:36 | K1P | TAL TAM |

## Client Sample ID: GZ-503L — Lab Sample ID: 660-80084-13

**Date Collected: 04/11/17 12:50** — **Matrix: Water**
**Date Received: 04/12/17 09:45**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 181808 | 04/17/17 17:33 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 13:39 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 181866 | 04/18/17 14:09 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 181892 | 04/19/17 09:59 | GAF | TAL TAM |
| Total/NA | Analysis | 5310 B-2011 | | 1 | 477274 | 04/24/17 22:44 | KLD | TAL SAV |

## Client Sample ID: Trip Blank — Lab Sample ID: 660-80120-2

**Date Collected: 04/12/17 00:00** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182028 | 04/22/17 13:31 | K1P | TAL TAM |

## Client Sample ID: GZ-519U — Lab Sample ID: 660-80120-3

**Date Collected: 04/12/17 06:55** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 5 | 182028 | 04/22/17 18:10 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 1 | 182028 | 04/22/17 19:46 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 13:52 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 181866 | 04/18/17 14:09 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 181892 | 04/19/17 10:02 | GAF | TAL TAM |
| Total/NA | Analysis | 5310 B-2011 | | 1 | 477274 | 04/24/17 23:02 | KLD | TAL SAV |

## Client Sample ID: OW-101 — Lab Sample ID: 660-80120-4

**Date Collected: 04/12/17 08:05** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 100 | 182028 | 04/22/17 18:29 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 10 | 182028 | 04/22/17 20:25 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 14:05 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 181866 | 04/18/17 14:09 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 181892 | 04/19/17 10:05 | GAF | TAL TAM |

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 5310 B-2011 | | 1 | 477274 | 04/24/17 23:21 | KLD | TAL SAV |

## Client Sample ID: GZ-505R — Lab Sample ID: 660-80120-5

**Date Collected: 04/12/17 12:20** **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 5 | 182028 | 04/22/17 18:48 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 1 | 182028 | 04/22/17 20:06 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 14:18 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 181866 | 04/18/17 14:09 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 181892 | 04/19/17 10:08 | GAF | TAL TAM |
| Total/NA | Analysis | 5310 B-2011 | | 1 | 477274 | 04/24/17 23:39 | KLD | TAL SAV |

## Client Sample ID: OW-307 — Lab Sample ID: 660-80120-6

**Date Collected: 04/12/17 11:35** **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 10 | 182028 | 04/22/17 19:08 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 1 | 182028 | 04/22/17 19:27 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 17:22 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 181866 | 04/18/17 14:09 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 181892 | 04/19/17 10:11 | GAF | TAL TAM |
| Total/NA | Analysis | 5310 B-2011 | | 1 | 477274 | 04/24/17 23:58 | KLD | TAL SAV |

## Client Sample ID: WB-3L — Lab Sample ID: 660-80120-7

**Date Collected: 04/12/17 14:05** **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182028 | 04/22/17 13:50 | K1P | TAL TAM |

## Client Sample ID: WB-3L DUP — Lab Sample ID: 660-80120-8

**Date Collected: 04/12/17 14:05** **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182028 | 04/22/17 14:26 | K1P | TAL TAM |

## Client Sample ID: WB-2U — Lab Sample ID: 660-80120-9

**Date Collected: 04/12/17 14:50** **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182028 | 04/22/17 16:15 | K1P | TAL TAM |

## Client Sample ID: Trip Blank — Lab Sample ID: 660-80121-2

**Date Collected: 04/12/17 06:25** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182028 | 04/22/17 16:34 | K1P | TAL TAM |

## Client Sample ID: Field Blank — Lab Sample ID: 660-80121-3

**Date Collected: 04/12/17 06:30** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182028 | 04/22/17 16:54 | K1P | TAL TAM |

## Client Sample ID: OW-304R — Lab Sample ID: 660-80121-4

**Date Collected: 04/12/17 07:55** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 20 | 182037 | 04/23/17 21:55 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 2 | 182037 | 04/24/17 01:07 | K1P | TAL TAM |

## Client Sample ID: Equipment Blank 1 — Lab Sample ID: 660-80121-5

**Date Collected: 04/12/17 07:40** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182028 | 04/22/17 17:13 | K1P | TAL TAM |

## Client Sample ID: GZ-701L — Lab Sample ID: 660-80121-6

**Date Collected: 04/12/17 10:05** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182028 | 04/22/17 17:51 | K1P | TAL TAM |

## Client Sample ID: Equipment Blank 2 — Lab Sample ID: 660-80121-7

**Date Collected: 04/12/17 08:05** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182028 | 04/22/17 17:32 | K1P | TAL TAM |

## Client Sample ID: GZ-702R — Lab Sample ID: 660-80121-8

**Date Collected: 04/12/17 09:35** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182037 | 04/23/17 21:36 | K1P | TAL TAM |

## Client Sample ID: GZ-601R — Lab Sample ID: 660-80121-9

**Date Collected: 04/12/17 10:20** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182037 | 04/23/17 19:23 | K1P | TAL TAM |

## Client Sample ID: GZ-505R DUP — Lab Sample ID: 660-80121-10

**Date Collected: 04/12/17 12:20** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 10 | 182037 | 04/23/17 22:15 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 1 | 182037 | 04/24/17 00:29 | K1P | TAL TAM |

## Client Sample ID: GZ-701R — Lab Sample ID: 660-80121-11

**Date Collected: 04/12/17 11:00** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182037 | 04/23/17 19:41 | K1P | TAL TAM |

## Client Sample ID: GZ-703R DUP — Lab Sample ID: 660-80121-12

**Date Collected: 04/12/17 11:30** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 5 | 182037 | 04/23/17 22:33 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 1 | 182037 | 04/23/17 23:51 | K1P | TAL TAM |

## Client Sample ID: GZ-703R — Lab Sample ID: 660-80121-13

**Date Collected: 04/12/17 11:30** — **Matrix: Water**
**Date Received: 04/13/17 09:35**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 5 | 182037 | 04/23/17 22:53 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 1 | 182037 | 04/24/17 00:10 | K1P | TAL TAM |

# Lab Chronicle

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Client Sample ID: GZ-702U — Lab Sample ID: 660-80121-14

**Date Collected: 04/12/17 09:40**
**Date Received: 04/13/17 09:35**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182037 | 04/23/17 20:57 | K1P | TAL TAM |

## Client Sample ID: GZ-506R — Lab Sample ID: 660-80121-15

**Date Collected: 04/12/17 07:30**
**Date Received: 04/13/17 09:35**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182037 | 04/23/17 21:17 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 16:04 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 181866 | 04/18/17 14:09 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 181892 | 04/19/17 10:14 | GAF | TAL TAM |
| Total/NA | Analysis | 5310 B-2011 | | 1 | 477274 | 04/25/17 00:16 | KLD | TAL SAV |

## Client Sample ID: OW-304L — Lab Sample ID: 660-80121-16

**Date Collected: 04/12/17 08:20**
**Date Received: 04/13/17 09:35**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 20 | 182037 | 04/23/17 23:12 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 2 | 182037 | 04/24/17 00:48 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 16:17 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 181866 | 04/18/17 14:09 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 181892 | 04/19/17 10:17 | GAF | TAL TAM |
| Total/NA | Analysis | 5310 B-2011 | | 1 | 477274 | 04/25/17 01:04 | KLD | TAL SAV |

## Client Sample ID: Trip Blank — Lab Sample ID: 660-80146-2

**Date Collected: 04/13/17 06:30**
**Date Received: 04/14/17 10:40**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182052 | 04/24/17 12:38 | K1P | TAL TAM |

## Client Sample ID: Field Blank — Lab Sample ID: 660-80146-3

**Date Collected: 04/13/17 06:25**
**Date Received: 04/14/17 10:40**
**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182052 | 04/24/17 13:16 | K1P | TAL TAM |

## Client Sample ID: Purge Water 4.13.17 — Lab Sample ID: 660-80146-4

**Date Collected: 04/13/17 12:25** — **Matrix: Water**
**Date Received: 04/14/17 10:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182052 | 04/24/17 13:36 | K1P | TAL TAM |

## Client Sample ID: IW-3 — Lab Sample ID: 660-80146-5

**Date Collected: 04/13/17 09:50** — **Matrix: Water**
**Date Received: 04/14/17 10:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182052 | 04/24/17 14:14 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 16:30 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 182073 | 04/24/17 13:20 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 182135 | 04/25/17 14:29 | GH1 | TAL TAM |
| Total/NA | Analysis | 5310 B-2011 | | 40 | 477274 | 04/25/17 01:30 | KLD | TAL SAV |

## Client Sample ID: WB-4L — Lab Sample ID: 660-80146-6

**Date Collected: 04/13/17 08:25** — **Matrix: Water**
**Date Received: 04/14/17 10:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182052 | 04/24/17 18:49 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | DL | 5 | 182102 | 04/25/17 16:30 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 16:43 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 182073 | 04/24/17 13:20 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 182135 | 04/25/17 14:42 | GH1 | TAL TAM |
| Total/NA | Analysis | 5310 B-2011 | | 1 | 477275 | 04/25/17 02:47 | KLD | TAL SAV |

## Client Sample ID: IW-2 — Lab Sample ID: 660-80146-7

**Date Collected: 04/13/17 09:20** — **Matrix: Water**
**Date Received: 04/14/17 10:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182052 | 04/24/17 15:31 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 16:56 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 182073 | 04/24/17 13:20 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 182135 | 04/25/17 14:45 | GH1 | TAL TAM |
| Total/NA | Analysis | 5310 B-2011 | | 100 | 477547 | 04/26/17 17:49 | KLD | TAL SAV |

## Client Sample ID: IW-1 — Lab Sample ID: 660-80146-8

**Date Collected: 04/13/17 08:05** — **Matrix: Water**
**Date Received: 04/14/17 10:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 10 | 182052 | 04/24/17 19:08 | K1P | TAL TAM |

# Lab Chronicle

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 182052 | 04/24/17 19:27 | K1P | TAL TAM |
| Total/NA | Analysis | RSK-175 | | 1 | 477006 | 04/24/17 17:09 | SMC | TAL SAV |
| Dissolved | Prep | 3005A | | | 182073 | 04/24/17 13:20 | GAF | TAL TAM |
| Dissolved | Analysis | 6010B | | 1 | 182135 | 04/25/17 14:48 | GH1 | TAL TAM |
| Total/NA | Analysis | 5310 B-2011 | | 100 | 477547 | 04/26/17 18:05 | KLD | TAL SAV |

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

# Accreditation/Certification Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

## Laboratory: TestAmerica Tampa

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| Florida | NELAP | 4 | E84282 | 06-30-17 * |

## Laboratory: TestAmerica Savannah

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| Florida | NELAP | 4 | E87052 | 06-30-17 * |

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

# Method Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8260B | Volatile Organic Compounds (GC/MS) | SW846 | TAL TAM |
| RSK-175 | Dissolved Gases (GC) | RSK | TAL SAV |
| 6010B | Metals (ICP) | SW846 | TAL TAM |
| 5310 B-2011 | Organic Carbon, Total (TOC) | SM | TAL SAV |

**Protocol References:**

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab
SM = "Standard Methods For The Examination Of Water And Wastewater",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858
TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

# Sample Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB April 2017

TestAmerica Job ID: 660-80084-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 660-80084-1 | Trip Blank | Water | 04/11/17 06:35 | 04/12/17 09:45 |
| 660-80084-2 | Field Blank | Water | 04/11/17 06:30 | 04/12/17 09:45 |
| 660-80084-3 | OW-404R | Water | 04/11/17 09:30 | 04/12/17 09:45 |
| 660-80084-4 | OW-404U | Water | 04/11/17 11:00 | 04/12/17 09:45 |
| 660-80084-5 | WB-2L | Water | 04/11/17 10:30 | 04/12/17 09:45 |
| 660-80084-6 | WB-1U | Water | 04/11/17 08:00 | 04/12/17 09:45 |
| 660-80084-7 | GZ-504L | Water | 04/11/17 07:55 | 04/12/17 09:45 |
| 660-80084-8 | WB-1L | Water | 04/11/17 08:45 | 04/12/17 09:45 |
| 660-80084-9 | WB-1L DUP | Water | 04/11/17 08:45 | 04/12/17 09:45 |
| 660-80084-10 | GZ-504R | Water | 04/11/17 10:05 | 04/12/17 09:45 |
| 660-80084-11 | GZ-501L | Water | 04/11/17 12:45 | 04/12/17 09:45 |
| 660-80084-12 | OW-101L | Water | 04/11/17 13:40 | 04/12/17 09:45 |
| 660-80084-13 | GZ-503L | Water | 04/11/17 12:50 | 04/12/17 09:45 |
| 660-80120-2 | Trip Blank | Water | 04/12/17 00:00 | 04/13/17 09:35 |
| 660-80120-3 | GZ-519U | Water | 04/12/17 06:55 | 04/13/17 09:35 |
| 660-80120-4 | OW-101 | Water | 04/12/17 08:05 | 04/13/17 09:35 |
| 660-80120-5 | GZ-505R | Water | 04/12/17 12:20 | 04/13/17 09:35 |
| 660-80120-6 | OW-307 | Water | 04/12/17 11:35 | 04/13/17 09:35 |
| 660-80120-7 | WB-3L | Water | 04/12/17 14:05 | 04/13/17 09:35 |
| 660-80120-8 | WB-3L DUP | Water | 04/12/17 14:05 | 04/13/17 09:35 |
| 660-80120-9 | WB-2U | Water | 04/12/17 14:50 | 04/13/17 09:35 |
| 660-80121-2 | Trip Blank | Water | 04/12/17 06:25 | 04/13/17 09:35 |
| 660-80121-3 | Field Blank | Water | 04/12/17 06:30 | 04/13/17 09:35 |
| 660-80121-4 | OW-304R | Water | 04/12/17 07:55 | 04/13/17 09:35 |
| 660-80121-5 | Equipment Blank 1 | Water | 04/12/17 07:40 | 04/13/17 09:35 |
| 660-80121-6 | GZ-701L | Water | 04/12/17 10:05 | 04/13/17 09:35 |
| 660-80121-7 | Equipment Blank 2 | Water | 04/12/17 08:05 | 04/13/17 09:35 |
| 660-80121-8 | GZ-702R | Water | 04/12/17 09:35 | 04/13/17 09:35 |
| 660-80121-9 | GZ-601R | Water | 04/12/17 10:20 | 04/13/17 09:35 |
| 660-80121-10 | GZ-505R DUP | Water | 04/12/17 12:20 | 04/13/17 09:35 |
| 660-80121-11 | GZ-701R | Water | 04/12/17 11:00 | 04/13/17 09:35 |
| 660-80121-12 | GZ-703R DUP | Water | 04/12/17 11:30 | 04/13/17 09:35 |
| 660-80121-13 | GZ-703R | Water | 04/12/17 11:30 | 04/13/17 09:35 |
| 660-80121-14 | GZ-702U | Water | 04/12/17 09:40 | 04/13/17 09:35 |
| 660-80121-15 | GZ-506R | Water | 04/12/17 07:30 | 04/13/17 09:35 |
| 660-80121-16 | OW-304L | Water | 04/12/17 08:20 | 04/13/17 09:35 |
| 660-80146-2 | Trip Blank | Water | 04/13/17 06:30 | 04/14/17 10:40 |
| 660-80146-3 | Field Blank | Water | 04/13/17 06:25 | 04/14/17 10:40 |
| 660-80146-4 | Purge Water 4.13.17 | Water | 04/13/17 12:25 | 04/14/17 10:40 |
| 660-80146-5 | IW-3 | Water | 04/13/17 09:50 | 04/14/17 10:40 |
| 660-80146-6 | WB-4L | Water | 04/13/17 08:25 | 04/14/17 10:40 |
| 660-80146-7 | IW-2 | Water | 04/13/17 09:20 | 04/14/17 10:40 |
| 660-80146-8 | IW-1 | Water | 04/13/17 08:05 | 04/14/17 10:40 |

# Shipping and Receiving Documents

**TestAmerica Tampa**
6712 Benjamin Road Suite 100
Tampa, FL 33634
Phone (813) 885-7427

# Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

| Client Information | Sampler: Matthew Dion | Lab PM: Gudnason, Mark | Carrier Tracking No(s): | COC No: |
|---|---|---|---|---|
| Client Contact: Mr. James Roehrig | Phone: 781-364-0519 and 603-325-7296 | E-Mail: haukur.gudnason@testamericainc.com | | Page: Page 1 of 2 |
| Company: GZA GeoEnvironmental, Inc. | | | | Job #: 01.24065.19 |
| Address: 249 Vanderbilt Ave | Due Date Requested: | | | |
| City: Norwood | TAT Requested (days): | | | |
| State, Zip: MA, 02062 | | | | |
| Phone: 781-278-5734(Tel) 781-278-5701(Fax) | PO #: | | | |
| Email: james.roehrig@gza.com | WO #: | | | |
| Project Name: HP-San German IB | Project #: | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8260C - Site VOHs | 5310C - Total Organic Carbon | RSK_175 - HEE (Dissolved Gases) | 6010B - Dissolved Iron | | | | | | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | A | S | A | D | | | | | | | |
| Temperature Blank | | | | | | | | | | | | | | | | | |
| Trip Blank | 4-11-17 | 0655 | G | W | | | | | | | | | | | | | |
| Field Blank | 4-11-17 | 0630 | G | W | | | | | | | | | | | | | |
| OW-404R | 4-11-17 | 0730 | G | W | | | X | | | | | | | | | | |
| OW-404U | 4-11-17 | 1100 | G | W | | | X | | | | | | | | | | |
| WB-2L | 4-11-17 | 1030 | G | W | | | X | | | | | | | | | | |
| WB-1U | 4-11-17 | 0800 | G | W | | | X | | | | | | | | | | |
| GZ-504L | 4-11-17 | 0755 | G | W | | | X | X | X | X | | | | | | | |
| WB-1L | 4-11-17 | 0845 | G | W | | | X | | | | | | | | | | |
| WB-1L DUP | 4-11-17 | 0845 | G | W | | | X | | | | | | | | | | |
| WB-1L MS/MSD | 4-11-17 | 0845 | G | W | | | X | | | | | | | | | | |

Loc: 660 80084
660-80084 Chain of Custody

*Possible Hazard Identification*
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

*Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)*
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| Matthew Dion | 4-11-17 @ 1530 | | | 4/12/17 445 | |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 3.4/3.0 CU-09 |
|---|---|---|

**TestAmerica Tampa**
6712 Benjamin Road Suite 100
Tampa, FL 33634
Phone (813) 885-7427

# Chain of Custody Record

TestAmerica

| Client Information | Sampler: Matthew Dion | Lab PM: Gudnason, Mark | Carrier Tracking No(s): | COC No: |
|---|---|---|---|---|
| Client Contact: Mr. James Roehrig | Phone: 781-364-0519 and 603-325-7296 | E-Mail: haukur.gudnason@testamericainc.com | | Page: Page 1 of 1 |
| Company: GZA GeoEnvironmental, Inc. | | | | Job #: 01.24065.19 |
| Address: 249 Vanderbilt Ave | Due Date Requested: | | | |
| City: Norwood | TAT Requested (days): | | | |
| State, Zip: MA, 02062 | | | | |
| Phone: 781-278-5734(Tel) 781-278-5701(Fax) | PO #: | | | |
| Email: james.roehrig@gza.com | WO #: | | | |
| Project Name: HP-San German IB | Project #: | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

| Sample Identification | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8260C - Site VOHs | 5310C - Total Organic Carbon | RSK_175 - MEE (Dissolved Gases) | 6010B - Dissolved Iron | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | A | S | A | D | | |
| GZ-504R | 4-11-17 | 1005 | G | W | | | X | X | X | X | | |
| GZ-501L | 4-11-17 | 1245 | G | W | | | X | | | | | |
| GW-101L | 4-11-17 | 1310 | G | W | | | X | | | | | |
| GZ-503L | 4-11-17 | 1250 | G | W | | | X | X | X | X | | |

**Preservation Codes:**

| | |
|---|---|
| A - HCL | M - Hexane |
| B - NaOH | N - None |
| C - Zn Acetate | O - AsNaO2 |
| D - Nitric Acid | P - Na2O4S |
| E - NaHSO4 | Q - Na2SO3 |
| F - MeOH | R - Na2S2SO3 |
| G - Amchlor | S - H2SO4 |
| H - Ascorbic Acid | T - TSP Dodecahydrate |
| I - Ice | U - Acetone |
| J - DI Water | V - MCAA |
| K - EDTA | W - ph 4-5 |
| L - EDA | Z - other (specify) |

Other:

*Possible Hazard Identification*
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

*Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)*
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| Matthew Dion | 4-11-17 @ 1520 | | | 4/12/17 945 | |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 3.4/3.0 CJ-09

TestAmerica Tampa
6712 Benjamin Road Suite 100
Tampa, FL 33634
Phone (813) 885-7427 Fax (813) 885-7049

# Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

| Client Information (Sub Contract Lab) | Sampler: | Lab PM: Gudnason, Haukur M | Carrier Tracking No(s): | COC No: 660-95697.1 |
|---|---|---|---|---|
| Client Contact: Shipping/Receiving | Phone: | E-Mail: haukur.gudnason@testamericainc.com | State of Origin: Puerto Rico | Page: Page 1 of 1 |
| Company: TestAmerica Laboratories, Inc. | | Accreditations Required (See note): NELAP - Florida | | Job #: 660-80084-1 |
| Address: 5102 LaRoche Avenue, , | Due Date Requested: 4/28/2017 | | | |
| City: Savannah | TAT Requested (days): | | | |
| State, Zip: GA, 31404 | | | | |
| Phone: 912-354-7858(Tel) 912-352-0165(Fax) | PO #: | | | |
| Email: | WO #: | | | |
| Project Name: HP-San German IB April 2017 | Project #: 66009297 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | RSK_175/ MEE (Dissolved Gases) | SM5310_TOC_B/ TOC | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | |
| GZ-504L (660-80084-7) | 4/11/17 | 07:55 Atlantic | | Water | | | X | X | 6 | |
| GZ-504R (660-80084-10) | 4/11/17 | 10:05 Atlantic | | Water | | | X | X | 3 | |
| GZ-503L (660-80084-13) | 4/11/17 | 12:50 Atlantic | | Water | | | X | X | 6 | |

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

*Possible Hazard Identification*
*Unconfirmed*

*Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)*
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|
| | | | |

| Relinquished by | Date/Time | Company | Received by | Date/Time | Company |
|---|---|---|---|---|---|
| [signature] | 4/12/17 1700 | TA TPA | Jessica Delgado | 4/13/17 0700 | TPA |
| | | | | | |
| | | | | | |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 2.0/0.7/2.3/3.6/1.4 0.8/0.5/0.2/2.4/0.2 |
|---|---|---|

**TestAmerica Tampa**
6712 Benjamin Road Suite 100
Tampa, FL 33634
Phone (813) 885-7427

# Chain of Custody Record

TestAmerica

| Client Information | Sampler: Matthew Dion | Lab PM: Gudnason, Mark | Carrier Tracking No(s): | COC No: |
|---|---|---|---|---|
| Client Contact: Mr. James Roehrig | Phone: 781-364-0519 and 603-325-7296 | E-Mail: haukur.gudnason@testamericainc.com | | Page: Page 1 of 1 |
| Company: GZA GeoEnvironmental, Inc. | | | | Job #: 01.24065.19 |
| Address: 249 Vanderbilt Ave | Due Date Requested: | | | |
| City: Norwood | TAT Requested (days): | | | |
| State, Zip: MA, 02062 | | | | |
| Phone: 781-278-5734(Tel) 781-278-5701(Fax) | PO #: | | | |
| Email: james.roehrig@gza.com | WO #: | | | |
| Project Name: HP-San German IB | Project #: | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8260C - Site VOHs | 6310C - Total Organic Carbon | RSK_175 - MEE (Dissolved Gases) | 6010B - Dissolved Iron | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | A | S | A | D | | |
| TEMPERATURE BLANK | 4-12-17 | | G | W | | | | | | | | |
| TRIP BLANK | | | | | | | | | | | | |
| ~~BP MS~~ | | | | | | | | | | | | |
| GZ-519U | | 0655 | | | | | X | X | X | X | | |
| OW 101 | | 0805 | | | | | X | X | X | X | | |
| GZ-505R | | 1220 | | | | | X | X | X | X | | |
| OW-307 | | 1135 | | | | | X | X | X | X | | |
| WB-3L | | 1405 | | | | | X | | | | | |
| WB-3L MS/MSD | | 1405 | | | | | X | | | | | |
| WB-3L DUP | | 1405 | | | | | X | | | | | |
| WB-2U | | 1450 | | | | | X | | | | | |

Loc: 660
80120
660-80120 Chain of Custody

**Possible Hazard Identification**
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| Matthew Dion | 4-12-17 @ 1600 | | | 4/13/17 935 | |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No : | Cooler Temperature(s) °C and Other Remarks | 1.4 / 0.9 Cu-09 |
|---|---|---|---|

TestAmerica Tampa
6712 Benjamin Road Suite 100
Tampa, FL 33634
Phone (813) 885-7427 Fax (813) 885-7049

# Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

| | | | | |
|---|---|---|---|---|
| **Client Information (Sub Contract Lab)** | Sampler: | Lab PM: Gudnason, Haukur M | Carrier Tracking No(s): | COC No: 660-95744.1 |
| Client Contact: Shipping/Receiving | Phone: | E-Mail: haukur.gudnason@testamericainc.com | State of Origin: Puerto Rico | Page: Page 1 of 1 |
| Company: TestAmerica Laboratories, Inc. | | Accreditations Required (See note): NELAP - Florida | | Job #: 660-80120-1 |
| Address: 5102 LaRoche Avenue, | Due Date Requested: 5/1/2017 | | | |
| City: Savannah | TAT Requested (days): | | | |
| State, Zip: GA, 31404 | | | | |
| Phone: 912-354-7858(Tel) 912-352-0165(Fax) | PO #: | | | |
| Email: | WO #: | | | |
| Project Name: HP-San German IB | Project #: 66009297 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | RSK_175/ MEE (Dissolved Gases) | SM5310_TOC_B/ TOC | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | |
| Z-519U (660-80120-3) | 4/12/17 | 06:55 Atlantic | | Water | | | X | X | 6 | |
| W-101 (660-80120-4) | 4/12/17 | 08:05 Atlantic | | Water | | | X | X | 6 | |
| Z-505R (660-80120-5) | 4/12/17 | 12:20 Atlantic | | Water | | | X | X | 6 | |
| W-307 (660-80120-6) | 4/12/17 | 11:35 Atlantic | | Water | | | X | X | 6 | |

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

| | |
|---|---|
| *Possible Hazard Identification* *Unconfirmed* | *Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)* ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months* |
| Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4 | Special Instructions/QC Requirements: |

| | | | | | |
|---|---|---|---|---|---|
| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: | | |
| Relinquished by: | Date/Time: 4/13/17 1630 | Company: TAT | Received by: Jessica R Edwards | Date/Time: 4/14/17 1810 | Company: TASAV |
| Relinquished by: | Date/Time: | Company: | Received by: | Date/Time: | Company: |
| Relinquished by: | Date/Time: | Company: | Received by: | Date/Time: | Company: |
| Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | | Cooler Temperature(s) °C and Other Remarks: 1.6/1.7 | 0.4/0.5 | |

**TestAmerica Tampa**
6712 Benjamin Road Suite 100
Tampa, FL 33634
Phone (813) 885-7427

# Chain of Custody Record

TestAmerica

| Client Information | Sampler: Matthew Dion | Lab PM: Gudnason, Mark | Carrier Tracking No(s): | COC No |
|---|---|---|---|---|
| Client Contact: Mr. James Roehrig | Phone: 781-364-0519 and 603-325-7296 | E-Mail: haukur_gudnason@testamericainc.com | | Page: Page 1 of 2 |
| Company: GZA GeoEnvironmental, Inc. | | | | Job #: 01.24065.19 |
| Address: 249 Vanderbilt Ave | Due Date Requested: | | | |
| City: Norwood | TAT Requested (days): | | | |
| State, Zip: MA, 02062 | | | | |
| Phone: 781-278-5734(Tel) 781-278-5701(Fax) | PO #: | | | |
| Email: james.roehrig@gza.com | WO #: | | | |
| Project Name: HP-San German IB | Project #: | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8260C - Site VOHs | 5310C - Total Organic Carbon | RSK_175 - MEE (Dissolved Gases) | 6010B - Dissolved Iron | | | | | | | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | A | S | A | D | | | | | | | | |
| Temperature Blank | | | | | | | | | | | | | | | | | | |
| Trip Blank | 4-12-17 | ~~0625~~ 0630 | G | W | | | X | | | | | | | | | | | |
| Field Blank | | 0630 | | | | | X | | | | | | | | | | | |
| OW-304R | | 0755 | | | | | X | | | | | | | | | | | |
| Equipment Blank 1 | | 0740 | | | | | X | | | | | | | | | | | |
| GZ-701L | | 1005 | | | | | X | | | | | | | | | | | |
| Equipment Blank 2 | | 0805 | | | | | X | | | | | | | | | | | |
| GZ-702R | | 0935 | | | | | X | | | | | | | | | | | |
| GZ-601R | | 1020 | | | | | X | | | | | | | | | | | |
| GZ-505R DUP | | 1220 | | | | | X | | | | | | | | | | | |
| GZ-701R | | 1100 | | | | | X | | | | | | | | | | | |

Loc: 660
80121
660-80121 Chain of Custody

**Possible Hazard Identification**
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time | Company | Received by: | Date/Time | Company |
|---|---|---|---|---|---|
| Matthew Dion | 4-12-17 @1600 | | | 4/13/17 935 | |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 5.2/4.7 CU-09

**TestAmerica Tampa**
6712 Benjamin Road Suite 100
Tampa, FL 33634
Phone (813) 885-7427

# Chain of Custody Record

TestAmerica

| Client Information | Sampler: Matthew Dion | Lab PM: Gudnason, Mark | Carrier Tracking No(s): | COC No: |
|---|---|---|---|---|
| Client Contact: Mr. James Roehrig | Phone: 781-364-0519 and 603-325-7296 | E-Mail: haukur.gudnason@testamericainc.com | | Page: Page 2 of 2 |
| Company: GZA GeoEnvironmental, Inc. | | | | Job #: 01.24065.19 |
| Address: 249 Vanderbilt Ave | Due Date Requested: | | | |
| City: Norwood | TAT Requested (days): | | | |
| State, Zip: MA, 02062 | | | | |
| Phone: 781-278-5734(Tel) 781-278-5701(Fax) | PO #: | | | |
| Email: james.roehrig@gza.com | WO #: | | | |
| Project Name: HP-San German IB | Project #: | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**

| | |
|---|---|
| A - HCL | M - Hexane |
| B - NaOH | N - None |
| C - Zn Acetate | O - AsNaO2 |
| D - Nitric Acid | P - Na2O4S |
| E - NaHSO4 | Q - Na2SO3 |
| F - MeOH | R - Na2S2SO3 |
| G - Amchlor | S - H2SO4 |
| H - Ascorbic Acid | T - TSP Dodecahydrate |
| I - Ice | U - Acetone |
| J - DI Water | V - MCAA |
| K - EDTA | W - ph 4-5 |
| L - EDA | Z - other (specify) |

Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8260C - Site VOHs | 5310C - Total Organic Carbon | RSK_175 - MEE (Dissolved Gases) | 6010B - Dissolved Iron | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | X | X | A | S | A | D | X | |
| GZ-703R DUP | 4-12-17 | 1130 | G | W | | | X | | | | | |
| GZ-703R | ↓ | 1130 | ↓ | ↓ | | | X | | | | | |
| GZ-702U | ↓ | 0940 | ↓ | ↓ | | | X | | | | | |
| GZ-506R | ↓ | 0730 | ↓ | ↓ | | | X | X | X | X | | |
| OW-304L | ↓ | 0820 | ↓ | ↓ | | | X | X | X | X | | |

*Possible Hazard Identification*
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

*Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)*
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| Matthew Dion | | | [signature] | 4/13/17 935 | |
| | | | | | |
| | | | | | |

| Custody Seals Intact. Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks |
|---|---|---|
| | | 5.2/4.7 CU-09 |



06/21/2017

TestAmerica Tampa
6712 Benjamin Road Suite 100
Tampa, FL 33634
Phone (813) 885-7427 Fax (813) 885-7049

# Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

| | | | | |
|---|---|---|---|---|
| **Client Information (Sub Contract Lab)** | Sampler: | Lab PM: Gudnason, Haukur M | Carrier Tracking No(s): | COC No: 660-95744.1 |
| Client Contact: Shipping/Receiving | Phone: | E-Mail: haukur.gudnason@testamericainc.com | State of Origin: Puerto Rico | Page: Page 1 of 1 |
| Company: TestAmerica Laboratories, Inc. | | Accreditations Required (See note): NELAP - Florida | | Job #: 660-80121-1 |
| Address: 5102 LaRoche Avenue, | Due Date Requested: 5/1/2017 | | | |
| City: Savannah | TAT Requested (days): | | | |
| State, Zip: GA, 31404 | | | | |
| Phone: 912-354-7858(Tel) 912-352-0165(Fax) | PO #: | | | |
| Email: | WO #: | | | |
| Project Name: HP-San German IB | Project #: 66009297 | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

| Sample Identification - Client ID (Lab ID) | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | SM5310_TOC_B/ TOC | RSK_175/ MEE (Dissolved Gases) | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | | | | |
| SZ-506R (660-80121-15) | 4/12/17 | 07:30 Atlantic | | Water | | | X | X | 6 | |
| SZ-304L (660-80121-16) | 4/12/17 | 08:20 Atlantic | | Water | | | X | X | 6 | |

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

| | |
|---|---|
| ***Possible Hazard Identification*** *Unconfirmed* | ***Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months* |
| Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 4 | Special Instructions/QC Requirements: |

| | | | | | |
|---|---|---|---|---|---|
| Empty Kit Relinquished by: | Date: | Time: | | Method of Shipment: | |
| Relinquished by: | Date/Time: 4/13/17 1830 | Company: TAA | Received by: | Date/Time: 4/14/17 1810 | Company: TAA |
| Relinquished by: | Date/Time: | Company: | Received by: | Date/Time: | Company: |
| Relinquished by: | Date/Time: | Company: | Received by: | Date/Time: | Company: |
| Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | | Cooler Temperature(s) °C and Other Remarks: 1.6/1.7 | 0.4/0.5 | |

TestAmerica Tampa
6712 Benjamin Road Suite 100
Tampa, FL 33634
Phone (813) 885-7427

# Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

| Client Information | Sampler: Matthew Dion | Lab PM: Gudnason, Mark | Carrier Tracking No(s): | COC No: |
|---|---|---|---|---|
| Client Contact: Mr. James Roehrig | Phone: 781-364-0519 and 603-325-7296 | E-Mail: haukur.gudnason@testamericainc.com | | Page: Page 1 of 1 |
| Company: GZA GeoEnvironmental, Inc. | | | | Job #: 01.24065.19 |
| Address: 249 Vanderbilt Ave | Due Date Requested: | | | |
| City: Norwood | TAT Requested (days): | | | |
| State, Zip: MA, 02062 | | | | |
| Phone: 781-278-5734(Tel) 781-278-5701(Fax) | PO #: | | | |
| Email: james.roehrig@gza.com | WO #: | | | |
| Project Name: HP-San German IB | Project #: | | | |
| Site: | SSOW#: | | | |

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8260C - Site VOHs | 6310C - Total Organic Carbon | RSK_175 - MEE (Dissolved Gases) | 6010B - Dissolved Iron | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | A | S | A | D | | |
| Temperature Blank | | | | | | | | | | | | |
| Trip Blank | 4-13-17 | 0630 | G | W | | | X | | | | | |
| Field Blank | | 0645 | | | | | X | | | | | |
| Rinse Water 4 13.17 | | 1125 | | | | | X | | | | | |
| TW-3 | | 0150 | | | | | X | X | X | X | | |
| MW-4L | | 0905 | | | | | X | X | X | X | | |
| TW-2 | | 0920 | | | | | X | X | X | X | | |
| TW-1 | | 0945 | | | | | X | X | X | X | | |

Loc: 660 801146

660-80146 Chain of Custody

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements.

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: | | |
|---|---|---|---|---|---|
| Relinquished by: | Date/Time: 4-13-17 @ 1600 | Company | Received by: | Date/Time: 4/14/17 1040 | Company TA TPA |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 5.4/4.9 CW-09

# Login Sample Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Job Number: 660-80084-1

**Login Number: 80084**
**List Number: 1**
**Creator: Southers, Kristin B**

**List Source: TestAmerica Tampa**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | False | Refer to Job Narrative for details. |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

# Login Sample Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Job Number: 660-80084-1

**Login Number: 80084**
**List Number: 2**
**Creator: Edwards, Jessica R**

**List Source: TestAmerica Savannah**
**List Creation: 04/13/17 08:52 AM**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

# Login Sample Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Job Number: 660-80084-1

**Login Number: 80120**
**List Number: 1**
**Creator: Moccia, Vanessa M**

**List Source: TestAmerica Tampa**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | False | Refer to Job Narrative for details. |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

# Login Sample Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Job Number: 660-80084-1

**Login Number: 80120**
**List Number: 2**
**Creator: Edwards, Jessica R**

**List Source: TestAmerica Savannah**
**List Creation: 04/15/17 09:08 AM**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

# Login Sample Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Job Number: 660-80084-1

**Login Number: 80121**
**List Number: 1**
**Creator: Moccia, Vanessa M**

**List Source: TestAmerica Tampa**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | False | Refer to Job Narrative for details. |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

# Login Sample Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Job Number: 660-80084-1

**Login Number: 80121**
**List Number: 2**
**Creator: Edwards, Jessica R**

**List Source: TestAmerica Savannah**
**List Creation: 04/15/17 09:08 AM**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

# Login Sample Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Job Number: 660-80084-1

**Login Number: 80146**
**List Number: 1**
**Creator: Moccia, Vanessa M**

**List Source: TestAmerica Tampa**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | False | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

# Login Sample Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Job Number: 660-80084-1

**Login Number: 80146**
**List Number: 2**
**Creator: Edwards, Jessica R**

**List Source: TestAmerica Savannah**
**List Creation: 04/15/17 09:22 AM**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | N/A | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

Daliz Estades Santaliz

Licensed Chemist

To Whom It May Concern:

I, Daliz M. Estades Santaliz, in my capacity as Puerto Rico Certified Chemist, hereby certify the attached Analytical Results from Project HP-San German IB and Laboratory ID Numbers:

660-81492-2
660-81492-3
660-81492-4
660-81492-5
660-81492-6
660-81492-7
660-81492-8
660-81492-9

ESTADO LIBRE ASOCIADO DE PUERTO RICO
Daliz M. Estades Santaliz
A 1631404
Lic. 4026
QUÍMICO LICENCIADO

Lcda. Daliz M. Estades Santaliz

PO Box 727
Dorado, PR 00646-0727

# ANALYTICAL REPORT

Job Number: 660-81492-1

Job Description: HP-San German IB

For:
GZA GeoEnvironmental, Inc.
249 Vanderbilt Ave
Norwood, MA 02062

Attention: Mr. James Roehrig

Approved for release.
Haukur M Gudnason
Project Manager II
7/11/2017 3:43 PM

Haukur M Gudnason, Project Manager II
6712 Benjamin Road, Tampa, FL, 33634
(813)280-8342
haukur.gudnason@testamericainc.com
07/11/2017

Methods: FDEP, DOH Certification #: E84282, E81005 These test results meet all the requirements of NELAC unless specified in the case narrative. All questions regarding this test report should be directed to the TestAmerica Project Manager who signed this test report. The estimated uncertainty associated with these reported results is available upon request. The results contained in this test report relate only to these samples included herein.

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## Qualifiers

### GC/MS VOA

| Qualifier | Qualifier Description |
|---|---|
| * | RPD of the LCS and LCSD exceeds the control limits |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

**Job Narrative**
**660-81492-1**

**Comments**
No additional comments.

**Receipt**
The samples were received on 6/28/2017 7:44 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.5º C.

**GC/MS VOA**
Method(s) 8260B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch analytical batch 660-184646 recovered outside control limits for the following analytes: Dichlorodifluoromethane.

Method(s) 8260B: The following sample was diluted to bring the concentration of target analytes within the calibration range: OW-304L. Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Client Sample ID: Trip Blank — Lab Sample ID: 660-81492-2

No Detections.

## Client Sample ID: Field Blank — Lab Sample ID: 660-81492-3

No Detections.

## Client Sample ID: GZ-505R — Lab Sample ID: 660-81492-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 1.4 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene | 79 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Tetrachloroethene | 2.8 | | 1.0 | 0.50 | ug/L | 1 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 1.4 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 1.5 | | 1.0 | 0.71 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene - DL | 120 | | 10 | 6.1 | ug/L | 10 | | 8260B | Total/NA |

## Client Sample ID: GZ-701R — Lab Sample ID: 660-81492-5

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 1.2 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 3.9 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: GZ-702R — Lab Sample ID: 660-81492-6

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 42 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 17 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |

## Client Sample ID: GZ-703R — Lab Sample ID: 660-81492-7

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 1.7 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene | 39 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |
| Tetrachloroethene | 1.5 | | 1.0 | 0.50 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene - DL | 120 | | 10 | 6.1 | ug/L | 10 | | 8260B | Total/NA |

## Client Sample ID: OW-304L — Lab Sample ID: 660-81492-8

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethane | 3.9 | | 2.0 | 1.0 | ug/L | 2 | | 8260B | Total/NA |
| 1,1-Dichloroethene | 3.5 | | 2.0 | 1.3 | ug/L | 2 | | 8260B | Total/NA |
| Tetrachloroethene | 1.0 | J | 2.0 | 1.0 | ug/L | 2 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 1.7 | J | 2.0 | 1.3 | ug/L | 2 | | 8260B | Total/NA |
| Vinyl chloride | 16 | | 2.0 | 1.4 | ug/L | 2 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene - DL | 260 | | 20 | 13 | ug/L | 20 | | 8260B | Total/NA |
| Trichloroethene - DL | 590 | | 20 | 12 | ug/L | 20 | | 8260B | Total/NA |

## Client Sample ID: WB-3L — Lab Sample ID: 660-81492-9

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 0.97 | J | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| cis-1,2-Dichloroethylene | 94 | | 1.0 | 0.65 | ug/L | 1 | | 8260B | Total/NA |

This Detection Summary does not include radiochemical test results.

# Detection Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Client Sample ID: WB-3L (Continued) — Lab Sample ID: 660-81492-9

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethene | 5.3 | | 1.0 | 0.50 | ug/L | 1 | | 8260B | Total/NA |
| trans-1,2-Dichloroethene | 3.9 | | 1.0 | 0.67 | ug/L | 1 | | 8260B | Total/NA |
| Trichloroethene | 70 | | 1.0 | 0.61 | ug/L | 1 | | 8260B | Total/NA |
| Vinyl chloride | 4.1 | | 1.0 | 0.71 | ug/L | 1 | | 8260B | Total/NA |

This Detection Summary does not include radiochemical test results.

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Client Sample ID: Trip Blank

**Lab Sample ID: 660-81492-2**

**Date Collected: 06/26/17 09:25**
**Matrix: Water**
**Date Received: 06/28/17 07:44**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 14:44 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 14:44 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 06/30/17 14:44 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 14:44 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 14:44 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 06/30/17 14:44 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 06/30/17 14:44 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 06/30/17 14:44 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 06/30/17 14:44 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 14:44 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 06/30/17 14:44 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 06/30/17 14:44 | 1 |
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 06/30/17 14:44 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 14:44 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 14:44 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 06/30/17 14:44 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 14:44 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 14:44 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 06/30/17 14:44 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 06/30/17 14:44 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 06/30/17 14:44 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 06/30/17 14:44 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 06/30/17 14:44 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 06/30/17 14:44 | 1 |
| Dichlorodifluoromethane | <5.0 | * | 5.0 | 2.5 | ug/L | | | 06/30/17 14:44 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 06/30/17 14:44 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 06/30/17 14:44 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 06/30/17 14:44 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 06/30/17 14:44 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 06/30/17 14:44 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 14:44 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 06/30/17 14:44 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *100* | | *70 - 119* | | *06/30/17 14:44* | *1* |
| *Dibromofluoromethane* | *103* | | *83 - 123* | | *06/30/17 14:44* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *78 - 126* | | *06/30/17 14:44* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Client Sample ID: Field Blank

**Lab Sample ID: 660-81492-3**

**Date Collected: 06/26/17 09:30**
**Matrix: Water**
**Date Received: 06/28/17 07:44**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 15:03 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 15:03 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 06/30/17 15:03 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 15:03 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 15:03 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 06/30/17 15:03 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 06/30/17 15:03 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 06/30/17 15:03 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 06/30/17 15:03 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 15:03 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 06/30/17 15:03 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 06/30/17 15:03 | 1 |
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 06/30/17 15:03 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 15:03 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 15:03 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 06/30/17 15:03 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 15:03 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 15:03 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 06/30/17 15:03 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 06/30/17 15:03 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 06/30/17 15:03 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 06/30/17 15:03 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 06/30/17 15:03 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 06/30/17 15:03 | 1 |
| Dichlorodifluoromethane | <5.0 | * | 5.0 | 2.5 | ug/L | | | 06/30/17 15:03 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 06/30/17 15:03 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 06/30/17 15:03 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 06/30/17 15:03 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 06/30/17 15:03 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 06/30/17 15:03 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 15:03 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 06/30/17 15:03 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *100* | | *70 - 119* | | *06/30/17 15:03* | *1* |
| *Dibromofluoromethane* | *102* | | *83 - 123* | | *06/30/17 15:03* | *1* |
| *Toluene-d8 (Surr)* | *102* | | *78 - 126* | | *06/30/17 15:03* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Client Sample ID: GZ-505R

**Date Collected: 06/27/17 08:20**
**Date Received: 06/28/17 07:44**

## Lab Sample ID: 660-81492-4

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 16:57 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 16:57 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 06/30/17 16:57 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 16:57 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 16:57 | 1 |
| **1,1-Dichloroethene** | **1.4** | | 1.0 | 0.67 | ug/L | | | 06/30/17 16:57 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 06/30/17 16:57 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 06/30/17 16:57 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 06/30/17 16:57 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 16:57 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 06/30/17 16:57 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 06/30/17 16:57 | 1 |
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 06/30/17 16:57 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 16:57 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 16:57 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 06/30/17 16:57 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 16:57 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 16:57 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 06/30/17 16:57 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 06/30/17 16:57 | 1 |
| **cis-1,2-Dichloroethylene** | **79** | | 1.0 | 0.65 | ug/L | | | 06/30/17 16:57 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 06/30/17 16:57 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 06/30/17 16:57 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 06/30/17 16:57 | 1 |
| Dichlorodifluoromethane | <5.0 | * | 5.0 | 2.5 | ug/L | | | 06/30/17 16:57 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 06/30/17 16:57 | 1 |
| **Tetrachloroethene** | **2.8** | | 1.0 | 0.50 | ug/L | | | 06/30/17 16:57 | 1 |
| **trans-1,2-Dichloroethene** | **1.4** | | 1.0 | 0.67 | ug/L | | | 06/30/17 16:57 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 06/30/17 16:57 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 16:57 | 1 |
| **Vinyl chloride** | **1.5** | | 1.0 | 0.71 | ug/L | | | 06/30/17 16:57 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | | *70 - 119* | | *06/30/17 16:57* | *1* |
| *Dibromofluoromethane* | *102* | | *83 - 123* | | *06/30/17 16:57* | *1* |
| *Toluene-d8 (Surr)* | *103* | | *78 - 126* | | *06/30/17 16:57* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Trichloroethene** | **120** | | 10 | 6.1 | ug/L | | | 06/30/17 15:22 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *101* | | *70 - 119* | | *06/30/17 15:22* | *10* |
| *Dibromofluoromethane* | *102* | | *83 - 123* | | *06/30/17 15:22* | *10* |
| *Toluene-d8 (Surr)* | *102* | | *78 - 126* | | *06/30/17 15:22* | *10* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Client Sample ID: GZ-701R

**Date Collected: 06/26/17 16:15**
**Date Received: 06/28/17 07:44**

## Lab Sample ID: 660-81492-5

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 12:19 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 12:19 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 06/30/17 12:19 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 12:19 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 12:19 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 06/30/17 12:19 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 06/30/17 12:19 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 06/30/17 12:19 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 06/30/17 12:19 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 12:19 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 06/30/17 12:19 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 06/30/17 12:19 | 1 |
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 06/30/17 12:19 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 12:19 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 12:19 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 06/30/17 12:19 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 12:19 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 12:19 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 06/30/17 12:19 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 06/30/17 12:19 | 1 |
| **cis-1,2-Dichloroethylene** | **1.2** | | 1.0 | 0.65 | ug/L | | | 06/30/17 12:19 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 06/30/17 12:19 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 06/30/17 12:19 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 06/30/17 12:19 | 1 |
| Dichlorodifluoromethane | <5.0 | * | 5.0 | 2.5 | ug/L | | | 06/30/17 12:19 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 06/30/17 12:19 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 06/30/17 12:19 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 06/30/17 12:19 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 06/30/17 12:19 | 1 |
| **Trichloroethene** | **3.9** | | 1.0 | 0.61 | ug/L | | | 06/30/17 12:19 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 12:19 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 06/30/17 12:19 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 119* | | *06/30/17 12:19* | *1* |
| *Dibromofluoromethane* | *103* | | *83 - 123* | | *06/30/17 12:19* | *1* |
| *Toluene-d8 (Surr)* | *102* | | *78 - 126* | | *06/30/17 12:19* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Client Sample ID: GZ-702R

**Date Collected: 06/26/17 14:45**
**Date Received: 06/28/17 07:44**

## Lab Sample ID: 660-81492-6

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 12:38 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 12:38 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 06/30/17 12:38 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 12:38 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 12:38 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 06/30/17 12:38 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 06/30/17 12:38 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 06/30/17 12:38 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 06/30/17 12:38 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 12:38 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 06/30/17 12:38 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 06/30/17 12:38 | 1 |
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 06/30/17 12:38 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 12:38 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 12:38 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 06/30/17 12:38 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 12:38 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 12:38 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 06/30/17 12:38 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 06/30/17 12:38 | 1 |
| **cis-1,2-Dichloroethylene** | **42** | | 1.0 | 0.65 | ug/L | | | 06/30/17 12:38 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 06/30/17 12:38 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 06/30/17 12:38 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 06/30/17 12:38 | 1 |
| Dichlorodifluoromethane | <5.0 | * | 5.0 | 2.5 | ug/L | | | 06/30/17 12:38 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 06/30/17 12:38 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 06/30/17 12:38 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 06/30/17 12:38 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 06/30/17 12:38 | 1 |
| **Trichloroethene** | **17** | | 1.0 | 0.61 | ug/L | | | 06/30/17 12:38 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 12:38 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 06/30/17 12:38 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *97* | | *70 - 119* | | *06/30/17 12:38* | *1* |
| *Dibromofluoromethane* | *102* | | *83 - 123* | | *06/30/17 12:38* | *1* |
| *Toluene-d8 (Surr)* | *101* | | *78 - 126* | | *06/30/17 12:38* | *1* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Client Sample ID: GZ-703R

**Date Collected: 06/26/17 12:30**
**Date Received: 06/28/17 07:44**

## Lab Sample ID: 660-81492-7

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 17:16 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 17:16 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 06/30/17 17:16 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 17:16 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 17:16 | 1 |
| **1,1-Dichloroethene** | **1.7** | | 1.0 | 0.67 | ug/L | | | 06/30/17 17:16 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 06/30/17 17:16 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 06/30/17 17:16 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 06/30/17 17:16 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 17:16 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 06/30/17 17:16 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 06/30/17 17:16 | 1 |
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 06/30/17 17:16 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 17:16 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 17:16 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 06/30/17 17:16 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 17:16 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 17:16 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 06/30/17 17:16 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 06/30/17 17:16 | 1 |
| **cis-1,2-Dichloroethylene** | **39** | | 1.0 | 0.65 | ug/L | | | 06/30/17 17:16 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 06/30/17 17:16 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 06/30/17 17:16 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 06/30/17 17:16 | 1 |
| Dichlorodifluoromethane | <5.0 | * | 5.0 | 2.5 | ug/L | | | 06/30/17 17:16 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 06/30/17 17:16 | 1 |
| **Tetrachloroethene** | **1.5** | | 1.0 | 0.50 | ug/L | | | 06/30/17 17:16 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 06/30/17 17:16 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 06/30/17 17:16 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 17:16 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 06/30/17 17:16 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | | *70 - 119* | | *06/30/17 17:16* | *1* |
| *Dibromofluoromethane* | *102* | | *83 - 123* | | *06/30/17 17:16* | *1* |
| *Toluene-d8 (Surr)* | *102* | | *78 - 126* | | *06/30/17 17:16* | *1* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Trichloroethene** | **120** | | 10 | 6.1 | ug/L | | | 06/30/17 15:41 | 10 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *101* | | *70 - 119* | | *06/30/17 15:41* | *10* |
| *Dibromofluoromethane* | *104* | | *83 - 123* | | *06/30/17 15:41* | *10* |
| *Toluene-d8 (Surr)* | *102* | | *78 - 126* | | *06/30/17 15:41* | *10* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Client Sample ID: OW-304L

**Date Collected: 06/26/17 13:00**
**Date Received: 06/28/17 07:44**

## Lab Sample ID: 660-81492-8

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | <2.0 | | 2.0 | 1.3 | ug/L | | | 06/30/17 17:35 | 2 |
| 1,1,1-Trichloroethane | <2.0 | | 2.0 | 0.94 | ug/L | | | 06/30/17 17:35 | 2 |
| 1,1,2,2-Tetrachloroethane | <2.0 | | 2.0 | 0.34 | ug/L | | | 06/30/17 17:35 | 2 |
| 1,1,2-Trichloroethane | <2.0 | | 2.0 | 0.94 | ug/L | | | 06/30/17 17:35 | 2 |
| **1,1-Dichloroethane** | **3.9** | | 2.0 | 1.0 | ug/L | | | 06/30/17 17:35 | 2 |
| **1,1-Dichloroethene** | **3.5** | | 2.0 | 1.3 | ug/L | | | 06/30/17 17:35 | 2 |
| 1,2,3-Trichloropropane | <2.0 | | 2.0 | 0.88 | ug/L | | | 06/30/17 17:35 | 2 |
| 1,2-Dichlorobenzene | <2.0 | | 2.0 | 0.98 | ug/L | | | 06/30/17 17:35 | 2 |
| 1,2-Dichloroethane | <2.0 | | 2.0 | 1.1 | ug/L | | | 06/30/17 17:35 | 2 |
| 1,2-Dichloropropane | <2.0 | | 2.0 | 1.0 | ug/L | | | 06/30/17 17:35 | 2 |
| 1,3-Dichlorobenzene | <2.0 | | 2.0 | 1.3 | ug/L | | | 06/30/17 17:35 | 2 |
| 1,4-Dichlorobenzene | <2.0 | | 2.0 | 1.2 | ug/L | | | 06/30/17 17:35 | 2 |
| Bromobenzene | <2.0 | | 2.0 | 1.2 | ug/L | | | 06/30/17 17:35 | 2 |
| Bromoform | <2.0 | | 2.0 | 1.3 | ug/L | | | 06/30/17 17:35 | 2 |
| Bromomethane | <10 | | 10 | 5.0 | ug/L | | | 06/30/17 17:35 | 2 |
| Carbon tetrachloride | <2.0 | | 2.0 | 0.86 | ug/L | | | 06/30/17 17:35 | 2 |
| Chlorobenzene | <2.0 | | 2.0 | 1.3 | ug/L | | | 06/30/17 17:35 | 2 |
| Chloroethane | <10 | | 10 | 5.0 | ug/L | | | 06/30/17 17:35 | 2 |
| Chloroform | <2.0 | | 2.0 | 1.8 | ug/L | | | 06/30/17 17:35 | 2 |
| Chloromethane | <8.0 | | 8.0 | 2.0 | ug/L | | | 06/30/17 17:35 | 2 |
| cis-1,3-Dichloropropene | <2.0 | | 2.0 | 0.78 | ug/L | | | 06/30/17 17:35 | 2 |
| Dibromochloromethane | <2.0 | | 2.0 | 0.62 | ug/L | | | 06/30/17 17:35 | 2 |
| Dibromomethane | <2.0 | | 2.0 | 0.92 | ug/L | | | 06/30/17 17:35 | 2 |
| Dichlorodifluoromethane | <10 | * | 10 | 5.0 | ug/L | | | 06/30/17 17:35 | 2 |
| Methylene Chloride | <20 | | 20 | 10 | ug/L | | | 06/30/17 17:35 | 2 |
| **Tetrachloroethene** | **1.0** | **J** | 2.0 | 1.0 | ug/L | | | 06/30/17 17:35 | 2 |
| **trans-1,2-Dichloroethene** | **1.7** | **J** | 2.0 | 1.3 | ug/L | | | 06/30/17 17:35 | 2 |
| trans-1,3-Dichloropropene | <2.0 | | 2.0 | 0.54 | ug/L | | | 06/30/17 17:35 | 2 |
| Trichlorofluoromethane | <10 | | 10 | 5.0 | ug/L | | | 06/30/17 17:35 | 2 |
| **Vinyl chloride** | **16** | | 2.0 | 1.4 | ug/L | | | 06/30/17 17:35 | 2 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | | *70 - 119* | | *06/30/17 17:35* | *2* |
| *Dibromofluoromethane* | *101* | | *83 - 123* | | *06/30/17 17:35* | *2* |
| *Toluene-d8 (Surr)* | *103* | | *78 - 126* | | *06/30/17 17:35* | *2* |

### Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **cis-1,2-Dichloroethylene** | **260** | | 20 | 13 | ug/L | | | 06/30/17 16:00 | 20 |
| **Trichloroethene** | **590** | | 20 | 12 | ug/L | | | 06/30/17 16:00 | 20 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *98* | | *70 - 119* | | *06/30/17 16:00* | *20* |
| *Dibromofluoromethane* | *104* | | *83 - 123* | | *06/30/17 16:00* | *20* |
| *Toluene-d8 (Surr)* | *103* | | *78 - 126* | | *06/30/17 16:00* | *20* |

# Client Sample Results

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Client Sample ID: WB-3L

**Date Collected: 06/27/17 08:45**
**Date Received: 06/28/17 07:44**

## Lab Sample ID: 660-81492-9

**Matrix: Water**

### Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 16:38 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 16:38 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 06/30/17 16:38 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 16:38 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 16:38 | 1 |
| **1,1-Dichloroethene** | **0.97** | **J** | 1.0 | 0.67 | ug/L | | | 06/30/17 16:38 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 06/30/17 16:38 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 06/30/17 16:38 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 06/30/17 16:38 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 16:38 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 06/30/17 16:38 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 06/30/17 16:38 | 1 |
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 06/30/17 16:38 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 16:38 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 16:38 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 06/30/17 16:38 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 16:38 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 16:38 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 06/30/17 16:38 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 06/30/17 16:38 | 1 |
| **cis-1,2-Dichloroethylene** | **94** | | 1.0 | 0.65 | ug/L | | | 06/30/17 16:38 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 06/30/17 16:38 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 06/30/17 16:38 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 06/30/17 16:38 | 1 |
| Dichlorodifluoromethane | <5.0 | * | 5.0 | 2.5 | ug/L | | | 06/30/17 16:38 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 06/30/17 16:38 | 1 |
| **Tetrachloroethene** | **5.3** | | 1.0 | 0.50 | ug/L | | | 06/30/17 16:38 | 1 |
| **trans-1,2-Dichloroethene** | **3.9** | | 1.0 | 0.67 | ug/L | | | 06/30/17 16:38 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 06/30/17 16:38 | 1 |
| **Trichloroethene** | **70** | | 1.0 | 0.61 | ug/L | | | 06/30/17 16:38 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 16:38 | 1 |
| **Vinyl chloride** | **4.1** | | 1.0 | 0.71 | ug/L | | | 06/30/17 16:38 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *100* | | *70 - 119* | | *06/30/17 16:38* | *1* |
| *Dibromofluoromethane* | *101* | | *83 - 123* | | *06/30/17 16:38* | *1* |
| *Toluene-d8 (Surr)* | *103* | | *78 - 126* | | *06/30/17 16:38* | *1* |

# Default Detection Limits

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

| Analyte | RL | MDL | Units | Method |
|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 1.0 | 0.63 | ug/L | 8260B |
| 1,1,1-Trichloroethane | 1.0 | 0.47 | ug/L | 8260B |
| 1,1,2,2-Tetrachloroethane | 1.0 | 0.17 | ug/L | 8260B |
| 1,1,2-Trichloroethane | 1.0 | 0.47 | ug/L | 8260B |
| 1,1-Dichloroethane | 1.0 | 0.52 | ug/L | 8260B |
| 1,1-Dichloroethene | 1.0 | 0.67 | ug/L | 8260B |
| 1,2,3-Trichloropropane | 1.0 | 0.44 | ug/L | 8260B |
| 1,2-Dichlorobenzene | 1.0 | 0.49 | ug/L | 8260B |
| 1,2-Dichloroethane | 1.0 | 0.57 | ug/L | 8260B |
| 1,2-Dichloropropane | 1.0 | 0.52 | ug/L | 8260B |
| 1,3-Dichlorobenzene | 1.0 | 0.64 | ug/L | 8260B |
| 1,4-Dichlorobenzene | 1.0 | 0.60 | ug/L | 8260B |
| Bromobenzene | 1.0 | 0.58 | ug/L | 8260B |
| Bromoform | 1.0 | 0.63 | ug/L | 8260B |
| Bromomethane | 5.0 | 2.5 | ug/L | 8260B |
| Carbon tetrachloride | 1.0 | 0.43 | ug/L | 8260B |
| Chlorobenzene | 1.0 | 0.63 | ug/L | 8260B |
| Chloroethane | 5.0 | 2.5 | ug/L | 8260B |
| Chloroform | 1.0 | 0.90 | ug/L | 8260B |
| Chloromethane | 4.0 | 1.0 | ug/L | 8260B |
| cis-1,2-Dichloroethylene | 1.0 | 0.65 | ug/L | 8260B |
| cis-1,3-Dichloropropene | 1.0 | 0.39 | ug/L | 8260B |
| Dibromochloromethane | 1.0 | 0.31 | ug/L | 8260B |
| Dibromomethane | 1.0 | 0.46 | ug/L | 8260B |
| Dichlorodifluoromethane | 5.0 | 2.5 | ug/L | 8260B |
| Methylene Chloride | 10 | 5.0 | ug/L | 8260B |
| Tetrachloroethene | 1.0 | 0.50 | ug/L | 8260B |
| trans-1,2-Dichloroethene | 1.0 | 0.67 | ug/L | 8260B |
| trans-1,3-Dichloropropene | 1.0 | 0.27 | ug/L | 8260B |
| Trichloroethene | 1.0 | 0.61 | ug/L | 8260B |
| Trichlorofluoromethane | 5.0 | 2.5 | ug/L | 8260B |
| Vinyl chloride | 1.0 | 0.71 | ug/L | 8260B |

# Surrogate Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Matrix: Water** **Prep Type: Total/NA**

| | | Percent Surrogate Recovery (Acceptance Limits) | | |
|---|---|---|---|---|
| | | BFB | DBFM | TOL |
| **Lab Sample ID** | **Client Sample ID** | **(70-119)** | **(83-123)** | **(78-126)** |
| 660-81492-2 | Trip Blank | 100 | 103 | 101 |
| 660-81492-3 | Field Blank | 100 | 102 | 102 |
| 660-81492-4 - DL | GZ-505R | 101 | 102 | 102 |
| 660-81492-4 | GZ-505R | 99 | 102 | 103 |
| 660-81492-5 | GZ-701R | 98 | 103 | 102 |
| 660-81492-5 MS | GZ-701R | 104 | 101 | 101 |
| 660-81492-6 | GZ-702R | 97 | 102 | 101 |
| 660-81492-6 DU | GZ-702R | 100 | 100 | 101 |
| 660-81492-7 - DL | GZ-703R | 101 | 104 | 102 |
| 660-81492-7 | GZ-703R | 99 | 102 | 102 |
| 660-81492-8 - DL | OW-304L | 98 | 104 | 103 |
| 660-81492-8 | OW-304L | 99 | 101 | 103 |
| 660-81492-9 | WB-3L | 100 | 101 | 103 |
| LCS 660-184646/4 | Lab Control Sample | 101 | 100 | 101 |
| LCSD 660-184646/5 | Lab Control Sample Dup | 102 | 102 | 101 |
| MB 660-184646/7 | Method Blank | 99 | 104 | 102 |

**Surrogate Legend**

BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

## Method: 8260B - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 660-184646/7**
**Matrix: Water**
**Analysis Batch: 184646**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 11:43 | 1 |
| 1,1,1-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 11:43 | 1 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 1.0 | 0.17 | ug/L | | | 06/30/17 11:43 | 1 |
| 1,1,2-Trichloroethane | <1.0 | | 1.0 | 0.47 | ug/L | | | 06/30/17 11:43 | 1 |
| 1,1-Dichloroethane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 11:43 | 1 |
| 1,1-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 06/30/17 11:43 | 1 |
| 1,2,3-Trichloropropane | <1.0 | | 1.0 | 0.44 | ug/L | | | 06/30/17 11:43 | 1 |
| 1,2-Dichlorobenzene | <1.0 | | 1.0 | 0.49 | ug/L | | | 06/30/17 11:43 | 1 |
| 1,2-Dichloroethane | <1.0 | | 1.0 | 0.57 | ug/L | | | 06/30/17 11:43 | 1 |
| 1,2-Dichloropropane | <1.0 | | 1.0 | 0.52 | ug/L | | | 06/30/17 11:43 | 1 |
| 1,3-Dichlorobenzene | <1.0 | | 1.0 | 0.64 | ug/L | | | 06/30/17 11:43 | 1 |
| 1,4-Dichlorobenzene | <1.0 | | 1.0 | 0.60 | ug/L | | | 06/30/17 11:43 | 1 |
| Bromobenzene | <1.0 | | 1.0 | 0.58 | ug/L | | | 06/30/17 11:43 | 1 |
| Bromoform | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 11:43 | 1 |
| Bromomethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 11:43 | 1 |
| Carbon tetrachloride | <1.0 | | 1.0 | 0.43 | ug/L | | | 06/30/17 11:43 | 1 |
| Chlorobenzene | <1.0 | | 1.0 | 0.63 | ug/L | | | 06/30/17 11:43 | 1 |
| Chloroethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 11:43 | 1 |
| Chloroform | <1.0 | | 1.0 | 0.90 | ug/L | | | 06/30/17 11:43 | 1 |
| Chloromethane | <4.0 | | 4.0 | 1.0 | ug/L | | | 06/30/17 11:43 | 1 |
| cis-1,2-Dichloroethylene | <1.0 | | 1.0 | 0.65 | ug/L | | | 06/30/17 11:43 | 1 |
| cis-1,3-Dichloropropene | <1.0 | | 1.0 | 0.39 | ug/L | | | 06/30/17 11:43 | 1 |
| Dibromochloromethane | <1.0 | | 1.0 | 0.31 | ug/L | | | 06/30/17 11:43 | 1 |
| Dibromomethane | <1.0 | | 1.0 | 0.46 | ug/L | | | 06/30/17 11:43 | 1 |
| Dichlorodifluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 11:43 | 1 |
| Methylene Chloride | <10 | | 10 | 5.0 | ug/L | | | 06/30/17 11:43 | 1 |
| Tetrachloroethene | <1.0 | | 1.0 | 0.50 | ug/L | | | 06/30/17 11:43 | 1 |
| trans-1,2-Dichloroethene | <1.0 | | 1.0 | 0.67 | ug/L | | | 06/30/17 11:43 | 1 |
| trans-1,3-Dichloropropene | <1.0 | | 1.0 | 0.27 | ug/L | | | 06/30/17 11:43 | 1 |
| Trichloroethene | <1.0 | | 1.0 | 0.61 | ug/L | | | 06/30/17 11:43 | 1 |
| Trichlorofluoromethane | <5.0 | | 5.0 | 2.5 | ug/L | | | 06/30/17 11:43 | 1 |
| Vinyl chloride | <1.0 | | 1.0 | 0.71 | ug/L | | | 06/30/17 11:43 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *99* | | *70 - 119* | | *06/30/17 11:43* | *1* |
| *Dibromofluoromethane* | *104* | | *83 - 123* | | *06/30/17 11:43* | *1* |
| *Toluene-d8 (Surr)* | *102* | | *78 - 126* | | *06/30/17 11:43* | *1* |

**Lab Sample ID: LCS 660-184646/4**
**Matrix: Water**
**Analysis Batch: 184646**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 10.0 | 10.1 | | ug/L | | 101 | 60 - 134 |
| 1,1,1-Trichloroethane | 10.0 | 9.82 | | ug/L | | 98 | 58 - 136 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 10.2 | | ug/L | | 102 | 63 - 148 |
| 1,1,2-Trichloroethane | 10.0 | 10.3 | | ug/L | | 103 | 60 - 140 |
| 1,1-Dichloroethane | 10.0 | 11.1 | | ug/L | | 111 | 54 - 132 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 660-184646/4** — **Client Sample ID: Lab Control Sample**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 184646**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 10.0 | 9.37 | | ug/L | | 94 | 43 - 118 |
| 1,2,3-Trichloropropane | 10.0 | 9.88 | | ug/L | | 99 | 51 - 171 |
| 1,2-Dichlorobenzene | 10.0 | 10.1 | | ug/L | | 101 | 60 - 154 |
| 1,2-Dichloroethane | 10.0 | 10.4 | | ug/L | | 104 | 51 - 167 |
| 1,2-Dichloropropane | 10.0 | 10.9 | | ug/L | | 109 | 60 - 138 |
| 1,3-Dichlorobenzene | 10.0 | 10.1 | | ug/L | | 101 | 55 - 147 |
| 1,4-Dichlorobenzene | 10.0 | 10.1 | | ug/L | | 101 | 58 - 151 |
| Bromobenzene | 10.0 | 9.80 | | ug/L | | 98 | 58 - 151 |
| Bromoform | 10.0 | 8.85 | | ug/L | | 88 | 62 - 140 |
| Bromomethane | 10.0 | 6.30 | | ug/L | | 63 | 22 - 179 |
| Carbon tetrachloride | 10.0 | 9.13 | | ug/L | | 91 | 53 - 134 |
| Chlorobenzene | 10.0 | 9.93 | | ug/L | | 99 | 63 - 132 |
| Chloroethane | 10.0 | 11.6 | | ug/L | | 116 | 53 - 144 |
| Chloroform | 10.0 | 10.4 | | ug/L | | 104 | 60 - 126 |
| Chloromethane | 10.0 | 10.3 | | ug/L | | 103 | 62 - 130 |
| cis-1,2-Dichloroethylene | 10.0 | 10.8 | | ug/L | | 108 | 49 - 127 |
| cis-1,3-Dichloropropene | 10.0 | 10.4 | | ug/L | | 104 | 49 - 141 |
| Dibromochloromethane | 10.0 | 10.1 | | ug/L | | 101 | 55 - 134 |
| Dibromomethane | 10.0 | 10.1 | | ug/L | | 101 | 62 - 141 |
| Dichlorodifluoromethane | 10.0 | 6.05 | | ug/L | | 61 | 28 - 133 |
| Methylene Chloride | 10.0 | 11.6 | | ug/L | | 116 | 52 - 132 |
| Tetrachloroethene | 10.0 | 9.50 | | ug/L | | 95 | 48 - 136 |
| trans-1,2-Dichloroethene | 10.0 | 10.6 | | ug/L | | 106 | 46 - 125 |
| trans-1,3-Dichloropropene | 10.0 | 9.63 | | ug/L | | 96 | 52 - 140 |
| Trichloroethene | 10.0 | 9.82 | | ug/L | | 98 | 59 - 129 |
| Trichlorofluoromethane | 10.0 | 7.92 | | ug/L | | 79 | 62 - 138 |
| Vinyl chloride | 10.0 | 8.50 | | ug/L | | 85 | 66 - 121 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *101* | | *70 - 119* |
| *Dibromofluoromethane* | *100* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *101* | | *78 - 126* |

**Lab Sample ID: LCSD 660-184646/5** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 184646**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 10.0 | 9.99 | | ug/L | | 100 | 60 - 134 | 1 | 26 |
| 1,1,1-Trichloroethane | 10.0 | 10.3 | | ug/L | | 103 | 58 - 136 | 4 | 21 |
| 1,1,2,2-Tetrachloroethane | 10.0 | 9.34 | | ug/L | | 93 | 63 - 148 | 9 | 22 |
| 1,1,2-Trichloroethane | 10.0 | 10.1 | | ug/L | | 101 | 60 - 140 | 2 | 22 |
| 1,1-Dichloroethane | 10.0 | 11.0 | | ug/L | | 110 | 54 - 132 | 1 | 30 |
| 1,1-Dichloroethene | 10.0 | 9.85 | | ug/L | | 99 | 43 - 118 | 5 | 29 |
| 1,2,3-Trichloropropane | 10.0 | 9.59 | | ug/L | | 96 | 51 - 171 | 3 | 32 |
| 1,2-Dichlorobenzene | 10.0 | 9.33 | | ug/L | | 93 | 60 - 154 | 8 | 22 |
| 1,2-Dichloroethane | 10.0 | 9.91 | | ug/L | | 99 | 51 - 167 | 5 | 28 |
| 1,2-Dichloropropane | 10.0 | 10.5 | | ug/L | | 105 | 60 - 138 | 5 | 20 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCSD 660-184646/5**
**Matrix: Water**
**Analysis Batch: 184646**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| 1,3-Dichlorobenzene | 10.0 | 9.69 | | ug/L | | 97 | 55 - 147 | 4 | 21 |
| 1,4-Dichlorobenzene | 10.0 | 9.66 | | ug/L | | 97 | 58 - 151 | 4 | 21 |
| Bromobenzene | 10.0 | 9.40 | | ug/L | | 94 | 58 - 151 | 4 | 24 |
| Bromoform | 10.0 | 8.71 | | ug/L | | 87 | 62 - 140 | 2 | 25 |
| Bromomethane | 10.0 | 6.02 | | ug/L | | 60 | 22 - 179 | 4 | 44 |
| Carbon tetrachloride | 10.0 | 9.57 | | ug/L | | 96 | 53 - 134 | 5 | 19 |
| Chlorobenzene | 10.0 | 9.84 | | ug/L | | 98 | 63 - 132 | 1 | 20 |
| Chloroethane | 10.0 | 12.0 | | ug/L | | 120 | 53 - 144 | 3 | 38 |
| Chloroform | 10.0 | 10.1 | | ug/L | | 101 | 60 - 126 | 3 | 30 |
| Chloromethane | 10.0 | 10.4 | | ug/L | | 104 | 62 - 130 | 1 | 34 |
| cis-1,2-Dichloroethylene | 10.0 | 10.5 | | ug/L | | 105 | 49 - 127 | 3 | 29 |
| cis-1,3-Dichloropropene | 10.0 | 9.76 | | ug/L | | 98 | 49 - 141 | 6 | 24 |
| Dibromochloromethane | 10.0 | 9.56 | | ug/L | | 96 | 55 - 134 | 5 | 24 |
| Dibromomethane | 10.0 | 9.52 | | ug/L | | 95 | 62 - 141 | 6 | 21 |
| Dichlorodifluoromethane | 10.0 | 9.07 | * | ug/L | | 91 | 28 - 133 | 40 | 35 |
| Methylene Chloride | 10.0 | 11.3 | | ug/L | | 113 | 52 - 132 | 3 | 30 |
| Tetrachloroethene | 10.0 | 9.99 | | ug/L | | 100 | 48 - 136 | 5 | 38 |
| trans-1,2-Dichloroethene | 10.0 | 10.5 | | ug/L | | 105 | 46 - 125 | 0 | 32 |
| trans-1,3-Dichloropropene | 10.0 | 9.46 | | ug/L | | 95 | 52 - 140 | 2 | 20 |
| Trichloroethene | 10.0 | 10.1 | | ug/L | | 101 | 59 - 129 | 3 | 22 |
| Trichlorofluoromethane | 10.0 | 9.90 | | ug/L | | 99 | 62 - 138 | 22 | 40 |
| Vinyl chloride | 10.0 | 9.90 | | ug/L | | 99 | 66 - 121 | 15 | 31 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *102* | | *70 - 119* |
| *Dibromofluoromethane* | *102* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *101* | | *78 - 126* |

**Lab Sample ID: 660-81492-5 MS**
**Matrix: Water**
**Analysis Batch: 184646**

**Client Sample ID: GZ-701R**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | <1.0 | | 10.0 | 9.58 | | ug/L | | 96 | 59 - 140 |
| 1,1,1-Trichloroethane | <1.0 | | 10.0 | 10.1 | | ug/L | | 101 | 61 - 152 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | 10.0 | 9.20 | | ug/L | | 92 | 41 - 149 |
| 1,1,2-Trichloroethane | <1.0 | | 10.0 | 9.16 | | ug/L | | 92 | 60 - 132 |
| 1,1-Dichloroethane | <1.0 | | 10.0 | 10.6 | | ug/L | | 106 | 70 - 126 |
| 1,1-Dichloroethene | <1.0 | | 10.0 | 9.96 | | ug/L | | 100 | 60 - 127 |
| 1,2,3-Trichloropropane | <1.0 | | 10.0 | 9.15 | | ug/L | | 92 | 35 - 164 |
| 1,2-Dichlorobenzene | <1.0 | | 10.0 | 8.93 | | ug/L | | 89 | 70 - 142 |
| 1,2-Dichloroethane | <1.0 | | 10.0 | 9.28 | | ug/L | | 93 | 65 - 150 |
| 1,2-Dichloropropane | <1.0 | | 10.0 | 10.4 | | ug/L | | 104 | 66 - 135 |
| 1,3-Dichlorobenzene | <1.0 | | 10.0 | 8.98 | | ug/L | | 90 | 70 - 137 |
| 1,4-Dichlorobenzene | <1.0 | | 10.0 | 9.64 | | ug/L | | 96 | 70 - 137 |
| Bromobenzene | <1.0 | | 10.0 | 9.06 | | ug/L | | 91 | 70 - 139 |
| Bromoform | <1.0 | | 10.0 | 8.17 | | ug/L | | 82 | 49 - 150 |
| Bromomethane | <5.0 | | 10.0 | 6.86 | | ug/L | | 69 | 23 - 140 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 660-81492-5 MS** — **Client Sample ID: GZ-701R**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 184646**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Carbon tetrachloride | <1.0 | | 10.0 | 9.67 | | ug/L | | 97 | 50 - 162 |
| Chlorobenzene | <1.0 | | 10.0 | 9.54 | | ug/L | | 95 | 70 - 125 |
| Chloroethane | <5.0 | | 10.0 | 10.2 | | ug/L | | 102 | 43 - 165 |
| Chloroform | <1.0 | | 10.0 | 9.80 | | ug/L | | 98 | 70 - 124 |
| Chloromethane | <4.0 | | 10.0 | 8.64 | | ug/L | | 86 | 56 - 137 |
| cis-1,2-Dichloroethylene | 1.2 | | 10.0 | 11.6 | | ug/L | | 104 | 70 - 122 |
| cis-1,3-Dichloropropene | <1.0 | | 10.0 | 9.39 | | ug/L | | 94 | 46 - 131 |
| Dibromochloromethane | <1.0 | | 10.0 | 8.91 | | ug/L | | 89 | 58 - 131 |
| Dibromomethane | <1.0 | | 10.0 | 8.60 | | ug/L | | 86 | 63 - 131 |
| Dichlorodifluoromethane | <5.0 | * | 10.0 | 6.86 | | ug/L | | 69 | 37 - 139 |
| Methylene Chloride | <10 | | 10.0 | 9.58 | J | ug/L | | 96 | 61 - 134 |
| Tetrachloroethene | <1.0 | | 10.0 | 10.0 | | ug/L | | 100 | 62 - 128 |
| trans-1,2-Dichloroethene | <1.0 | | 10.0 | 10.3 | | ug/L | | 103 | 64 - 127 |
| trans-1,3-Dichloropropene | <1.0 | | 10.0 | 8.65 | | ug/L | | 87 | 40 - 137 |
| Trichloroethene | 3.9 | | 10.0 | 13.8 | | ug/L | | 99 | 70 - 131 |
| Trichlorofluoromethane | <5.0 | | 10.0 | 9.27 | | ug/L | | 93 | 60 - 157 |
| Vinyl chloride | <1.0 | | 10.0 | 8.95 | | ug/L | | 89 | 63 - 126 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *104* | | *70 - 119* |
| *Dibromofluoromethane* | *101* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *101* | | *78 - 126* |

**Lab Sample ID: 660-81492-6 DU** — **Client Sample ID: GZ-702R**
**Matrix: Water** — **Prep Type: Total/NA**
**Analysis Batch: 184646**

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1,1-Trichloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1,2,2-Tetrachloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1,2-Trichloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1-Dichloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,1-Dichloroethene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,2,3-Trichloropropane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,2-Dichlorobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,2-Dichloroethane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,2-Dichloropropane | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,3-Dichlorobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| 1,4-Dichlorobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Bromobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Bromoform | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Bromomethane | <5.0 | | <5.0 | | ug/L | | NC | 30 |
| Carbon tetrachloride | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Chlorobenzene | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Chloroethane | <5.0 | | <5.0 | | ug/L | | NC | 30 |
| Chloroform | <1.0 | | <1.0 | | ug/L | | NC | 30 |
| Chloromethane | <4.0 | | <4.0 | | ug/L | | NC | 30 |

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: 660-81492-6 DU**
**Matrix: Water**
**Analysis Batch: 184646**

**Client Sample ID: GZ-702R**
**Prep Type: Total/NA**

| Analyte | Sample Result | Sample Qualifier | | DU Result | DU Qualifier | Unit | D | | | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| cis-1,2-Dichloroethylene | 42 | | | 41.8 | | ug/L | | | | 0.9 | 30 |
| cis-1,3-Dichloropropene | <1.0 | | | <1.0 | | ug/L | | | | NC | 30 |
| Dibromochloromethane | <1.0 | | | <1.0 | | ug/L | | | | NC | 30 |
| Dibromomethane | <1.0 | | | <1.0 | | ug/L | | | | NC | 30 |
| Dichlorodifluoromethane | <5.0 | * | | <5.0 | * | ug/L | | | | NC | 30 |
| Methylene Chloride | <10 | | | <10 | | ug/L | | | | NC | 30 |
| Tetrachloroethene | <1.0 | | | <1.0 | | ug/L | | | | NC | 30 |
| trans-1,2-Dichloroethene | <1.0 | | | <1.0 | | ug/L | | | | NC | 30 |
| trans-1,3-Dichloropropene | <1.0 | | | <1.0 | | ug/L | | | | NC | 30 |
| Trichloroethene | 17 | | | 16.8 | | ug/L | | | | 0.2 | 30 |
| Trichlorofluoromethane | <5.0 | | | <5.0 | | ug/L | | | | NC | 30 |
| Vinyl chloride | <1.0 | | | <1.0 | | ug/L | | | | NC | 30 |

| *Surrogate* | *DU %Recovery* | *DU Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene* | *100* | | *70 - 119* |
| *Dibromofluoromethane* | *100* | | *83 - 123* |
| *Toluene-d8 (Surr)* | *101* | | *78 - 126* |

# QC Association Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## GC/MS VOA

### Analysis Batch: 184646

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 660-81492-2 | Trip Blank | Total/NA | Water | 8260B | |
| 660-81492-3 | Field Blank | Total/NA | Water | 8260B | |
| 660-81492-4 - DL | GZ-505R | Total/NA | Water | 8260B | |
| 660-81492-4 | GZ-505R | Total/NA | Water | 8260B | |
| 660-81492-5 | GZ-701R | Total/NA | Water | 8260B | |
| 660-81492-6 | GZ-702R | Total/NA | Water | 8260B | |
| 660-81492-7 - DL | GZ-703R | Total/NA | Water | 8260B | |
| 660-81492-7 | GZ-703R | Total/NA | Water | 8260B | |
| 660-81492-8 - DL | OW-304L | Total/NA | Water | 8260B | |
| 660-81492-8 | OW-304L | Total/NA | Water | 8260B | |
| 660-81492-9 | WB-3L | Total/NA | Water | 8260B | |
| MB 660-184646/7 | Method Blank | Total/NA | Water | 8260B | |
| LCS 660-184646/4 | Lab Control Sample | Total/NA | Water | 8260B | |
| LCSD 660-184646/5 | Lab Control Sample Dup | Total/NA | Water | 8260B | |
| 660-81492-5 MS | GZ-701R | Total/NA | Water | 8260B | |
| 660-81492-6 DU | GZ-702R | Total/NA | Water | 8260B | |

# Lab Chronicle

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Client Sample ID: Trip Blank — Lab Sample ID: 660-81492-2

**Date Collected: 06/26/17 09:25** — **Matrix: Water**
**Date Received: 06/28/17 07:44**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 184646 | 06/30/17 14:44 | K1P | TAL TAM |

## Client Sample ID: Field Blank — Lab Sample ID: 660-81492-3

**Date Collected: 06/26/17 09:30** — **Matrix: Water**
**Date Received: 06/28/17 07:44**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 184646 | 06/30/17 15:03 | K1P | TAL TAM |

## Client Sample ID: GZ-505R — Lab Sample ID: 660-81492-4

**Date Collected: 06/27/17 08:20** — **Matrix: Water**
**Date Received: 06/28/17 07:44**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 10 | 184646 | 06/30/17 15:22 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 1 | 184646 | 06/30/17 16:57 | K1P | TAL TAM |

## Client Sample ID: GZ-701R — Lab Sample ID: 660-81492-5

**Date Collected: 06/26/17 16:15** — **Matrix: Water**
**Date Received: 06/28/17 07:44**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 184646 | 06/30/17 12:19 | K1P | TAL TAM |

## Client Sample ID: GZ-702R — Lab Sample ID: 660-81492-6

**Date Collected: 06/26/17 14:45** — **Matrix: Water**
**Date Received: 06/28/17 07:44**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 184646 | 06/30/17 12:38 | K1P | TAL TAM |

## Client Sample ID: GZ-703R — Lab Sample ID: 660-81492-7

**Date Collected: 06/26/17 12:30** — **Matrix: Water**
**Date Received: 06/28/17 07:44**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 10 | 184646 | 06/30/17 15:41 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 1 | 184646 | 06/30/17 17:16 | K1P | TAL TAM |

## Client Sample ID: OW-304L — Lab Sample ID: 660-81492-8

**Date Collected: 06/26/17 13:00** — **Matrix: Water**

**Date Received: 06/28/17 07:44**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | DL | 20 | 184646 | 06/30/17 16:00 | K1P | TAL TAM |
| Total/NA | Analysis | 8260B | | 2 | 184646 | 06/30/17 17:35 | K1P | TAL TAM |

## Client Sample ID: WB-3L — Lab Sample ID: 660-81492-9

**Date Collected: 06/27/17 08:45** — **Matrix: Water**

**Date Received: 06/28/17 07:44**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total/NA | Analysis | 8260B | | 1 | 184646 | 06/30/17 16:38 | K1P | TAL TAM |

**Laboratory References:**

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

# Accreditation/Certification Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

## Laboratory: TestAmerica Tampa

The accreditations/certifications listed below are applicable to this report.

| Authority | Program | EPA Region | Identification Number | Expiration Date |
|---|---|---|---|---|
| Florida | NELAP | 4 | E84282 | 06-30-18 |

# Method Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8260B | Volatile Organic Compounds (GC/MS) | SW846 | TAL TAM |

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

# Sample Summary

Client: GZA GeoEnvironmental, Inc.
Project/Site: HP-San German IB

TestAmerica Job ID: 660-81492-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 660-81492-2 | Trip Blank | Water | 06/26/17 09:25 | 06/28/17 07:44 |
| 660-81492-3 | Field Blank | Water | 06/26/17 09:30 | 06/28/17 07:44 |
| 660-81492-4 | GZ-505R | Water | 06/27/17 08:20 | 06/28/17 07:44 |
| 660-81492-5 | GZ-701R | Water | 06/26/17 16:15 | 06/28/17 07:44 |
| 660-81492-6 | GZ-702R | Water | 06/26/17 14:45 | 06/28/17 07:44 |
| 660-81492-7 | GZ-703R | Water | 06/26/17 12:30 | 06/28/17 07:44 |
| 660-81492-8 | OW-304L | Water | 06/26/17 13:00 | 06/28/17 07:44 |
| 660-81492-9 | WB-3L | Water | 06/27/17 08:45 | 06/28/17 07:44 |

# Shipping and Receiving Documents

**TestAmerica Tampa**
6712 Benjamin Road Suite 100
Tampa, FL 33634
Phone (813) 885-7427

# Chain of Custody Record

TestAmerica

| Client Information | Sampler: H. Chacón | Lab PM: Gudnason, Mark | Carrier Tracking No(s): | COC No. 660-45932-24358.2 |
|---|---|---|---|---|
| Client Contact: Mr. James Roehrig | Phone: 787-460-4023 | E-Mail: [illegible] | | Page: Page 1 of 1 |
| Company: GZA GeoEnvironmental, Inc. | | | | Job #: 01.24065.19 |
| Address: 249 Vanderbilt Ave | Due Date Requested: | | | |
| City: Norwood | TAT Requested (days): Standard | | | |
| State, Zip: MA, 02062 | | | | |
| Phone: 781-278-5734(Tel) 781-278-5701(Fax) | PO #: | | | |
| Email: james.roehrig@gza.com | WO #: | | | |
| Project Name: HP-San German IB | Project #: | | | |
| Site: | SSOW#: | | | |

**Analysis Requested**

**Preservation Codes:**
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=comp, G=grab) | Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air) | Field Filtered Sample (Yes or No) | Perform MS/MSD (Yes or No) | 8260C - Site VOHs | | | | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | A | S | A | D | | |
| Temperature Blank | 6/26/17 | 9:20 | — | — | | | | | | | 2 | |
| Trip Blank | 6/26/17 | 9:25 | G | GW | | | x | | | | 3 | |
| Field Blank | 6/26/17 | 9:30 | G | GW | | | x | | | | 3 | |
| GZ-505R | 6/27/17 | 8:20 | G | GW | | | x | | | | 3 | |
| GZ-701R | 6/26/17 | 16:15 | G | GW | | | x | | | | 3 | |
| GZ-702R | 6/26/17 | 14:45 | G | GW | | | x | | | | 3 | |
| GZ-703R | 6/26/17 | 12:30 | G | GW | | | x | | | | 3 | |
| OW-304L | 6/26/17 | 13:00 | G | GW | | | x | | | | 3 | |
| WB-3L | 6/27/17 | 8:45 | G | GW | | | x | | | | 3 | |
| | 6/27/17 | | | | | | | | | | | |

Loc: 660 81492
660-81492 Chain of Custody

**Possible Hazard Identification**
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements: Samples preserved on ICE / No bubbles observed in VOA's

| Empty Kit Relinquished by: | Date: | Time: | Method of Shipment: |
|---|---|---|---|

| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
|---|---|---|---|---|---|
| Hermes Chacón | 6/27/17 / 13:00 | DSE | [illegible] | 6/28/17 744 | |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |
| Relinquished by: | Date/Time: | Company | Received by: | Date/Time: | Company |

| Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 5.2/5.5 w-09 |
|---|---|---|

# Login Sample Receipt Checklist

Client: GZA GeoEnvironmental, Inc.

Job Number: 660-81492-1

**Login Number: 81492**
**List Number: 1**
**Creator: Moccia, Vanessa M**

**List Source: TestAmerica Tampa**

| Question | Answer | Comment |
|---|---|---|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | N/A | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time (excluding tests with immediate HTs) | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | True | |
| Multiphasic samples are not present. | True | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

# APPENDIX C

VOC (MOLARITY) TIME SERIES PLOT

# Index of VOC Molarity Trend Analysis Charts

File No. 01.0024065.19

Hewlett-Packard Voluntary Remediation Project San German, Puerto Rico


| | |
|---|---|
| GZ-501L: Screened in the Saprolite Unit | Page 1 |
| GZ-502L: Screened in the Saprolite Unit | Page 2 |
| GZ-503L: Screened in the Saprolite Unit | Page 3 |
| GZ-504R: Screened in the Bedrock Unit | Page 4 |
| GZ-505L: Screened in the Saprolite Unit | Page 5 |
| GZ-505R: Screened in the Bedrock Unit | Page 6 |
| GZ-506R: Screened in the Bedrock Unit | Page 7 |
| GZ-511U: Screened in the Fill/Alluvium Unit | Page 8 |
| GZ-515U: Screened in the Alluvium Unit | Page 9 |
| GZ-519U: Screened in Fill Unit | Page 10 |
| GZ-702R: Screened in Bedrock | Page 11 |
| OW-101: Screened in the Fill Unit | Page 12 |
| OW-301: Screened in the Saprolite Unit | Page 13 |
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| OW-304R: Screened in the Bedrock Unit | Page 15 |
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| OW-305I: Screened in the Alluvium Unit | Page 17 |
| OW-307: Screened in the Saprolite Unit | Page 18 |
| OW-401: Screened in the Saprolite Unit | Page 19 |
| OW-402U: Screened in the Fill Unit | Page 20 |
| OW-402L: Screened in the Saprolite Unit | Page 21 |
| OW-402R: Screened in the Bedrock Unit | Page 22 |
| OW-403L: Screened in the Saprolite Unit | Page 23 |
| OW-404L: Screened in the Saprolite Unit | Page 24 |
| OW-404R: Screened in the Bedrock Unit | Page 25 |
| OW-404U: Screened in the Fill Unit | Page 26 |

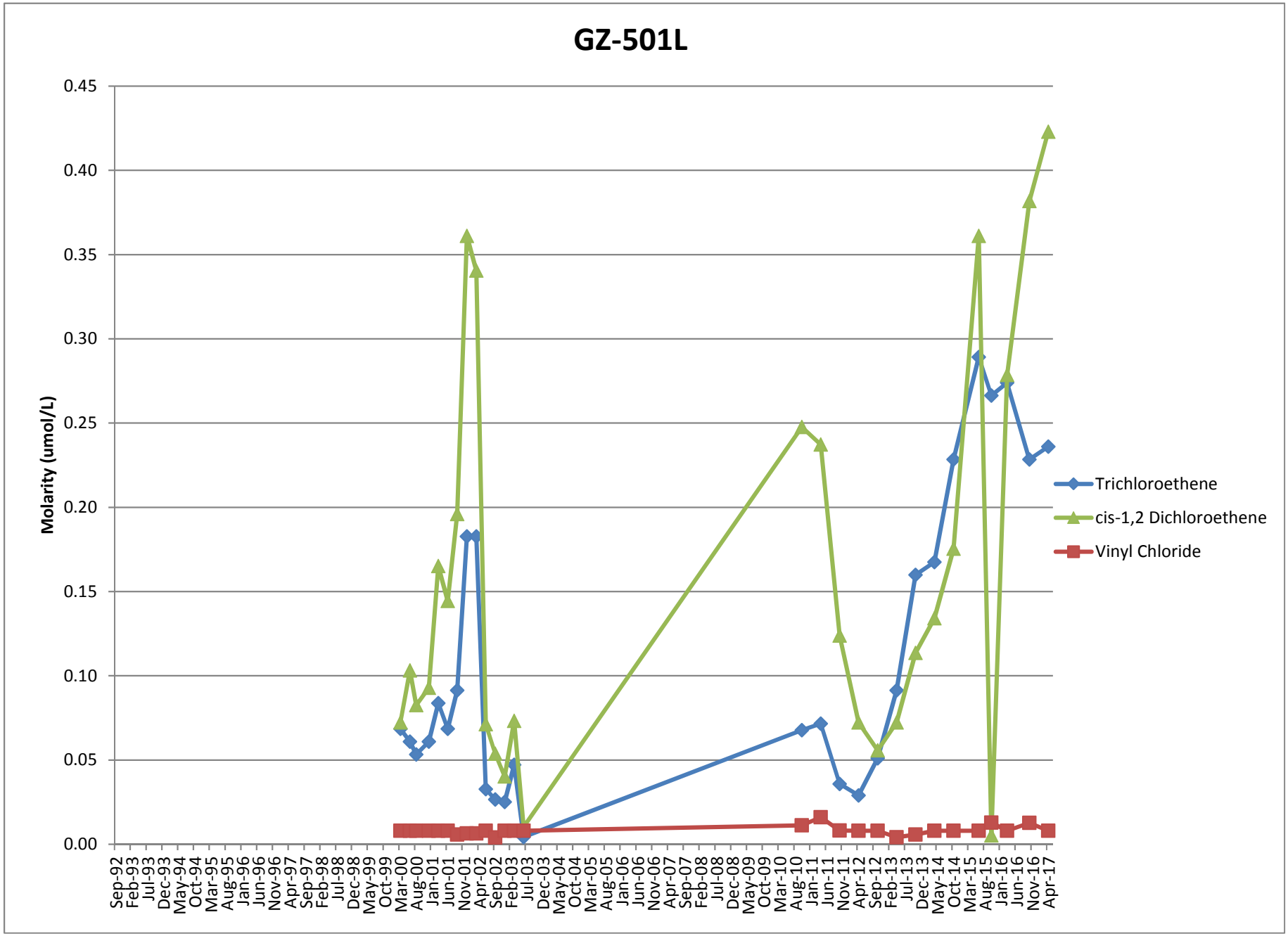
WB-1U: Screened in the Fill Unit Page 27

WB-1L: Screened in the Saprolite Unit Page 28

WB-2L: Screened in the Saprolite Unit Page 29

WB-3L: Screened in the Saprolite Unit Page 30

WB-4L: Screened in the Saprolite Unit Page 31


GZ-501L
Molarity (umol/L)
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
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Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
Sep-02
Feb-03
Jul-03
Dec-03
May-04
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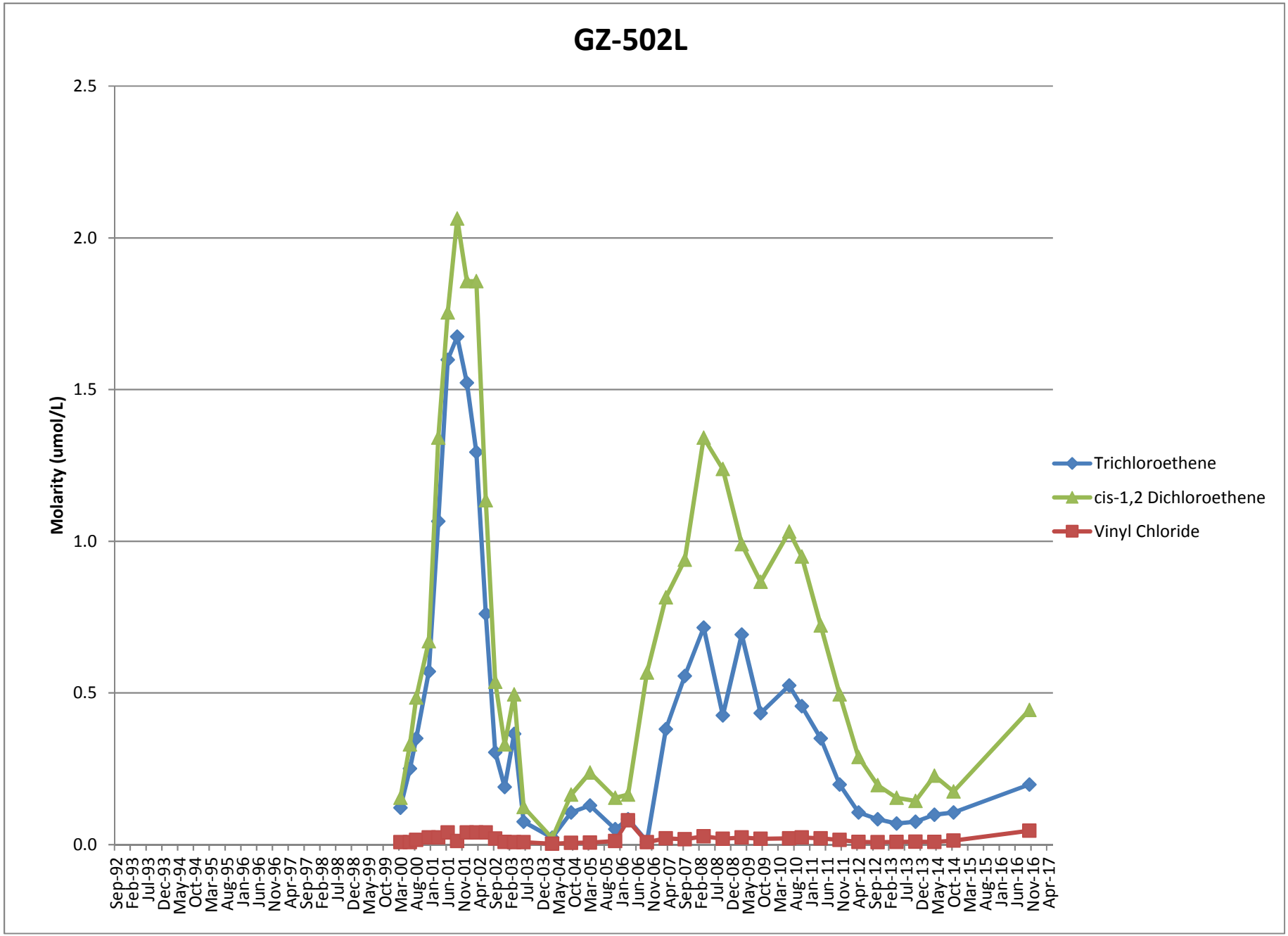
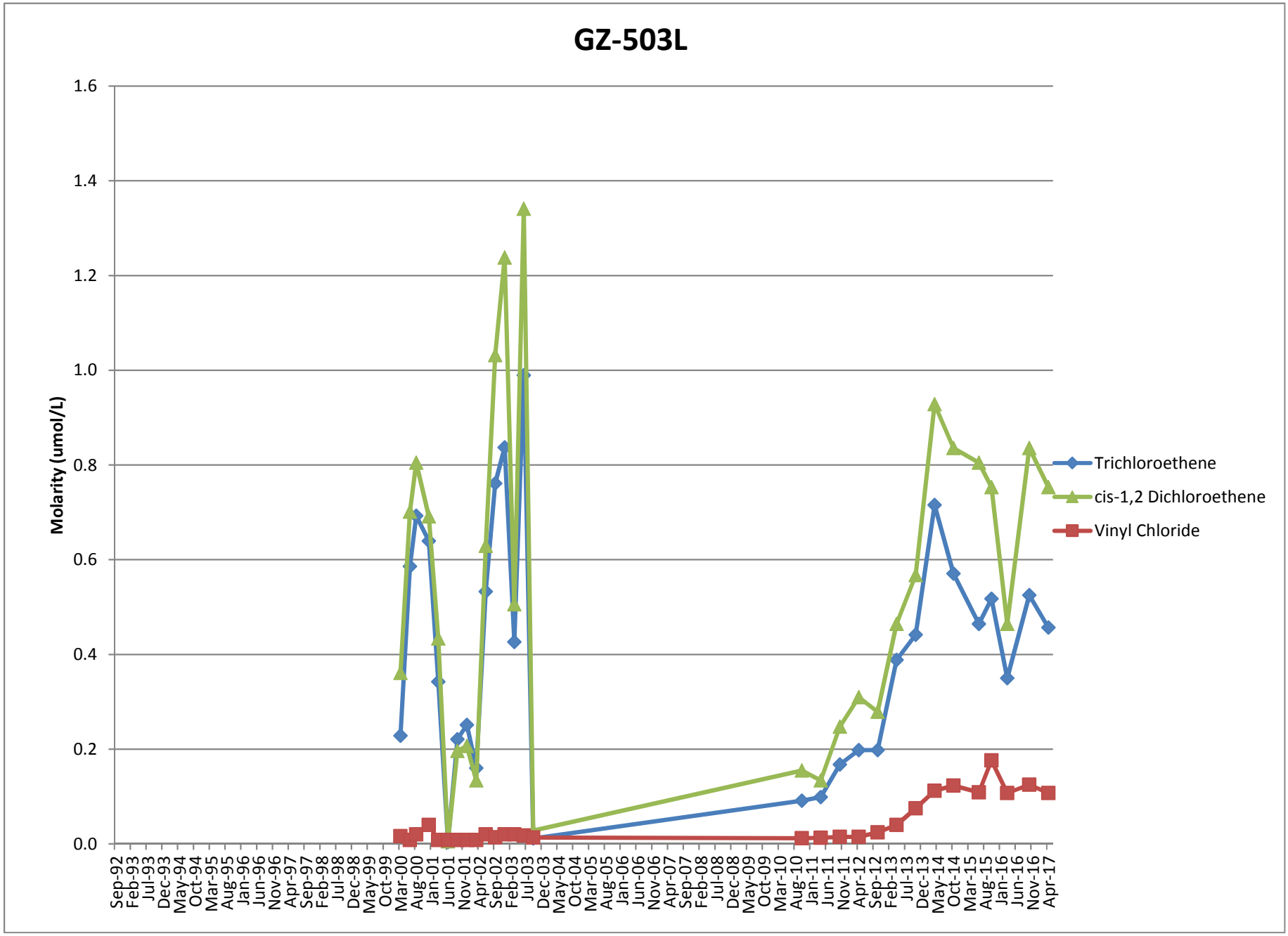
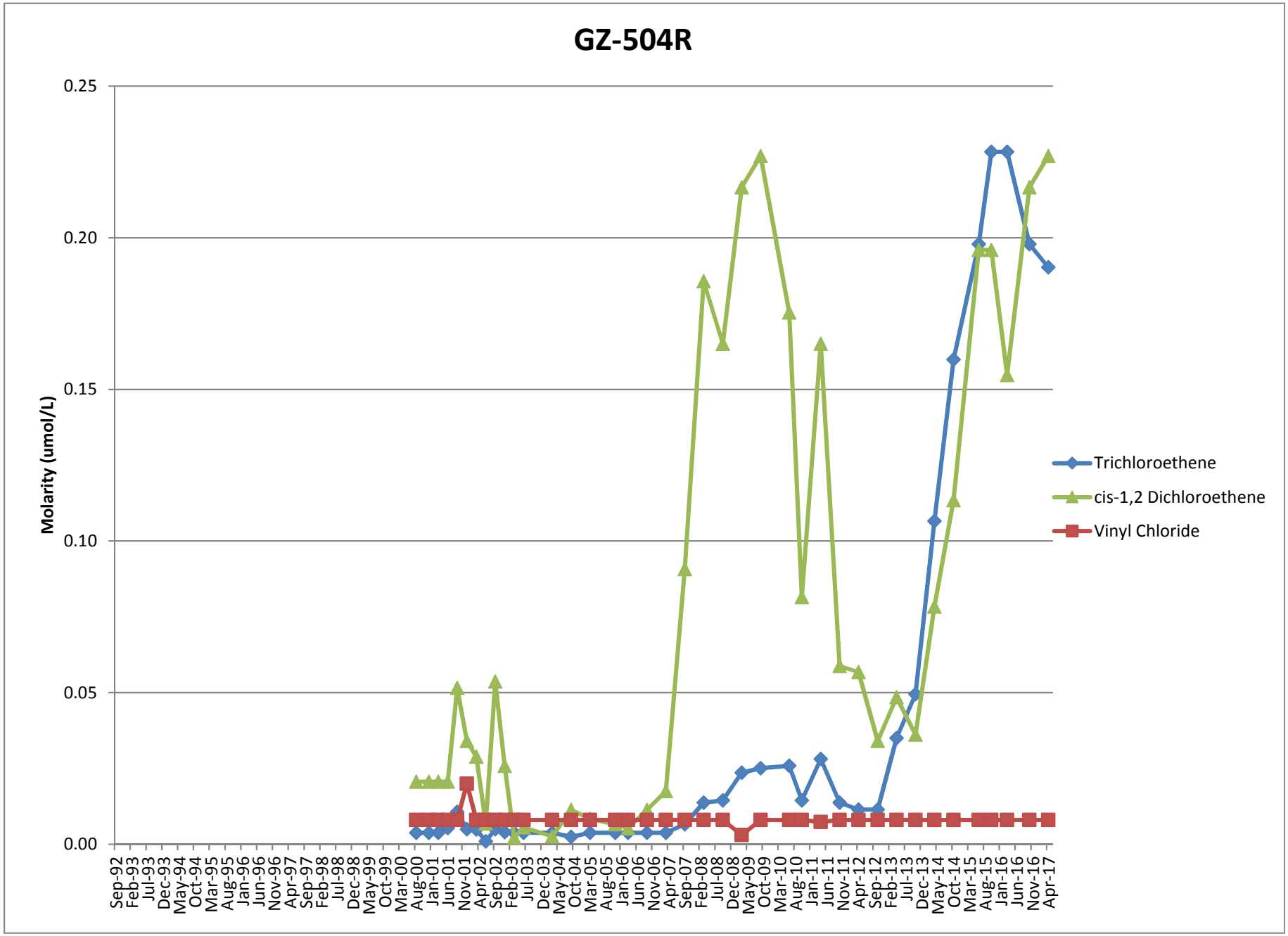
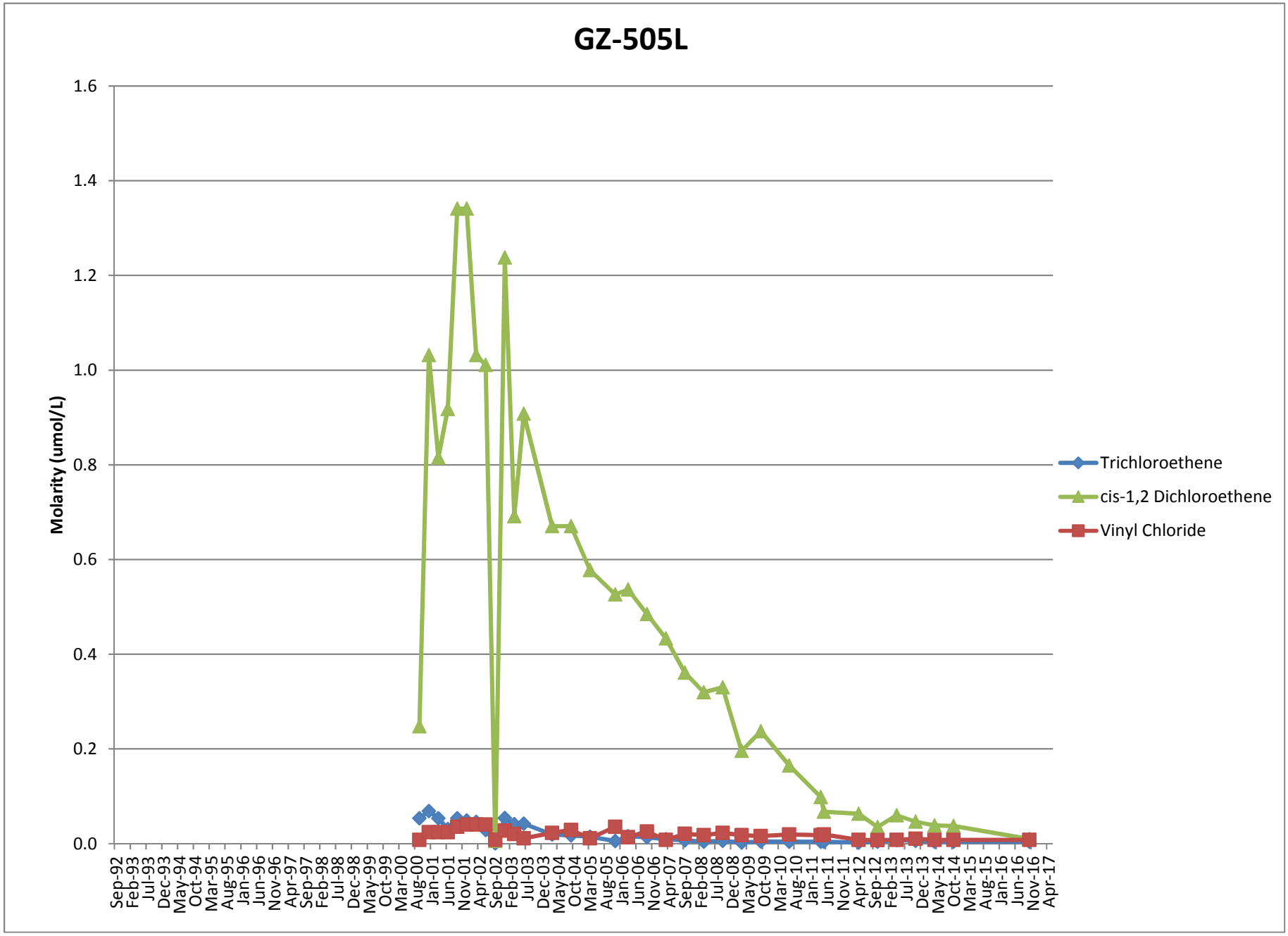
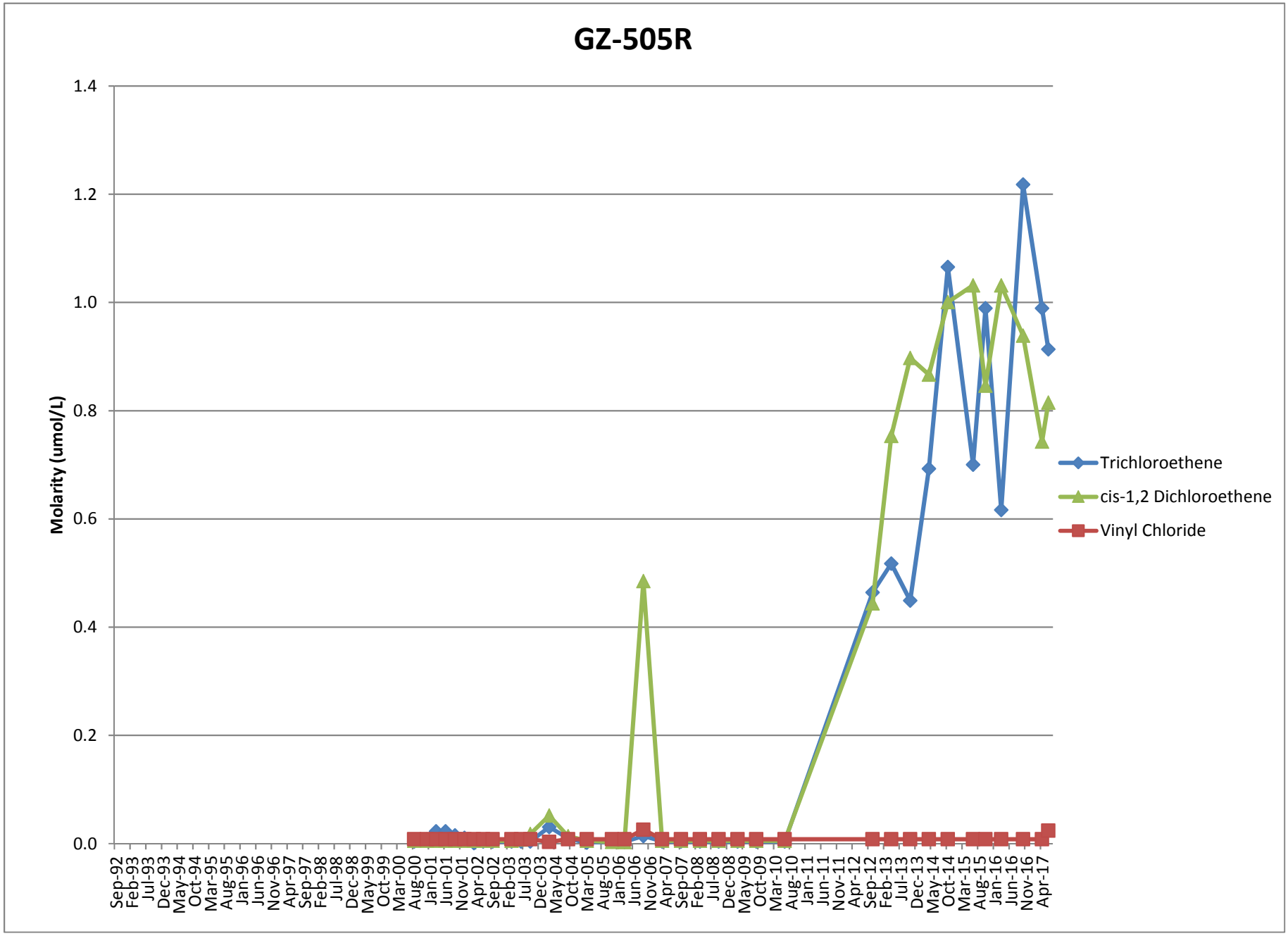
Mar-05
Aug-05
Jan-06
Jun-06
Nov-06
Apr-07
Sep-07
Feb-08
Jul-08
Dec-08
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


GZ-502L
Molarity (umol/L)
2.5
2.0
1.5
1.0
0.5
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
Sep-02
Feb-03
Jul-03
Dec-03
May-04
Oct-04
Mar-05
Aug-05
Jan-06
Jun-06
Nov-06
Apr-07
Sep-07
Feb-08
Jul-08
Dec-08
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


GZ-503L
Molarity (umol/L)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
Sep-02
Feb-03
Jul-03
Dec-03
May-04
Oct-04
Mar-05
Aug-05
Jan-06
Jun-06
Nov-06
Apr-07
Sep-07
Feb-08
Jul-08
Dec-08
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


GZ-504R
Molarity (umol/L)
0.25
0.20
0.15
0.10
0.05
0.00
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
Sep-02
Feb-03
Jul-03
Dec-03
May-04
Oct-04
Mar-05
Aug-05
Jan-06
Jun-06
Nov-06
Apr-07
Sep-07
Feb-08
Jul-08
Dec-08
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


GZ-505L
Molarity (umol/L)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
Sep-02
Feb-03
Jul-03
Dec-03
May-04
Oct-04
Mar-05
Aug-05
Jan-06
Jun-06
Nov-06
Apr-07
Sep-07
Feb-08
Jul-08
Dec-08
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


GZ-505R
Molarity (umol/L)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
Sep-02
Feb-03
Jul-03
Dec-03
May-04
Oct-04
Mar-05
Aug-05
Jan-06
Jun-06
Nov-06
Apr-07
Sep-07
Feb-08
Jul-08
Dec-08
May-09
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Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
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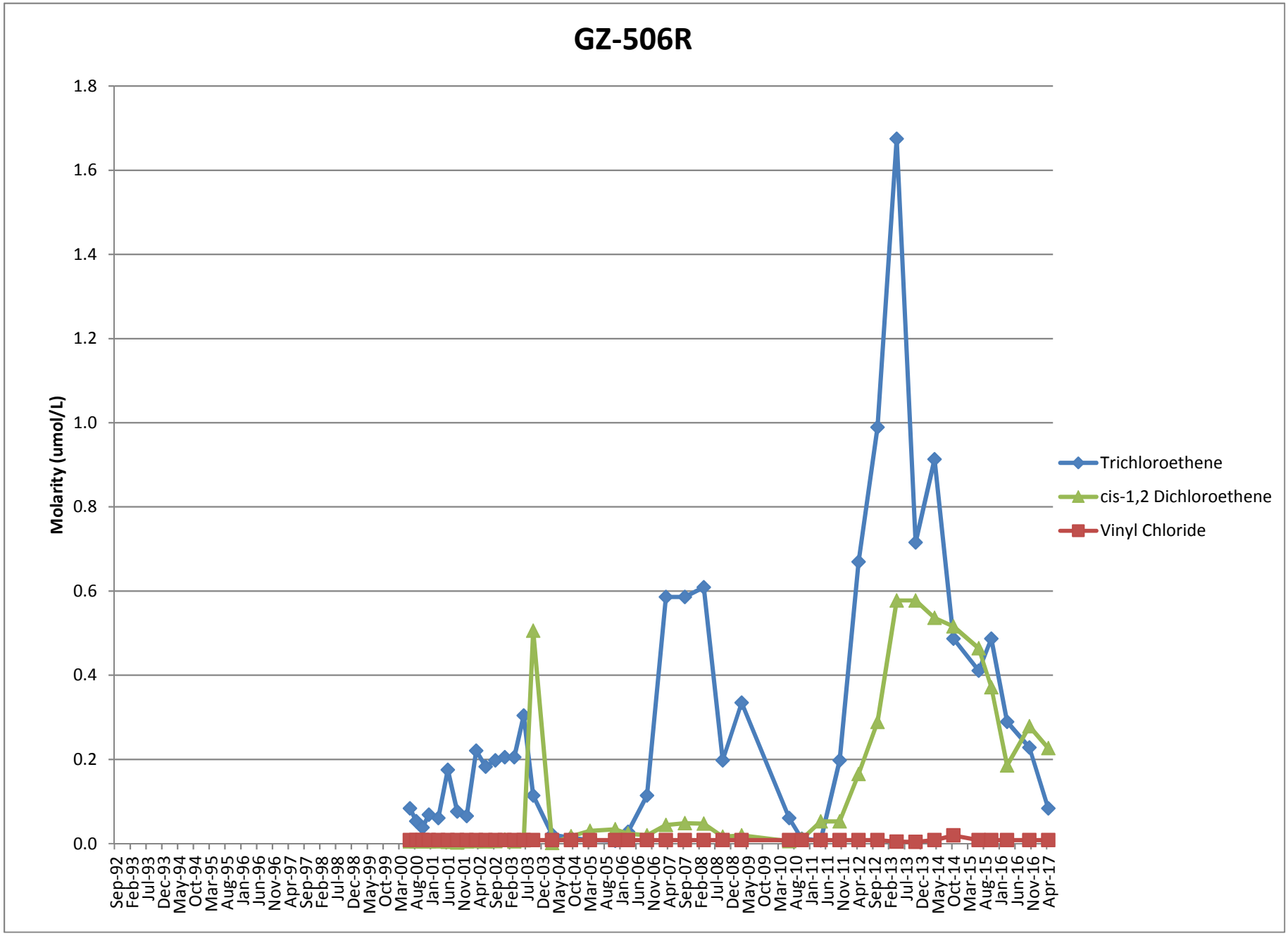
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


GZ-506R
Molarity (umol/L)
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
Sep-02
Feb-03
Jul-03
Dec-03
May-04
Oct-04
Mar-05
Aug-05
Jan-06
Jun-06
Nov-06
Apr-07
Sep-07
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May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
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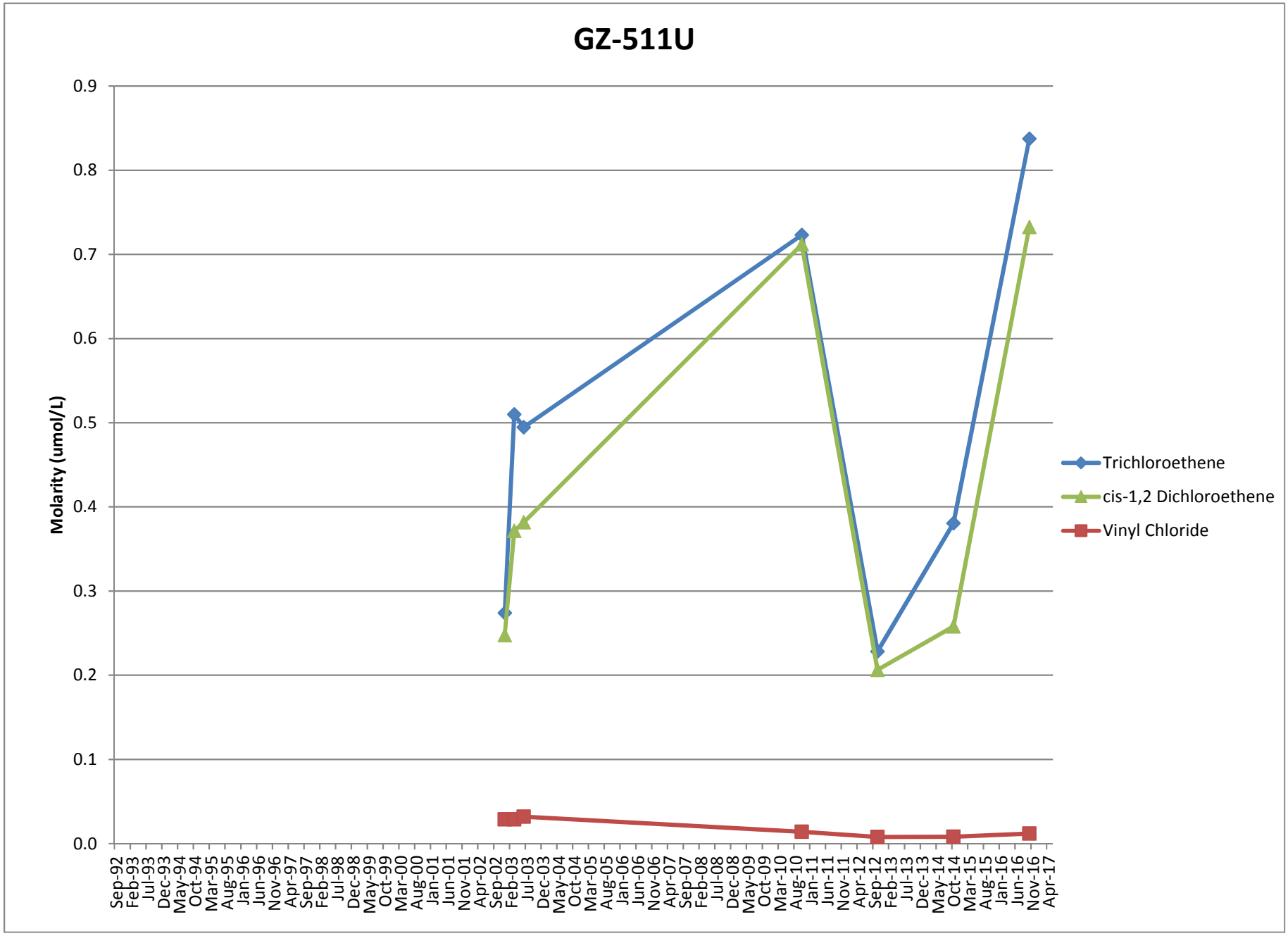
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


GZ-511U
Molarity (umol/L)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
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Jul-03
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May-04
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Mar-05
Aug-05
Jan-06
Jun-06
Nov-06
Apr-07
Sep-07
Feb-08
Jul-08
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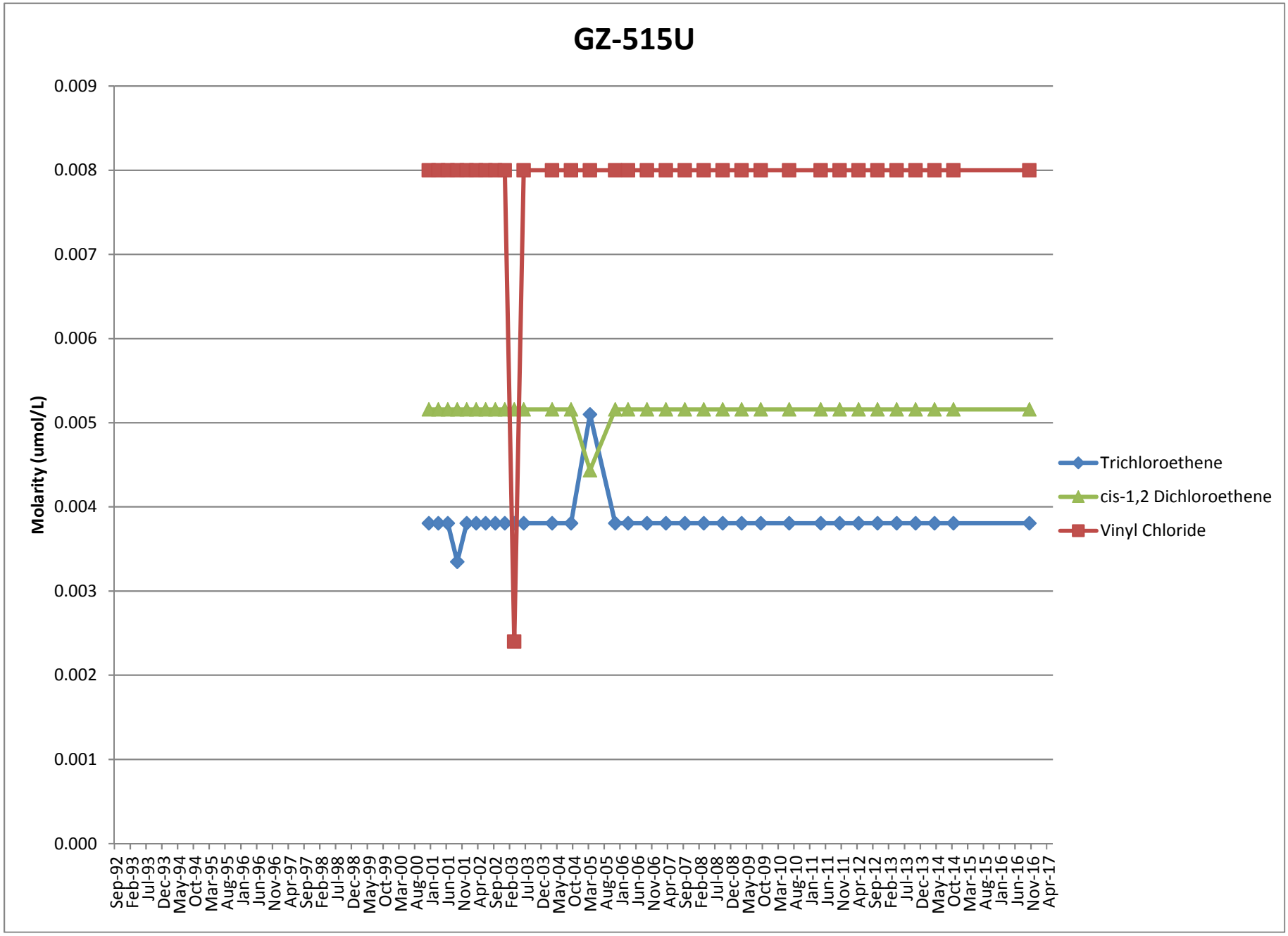
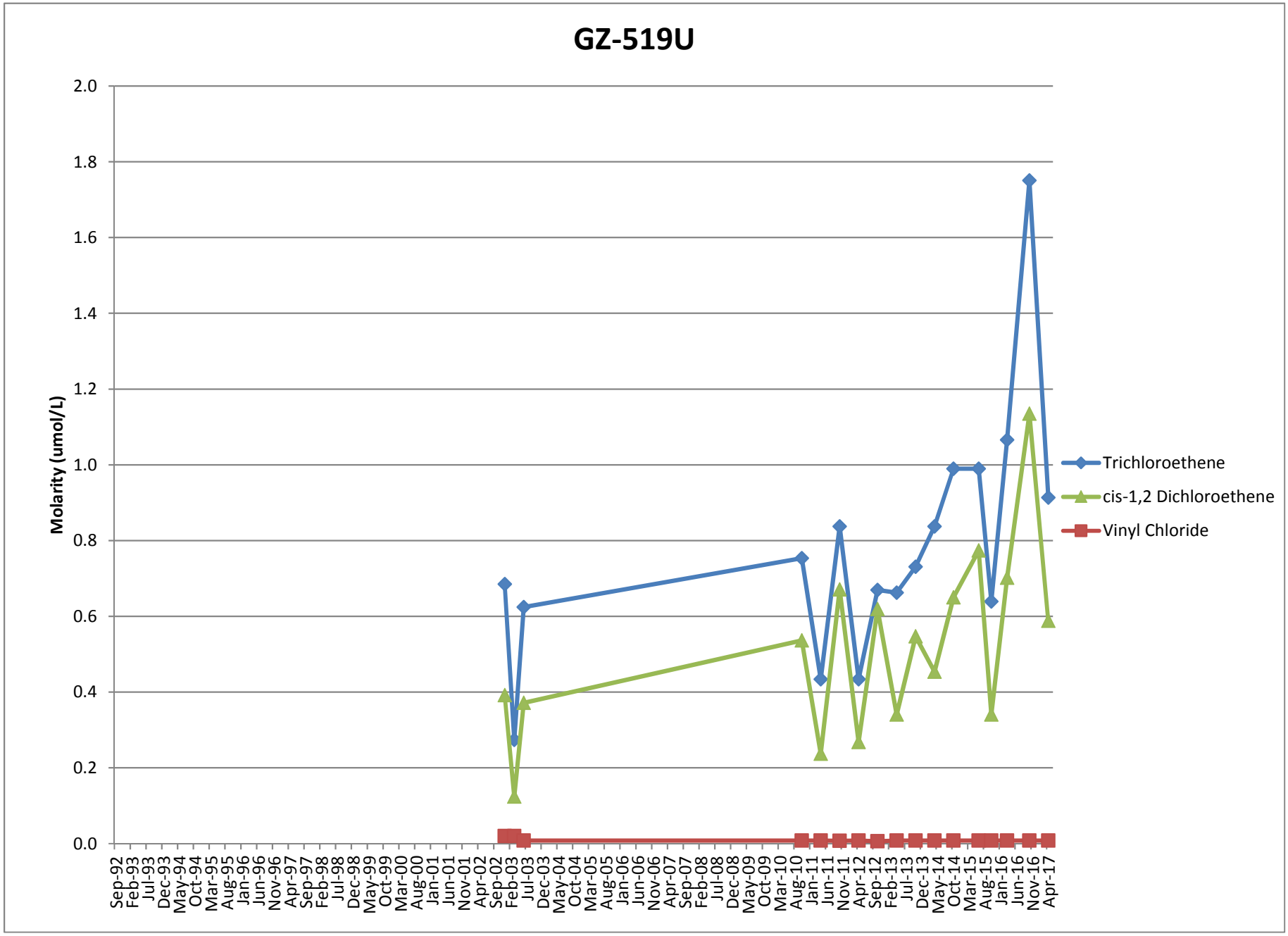
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


GZ-515U
Molarity (umol/L)
0.009
0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0.000
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
Sep-02
Feb-03
Jul-03
Dec-03
May-04
Oct-04
Mar-05
Aug-05
Jan-06
Jun-06
Nov-06
Apr-07
Sep-07
Feb-08
Jul-08
Dec-08
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


GZ-519U
Molarity (umol/L)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
Sep-02
Feb-03
Jul-03
Dec-03
May-04
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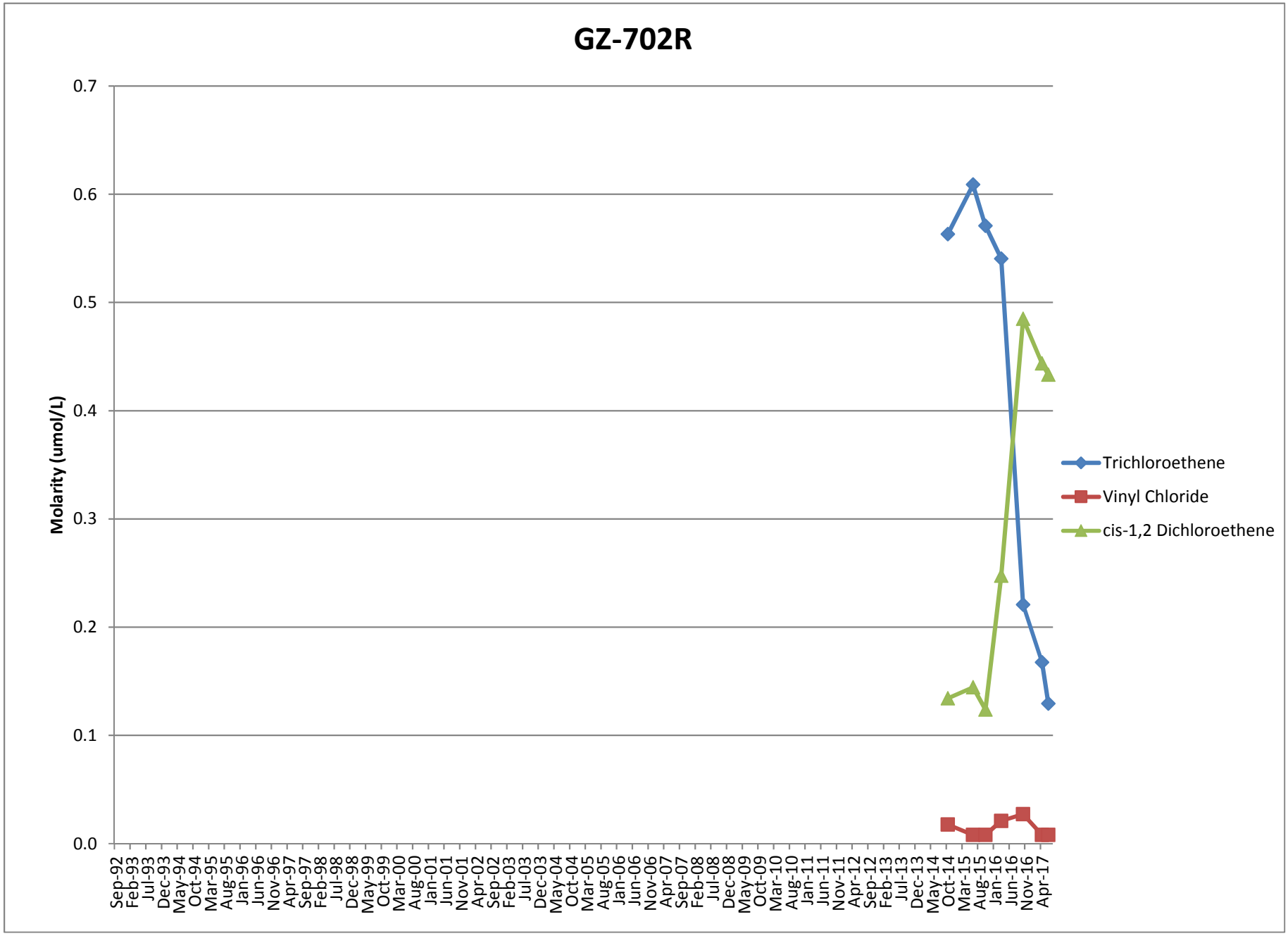
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


GZ-702R
Molarity (umol/L)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
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Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
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Jul-08
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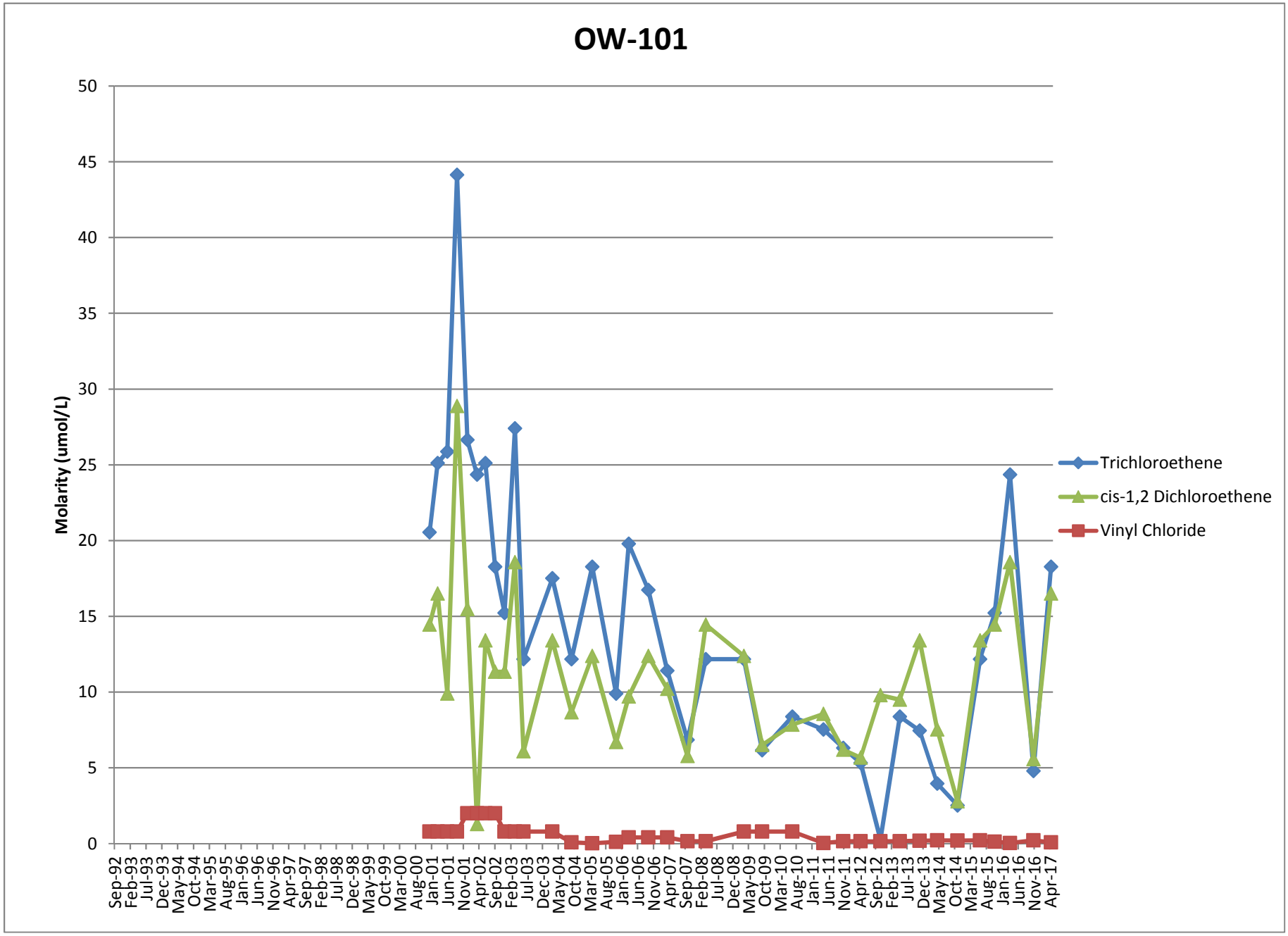
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
Vinyl Chloride
cis-1,2 Dichloroethene


OW-101
Molarity (umol/L)
50
45
40
35
30
25
20
15
10
5
0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
Oct-99
Mar-00
Aug-00
Jan-01
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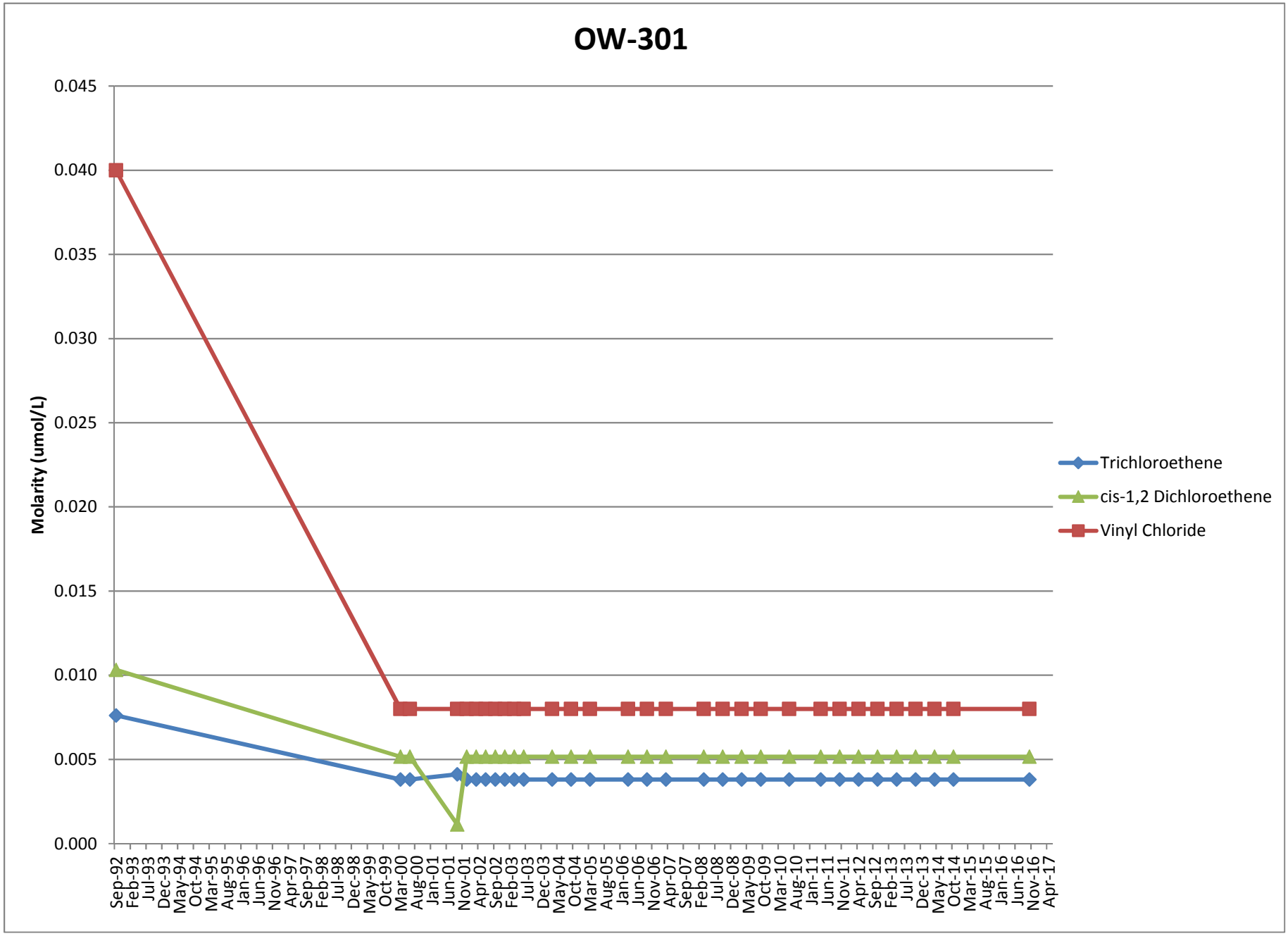
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-301
Molarity (umol/L)
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
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Feb-03
Jul-03
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Mar-05
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Jan-06
Jun-06
Nov-06
Apr-07
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Feb-08
Jul-08
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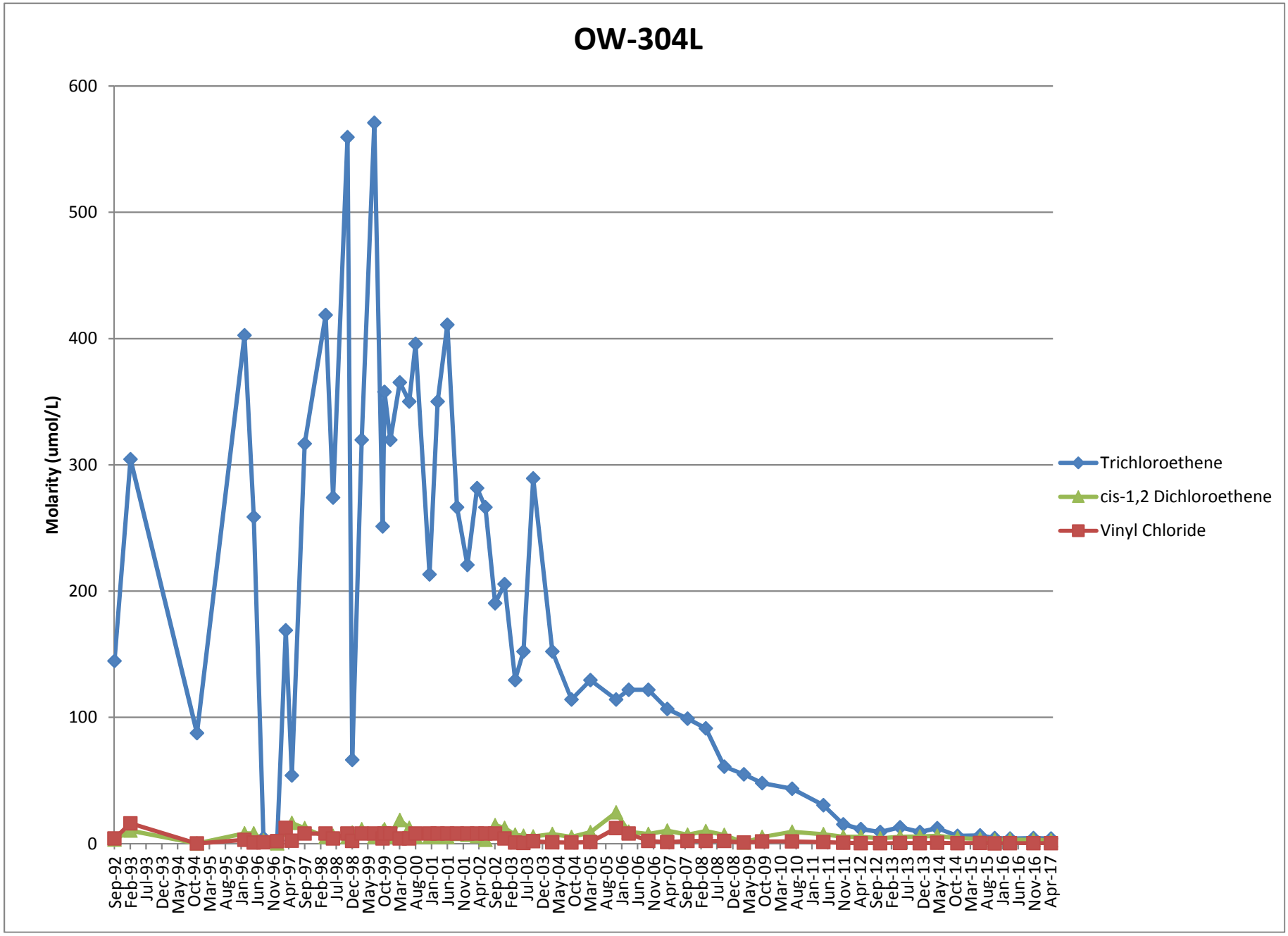
May-09
Oct-09
Mar-10
Aug-10
Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-304L
Molarity (umol/L)
600
500
400
300
200
100
0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
Oct-99
Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
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May-09
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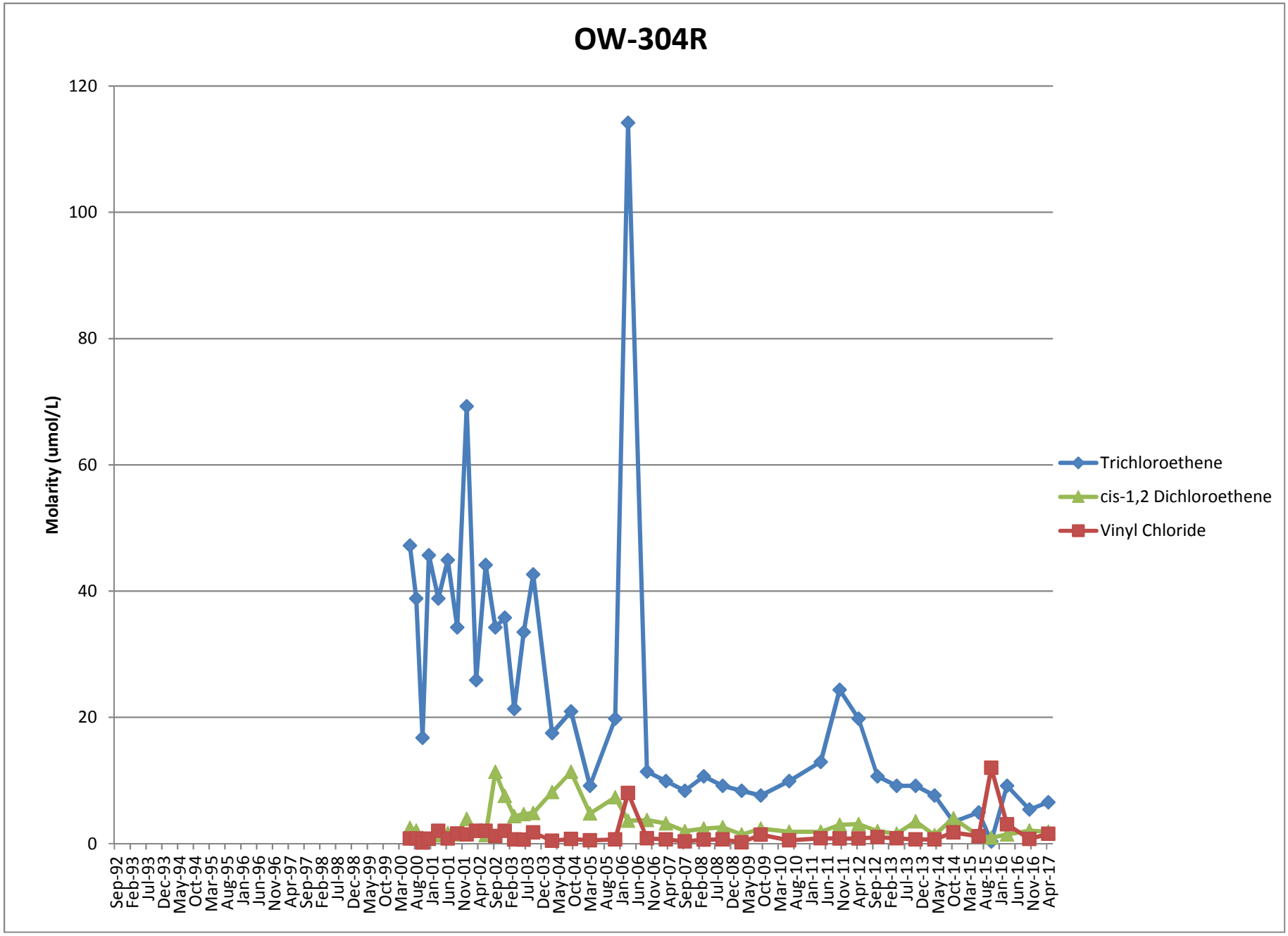
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
Mar-15
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-304R
Molarity (umol/L)
120
100
80
60
40
20
0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
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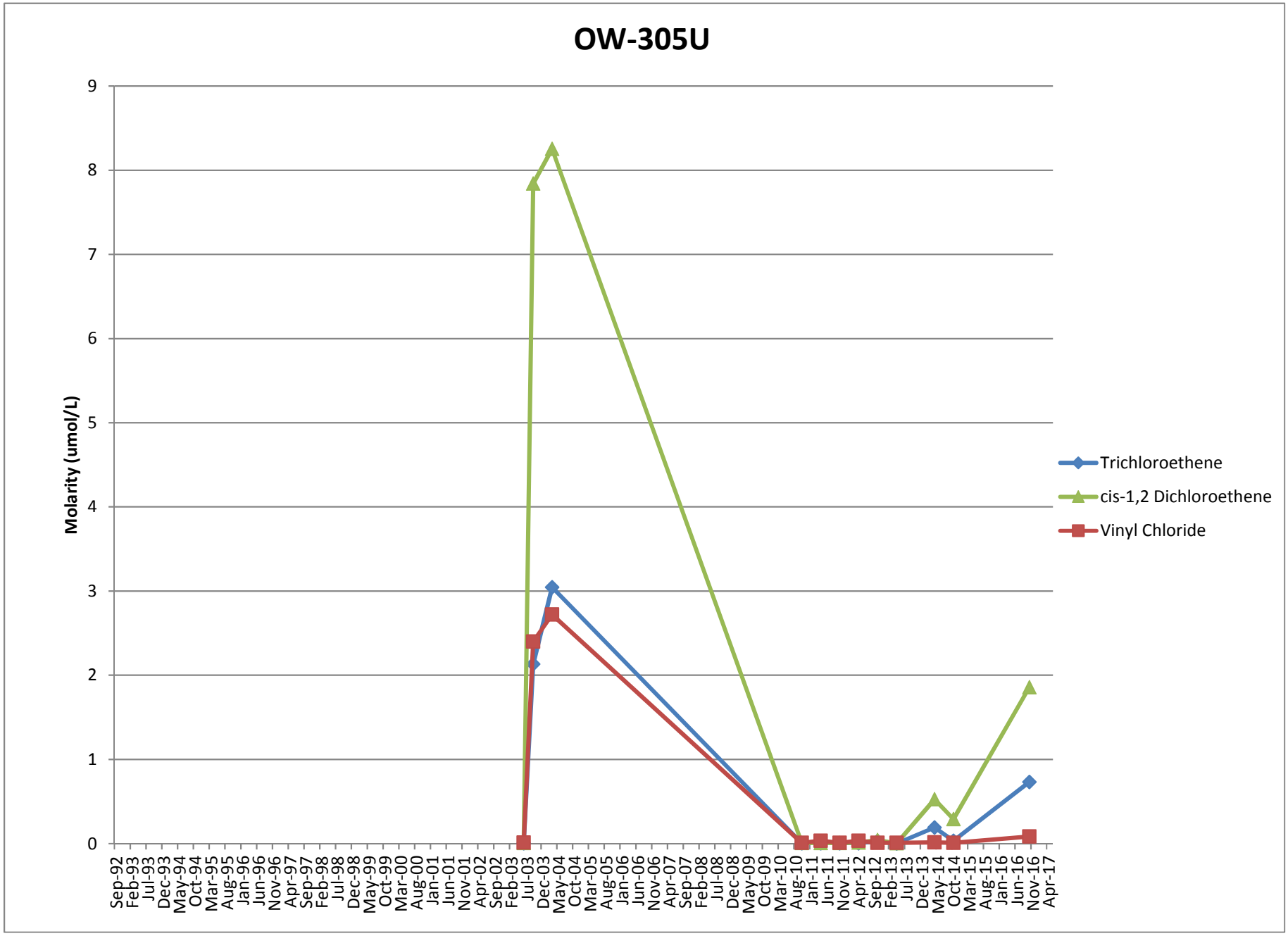
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-305U
Molarity (umol/L)
0
1
2
3
4
5
6
7
8
9
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
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May-99
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Jul-08
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May-09
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Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
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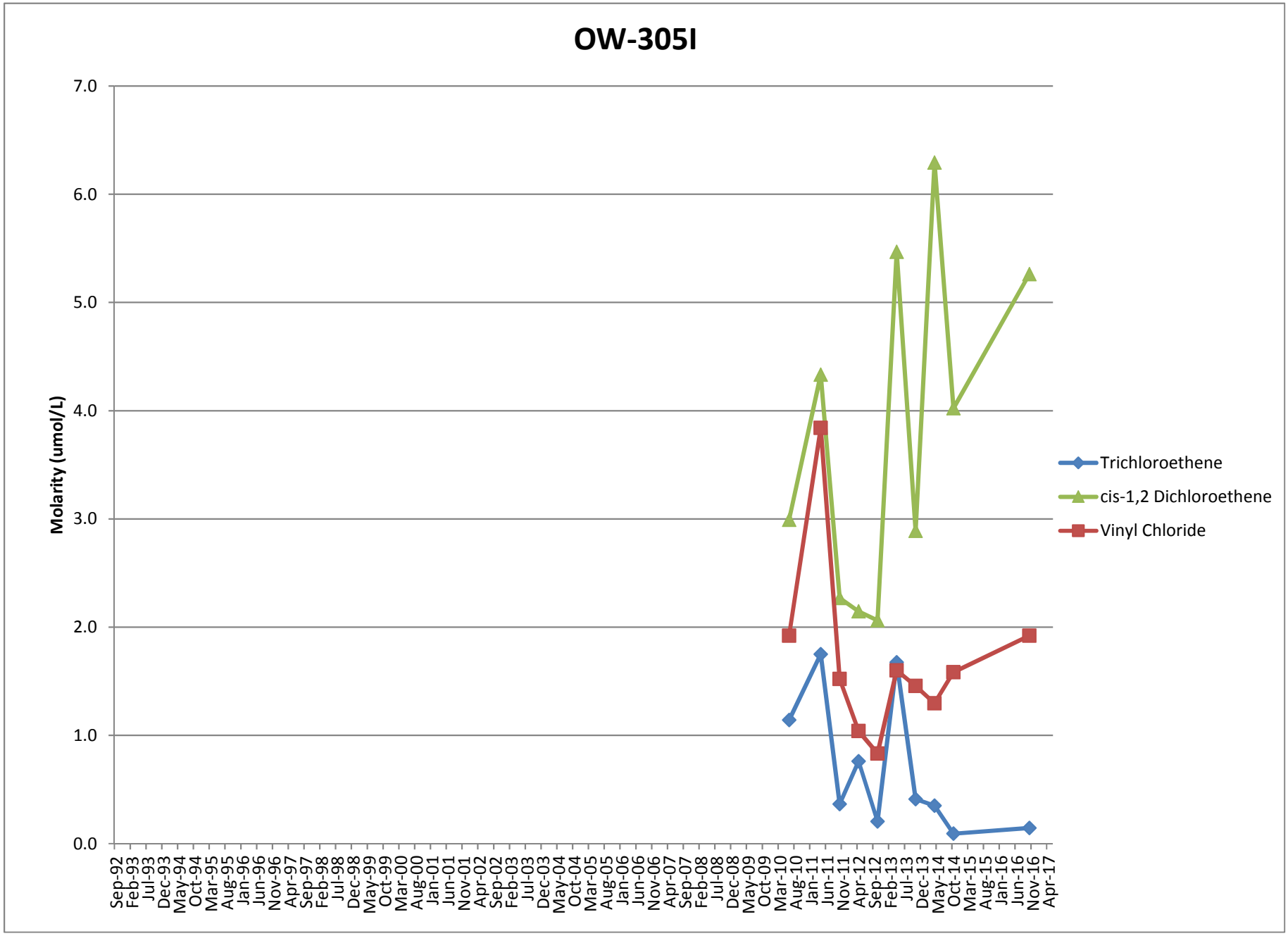
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-305I
Molarity (umol/L)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
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Jan-01
Jun-01
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Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
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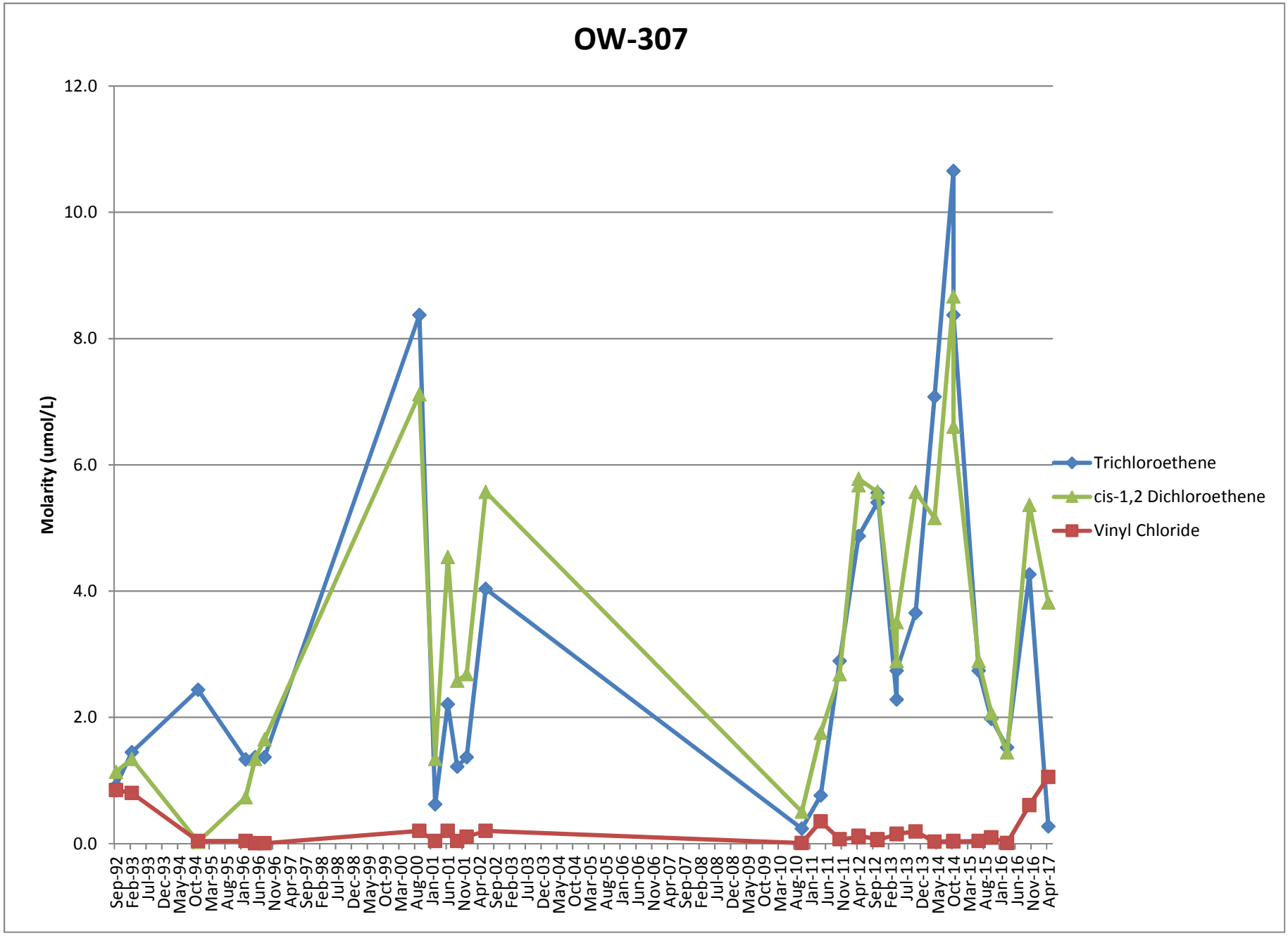
Aug-15
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-307
Molarity (umol/L)
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
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Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
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Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
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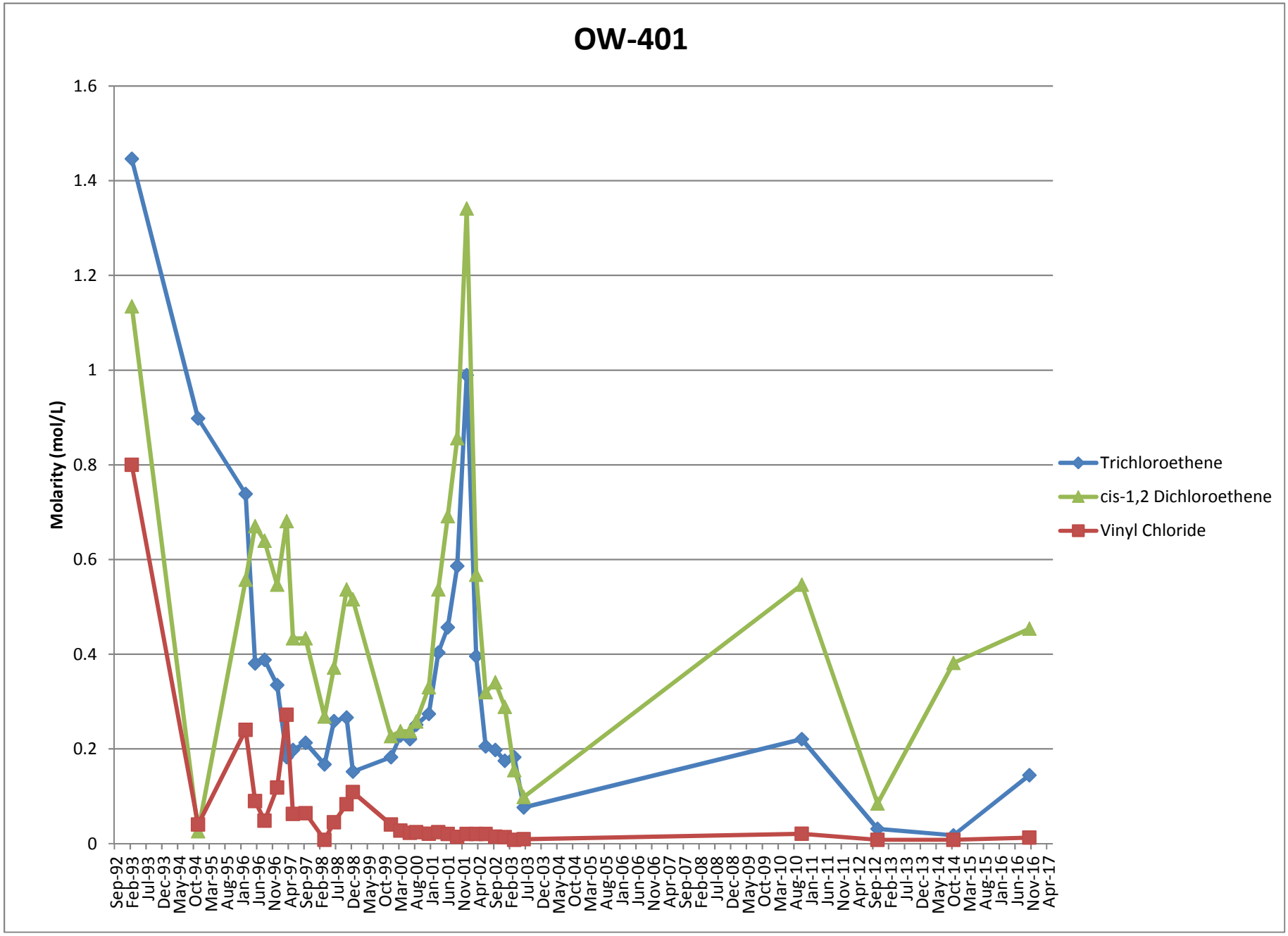
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-401
Molarity (mol/L)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
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Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
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Apr-07
Sep-07
Feb-08
Jul-08
Dec-08
May-09
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Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
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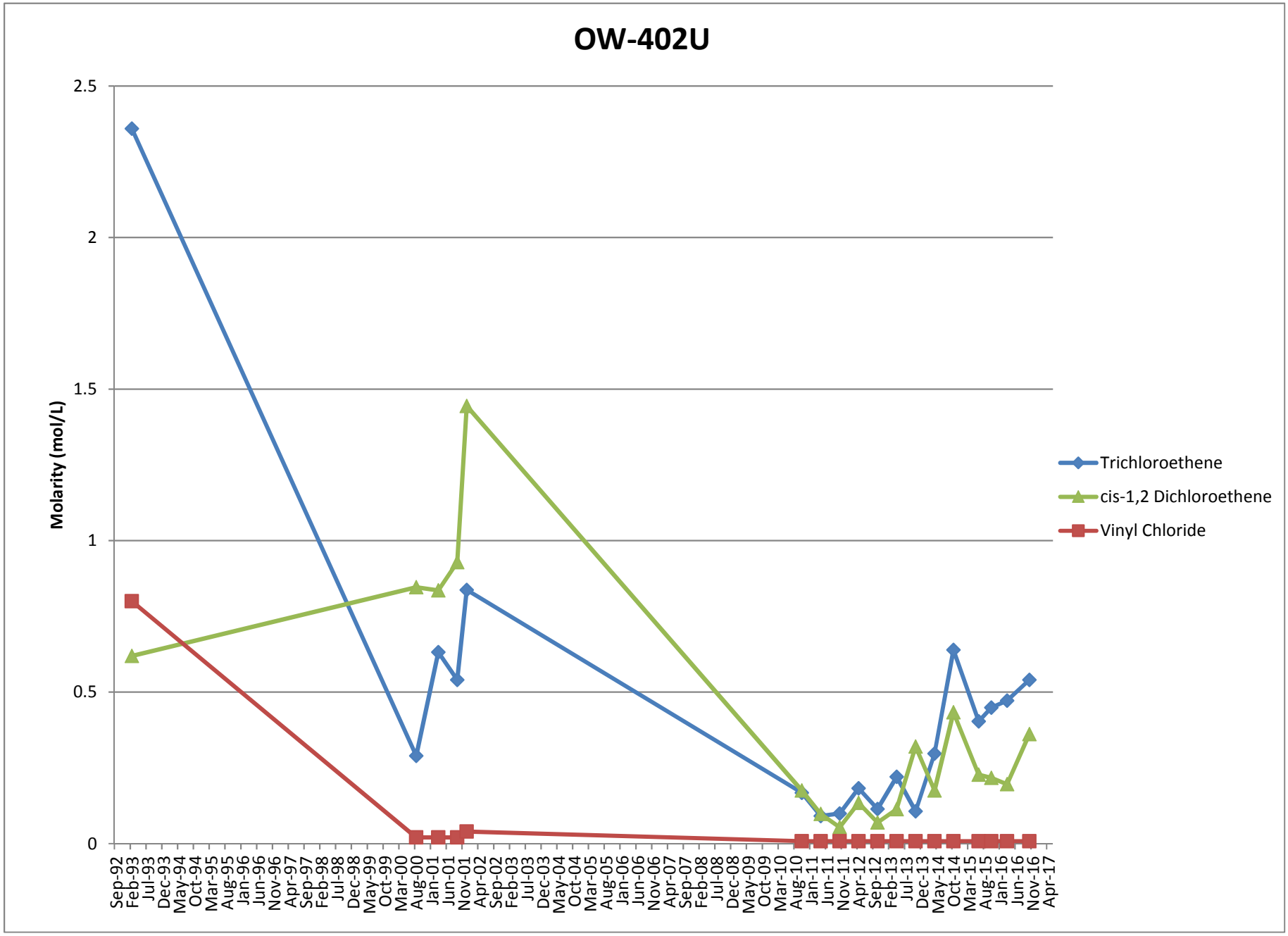
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-402U
Molarity (mol/L)
2.5
2
1.5
1
0.5
0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
Dec-98
May-99
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Mar-00
Aug-00
Jan-01
Jun-01
Nov-01
Apr-02
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Nov-11
Apr-12
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Jul-13
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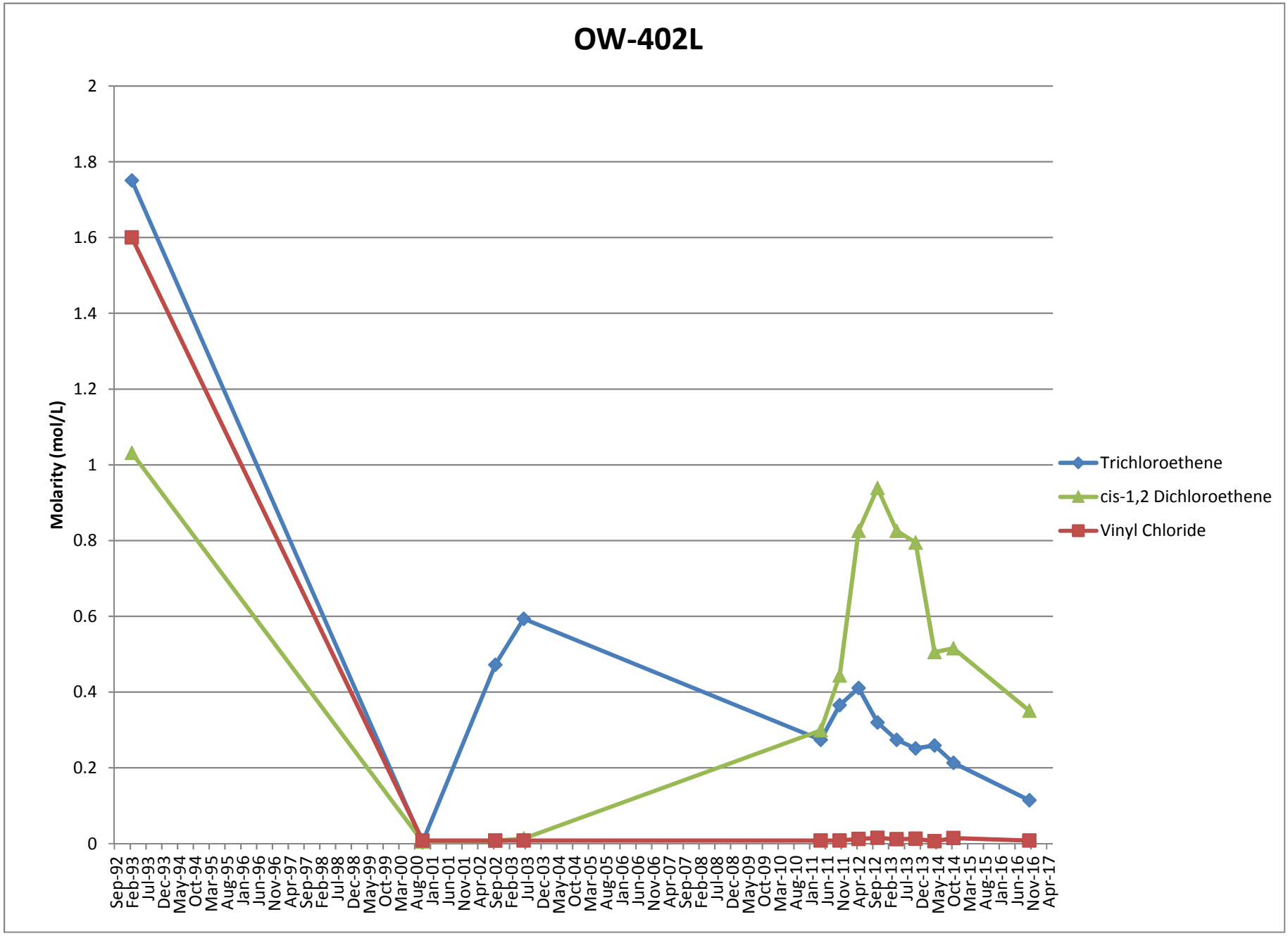
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-402L
Molarity (mol/L)
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
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Jul-13
Dec-13
May-14
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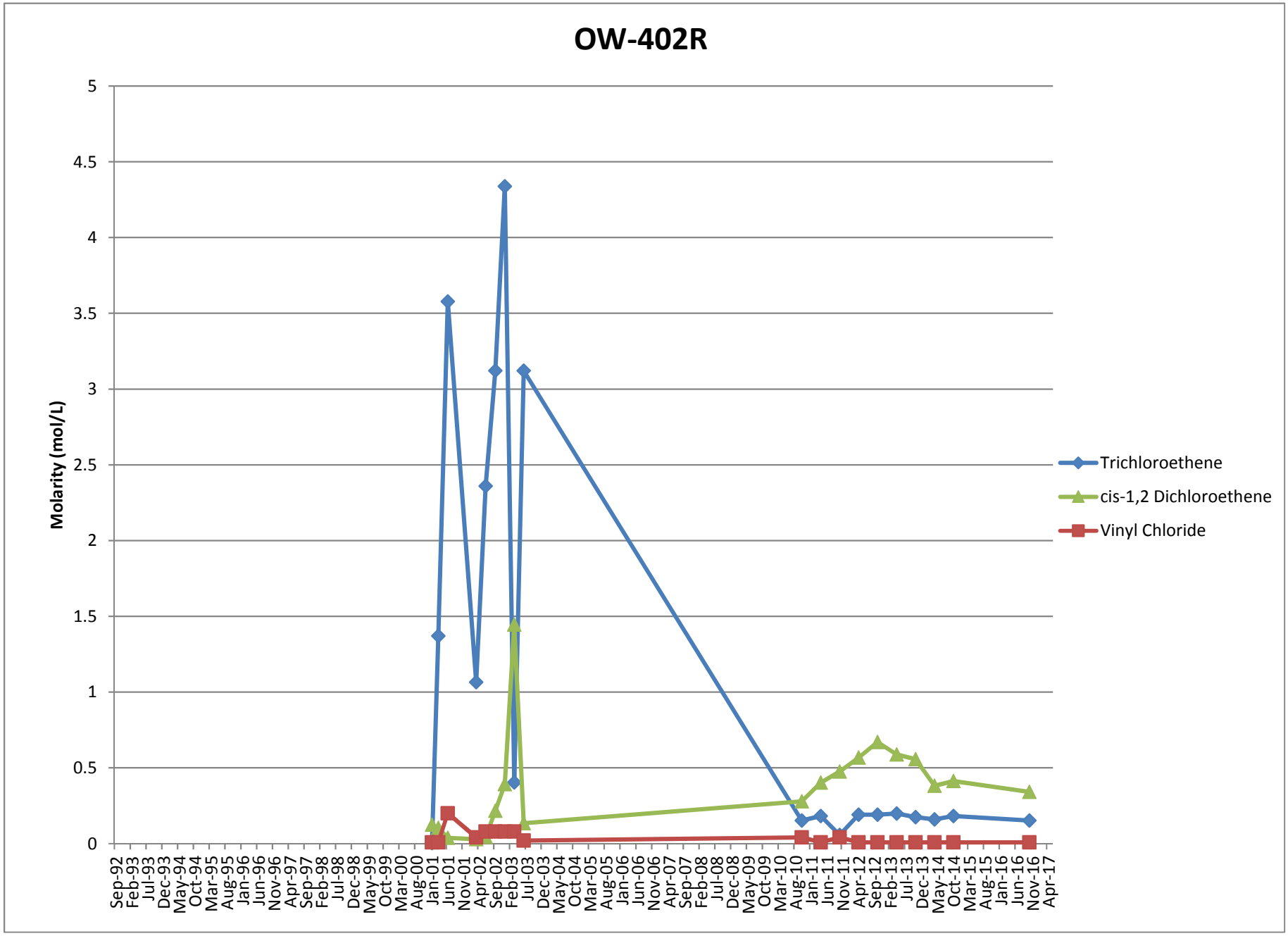
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-402R
Molarity (mol/L)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
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Jan-01
Jun-01
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Jan-11
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Apr-12
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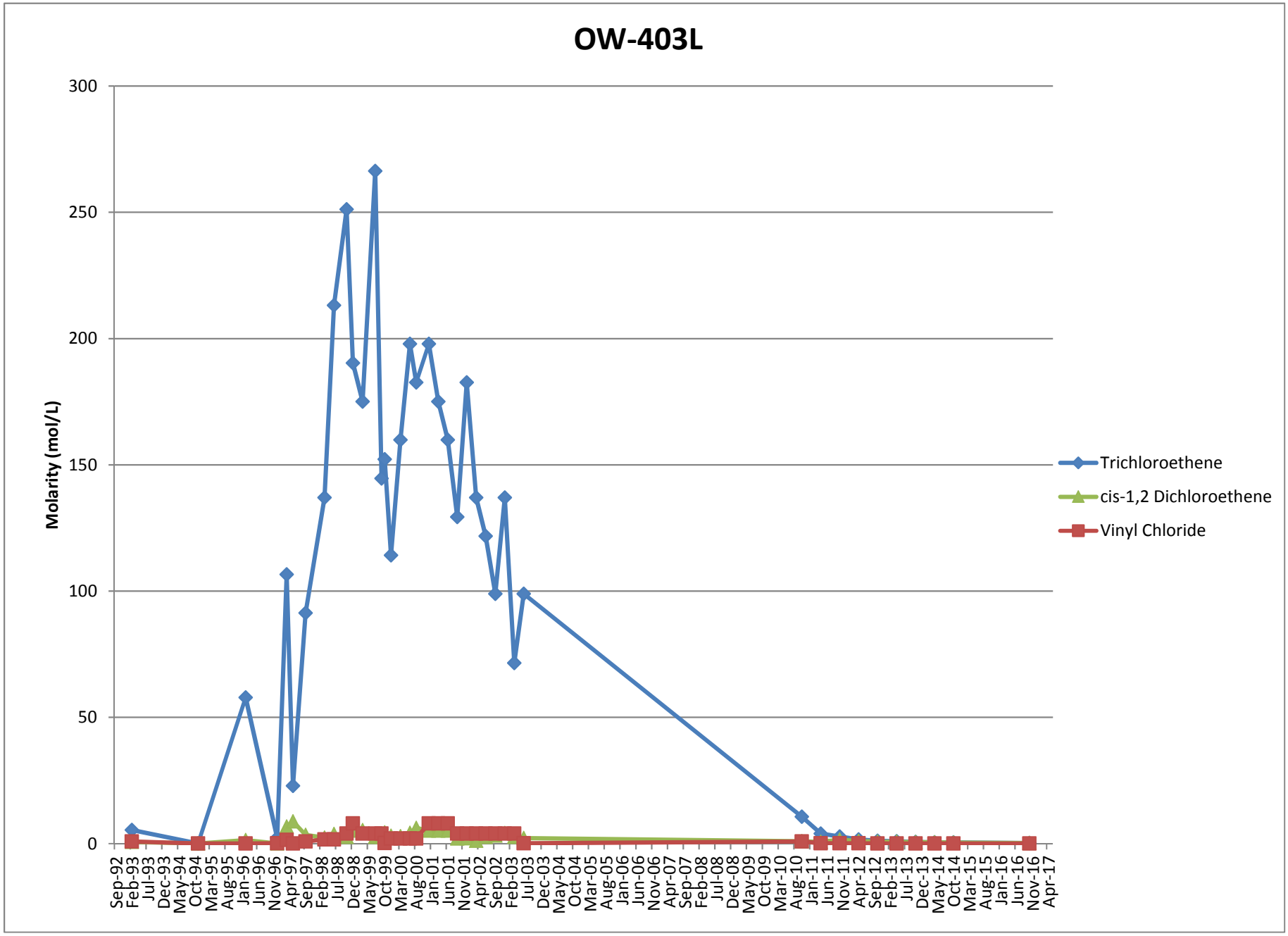
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-403L
Molarity (mol/L)
300
250
200
150
100
50
0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
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May-99
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Jan-01
Jun-01
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Apr-07
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Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
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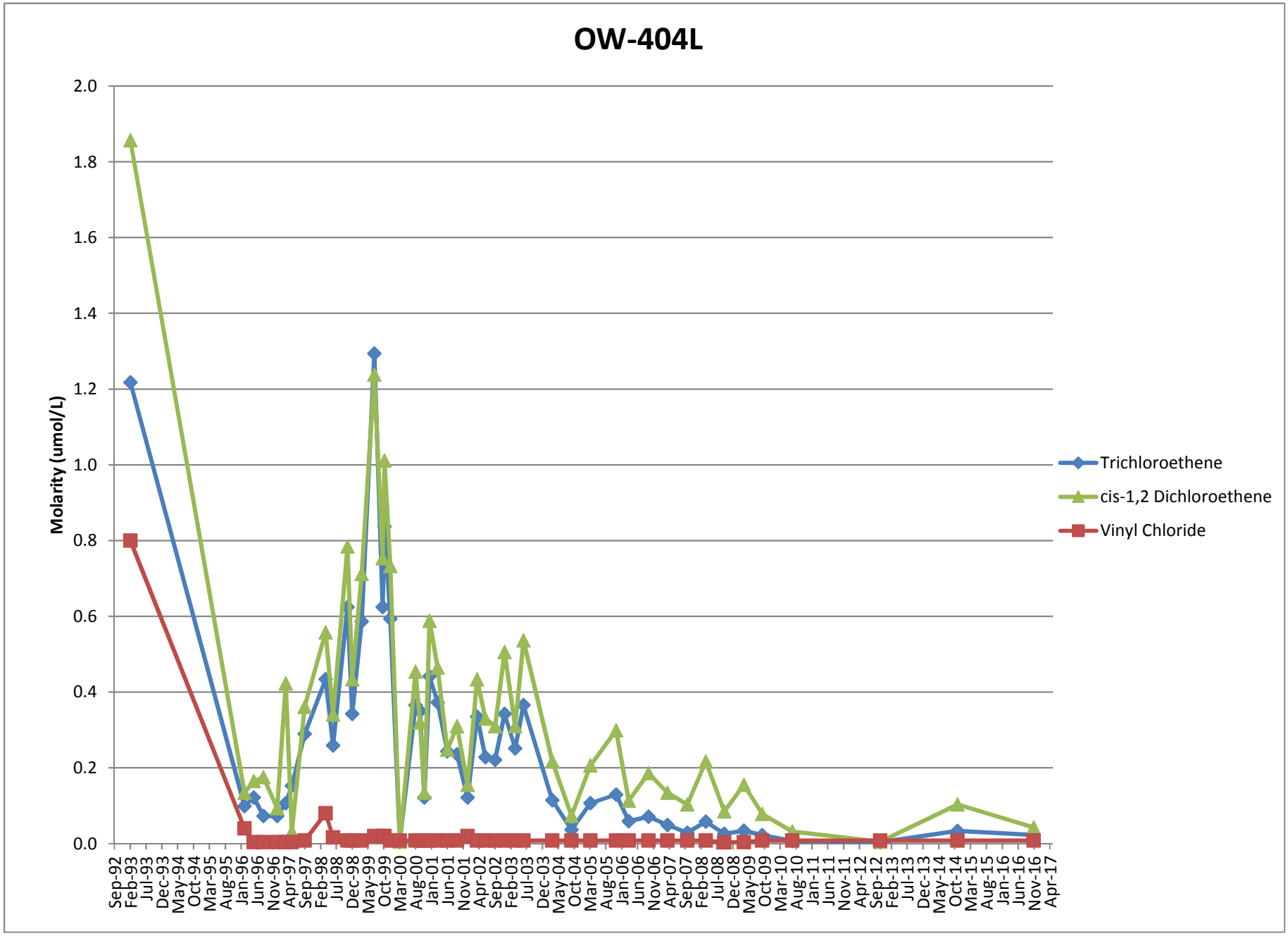
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-404L
Molarity (umol/L)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
Jul-98
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Jan-01
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Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
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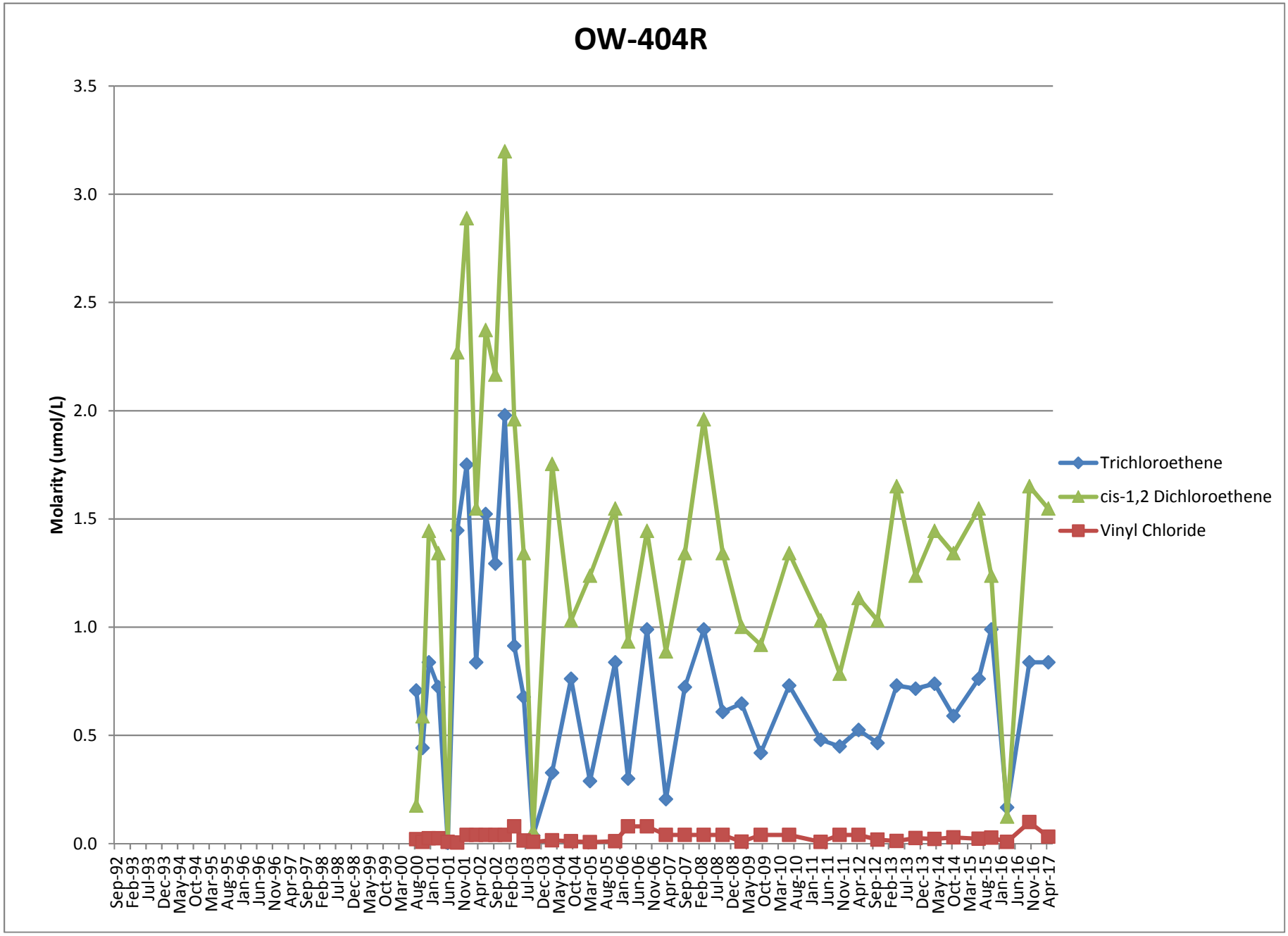
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-404R
Molarity (umol/L)
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
Feb-98
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May-99
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Mar-00
Aug-00
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Nov-01
Apr-02
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Nov-06
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Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
Oct-14
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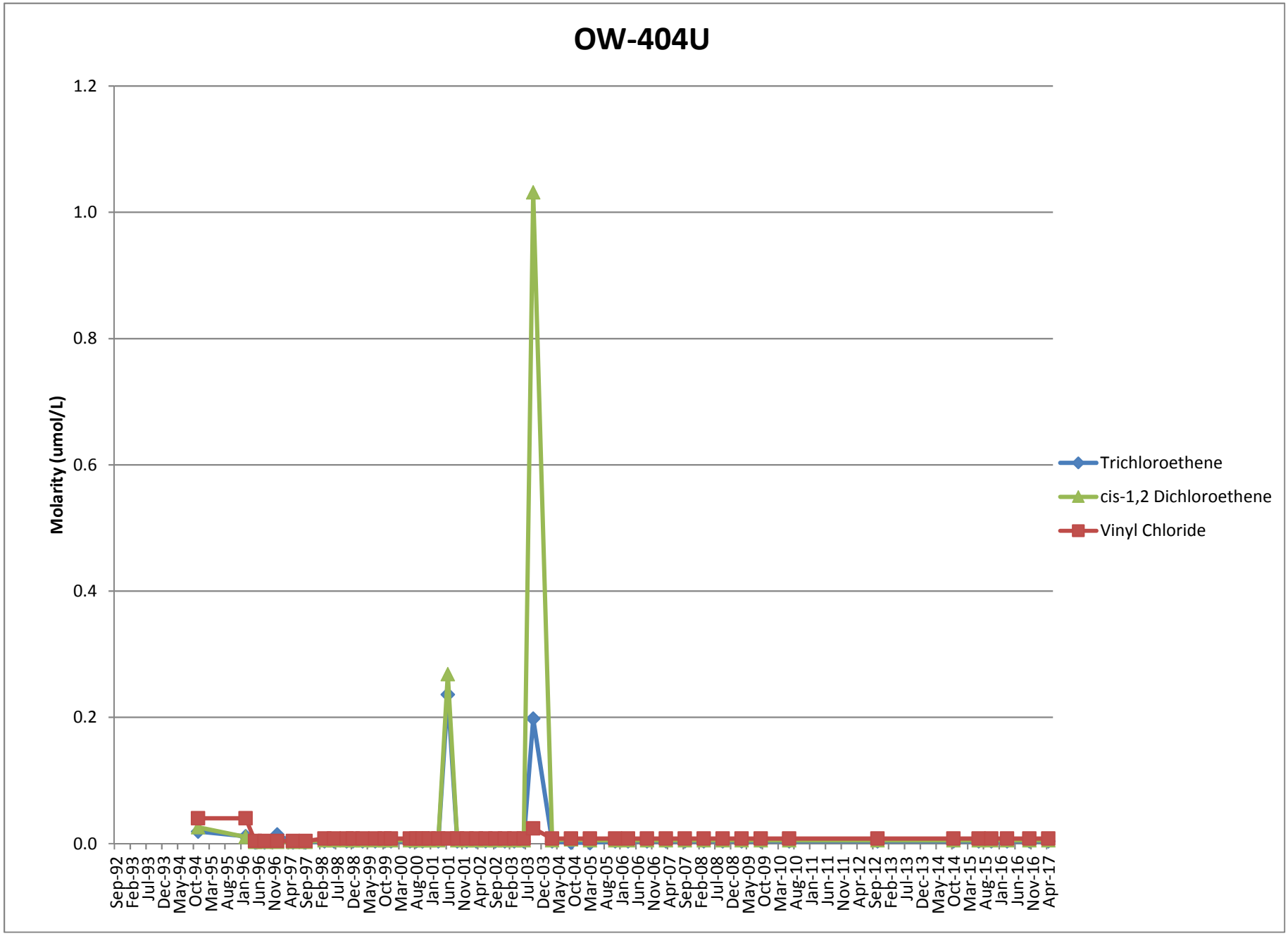
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


OW-404U
Molarity (umol/L)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
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Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
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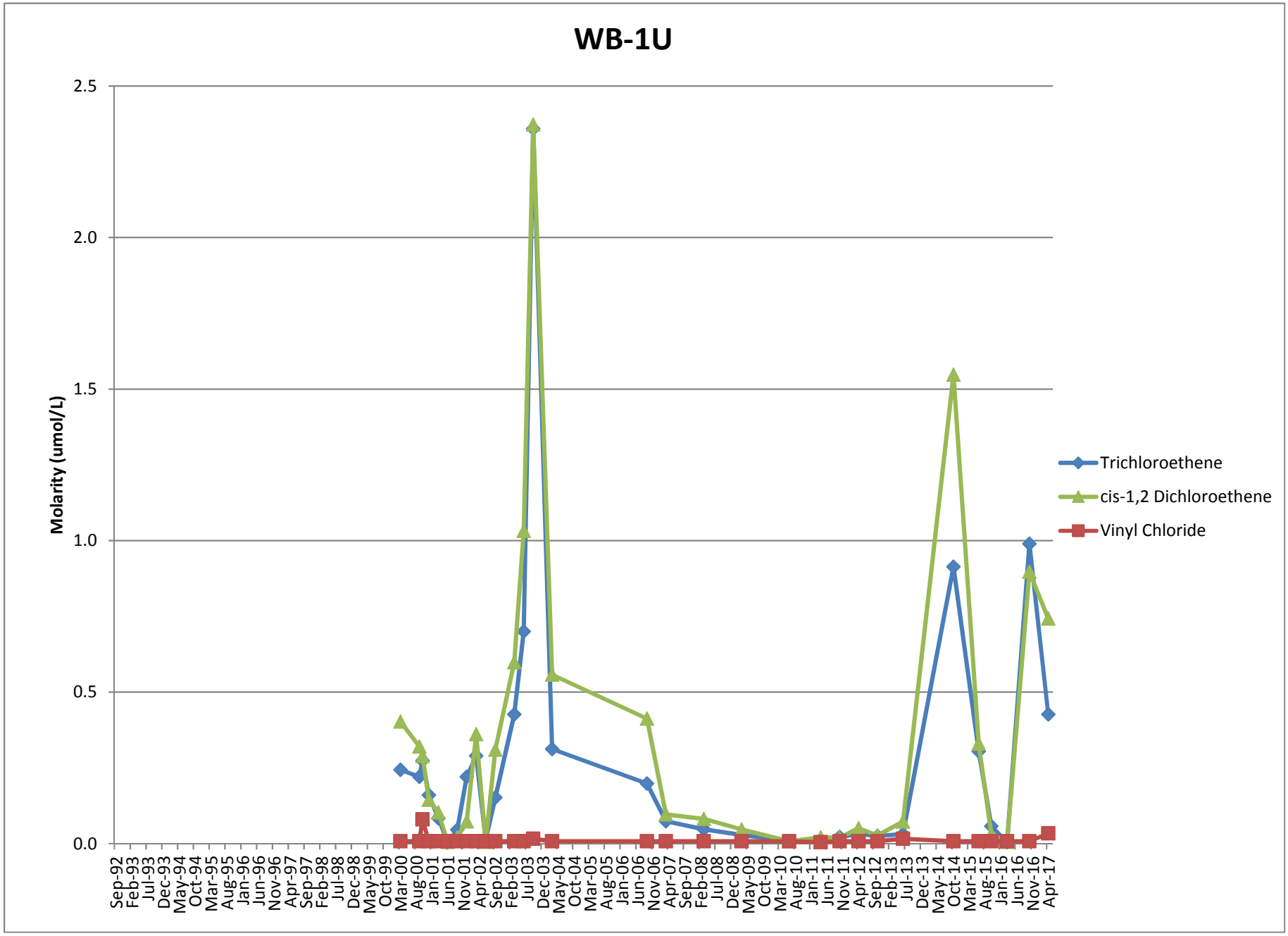
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


WB-1U
Molarity (umol/L)
2.5
2.0
1.5
1.0
0.5
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
Sep-97
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Oct-09
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Jan-11
Jun-11
Nov-11
Apr-12
Sep-12
Feb-13
Jul-13
Dec-13
May-14
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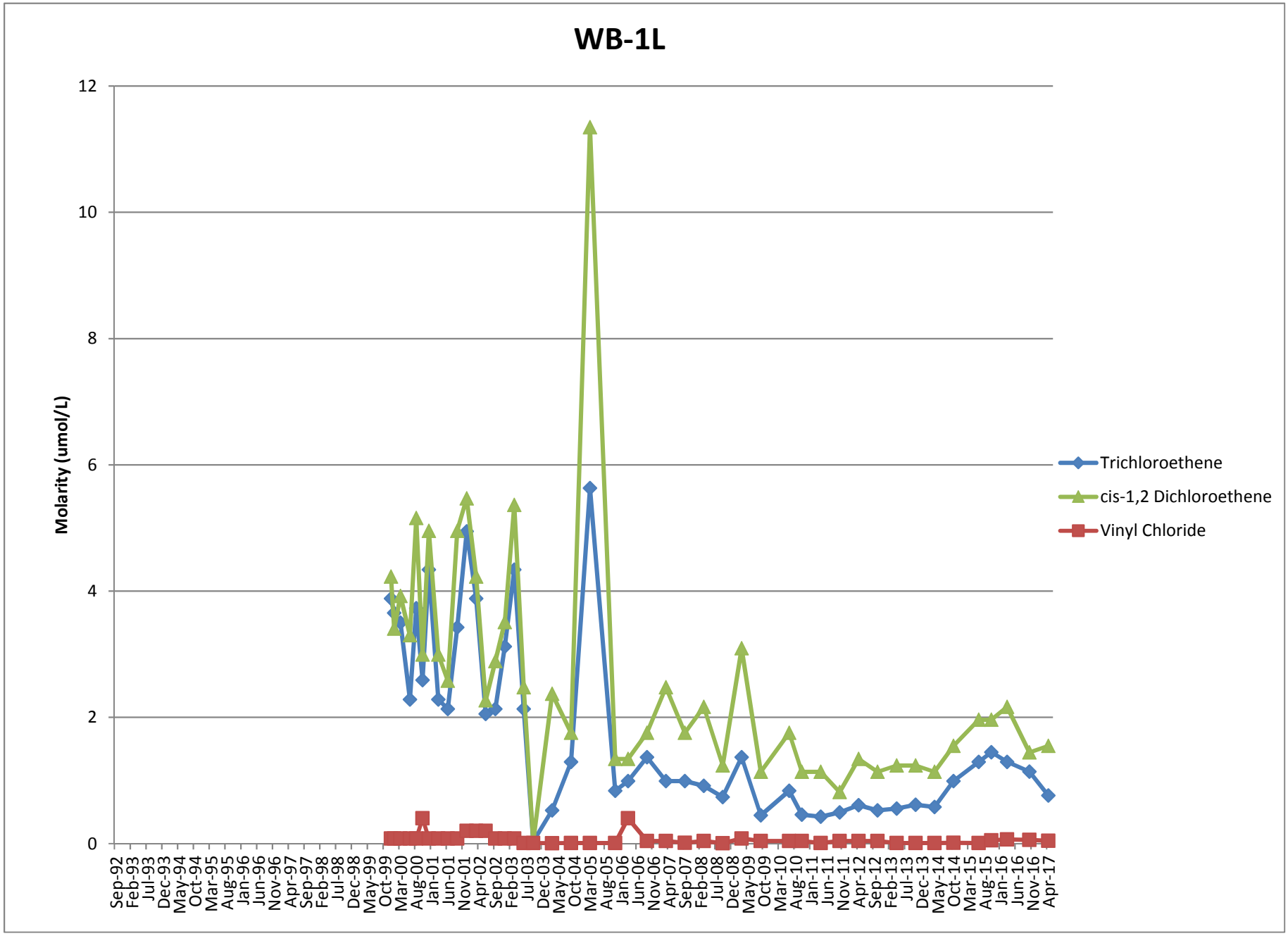
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


WB-1L
Molarity (umol/L)
12
10
8
6
4
2
0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
Apr-97
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Jul-13
Dec-13
May-14
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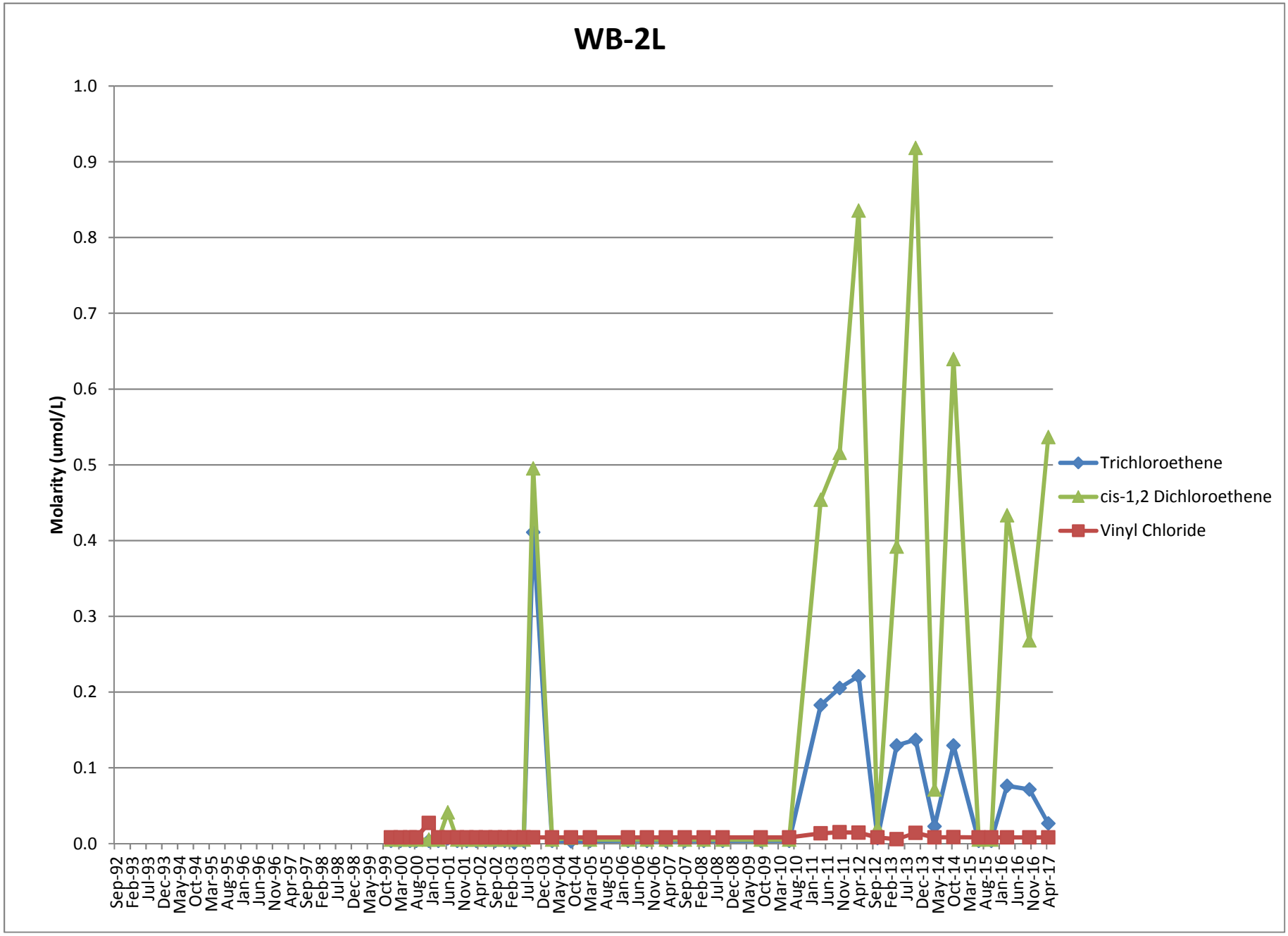
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


WB-2L
Molarity (umol/L)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
Jun-96
Nov-96
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Feb-13
Jul-13
Dec-13
May-14
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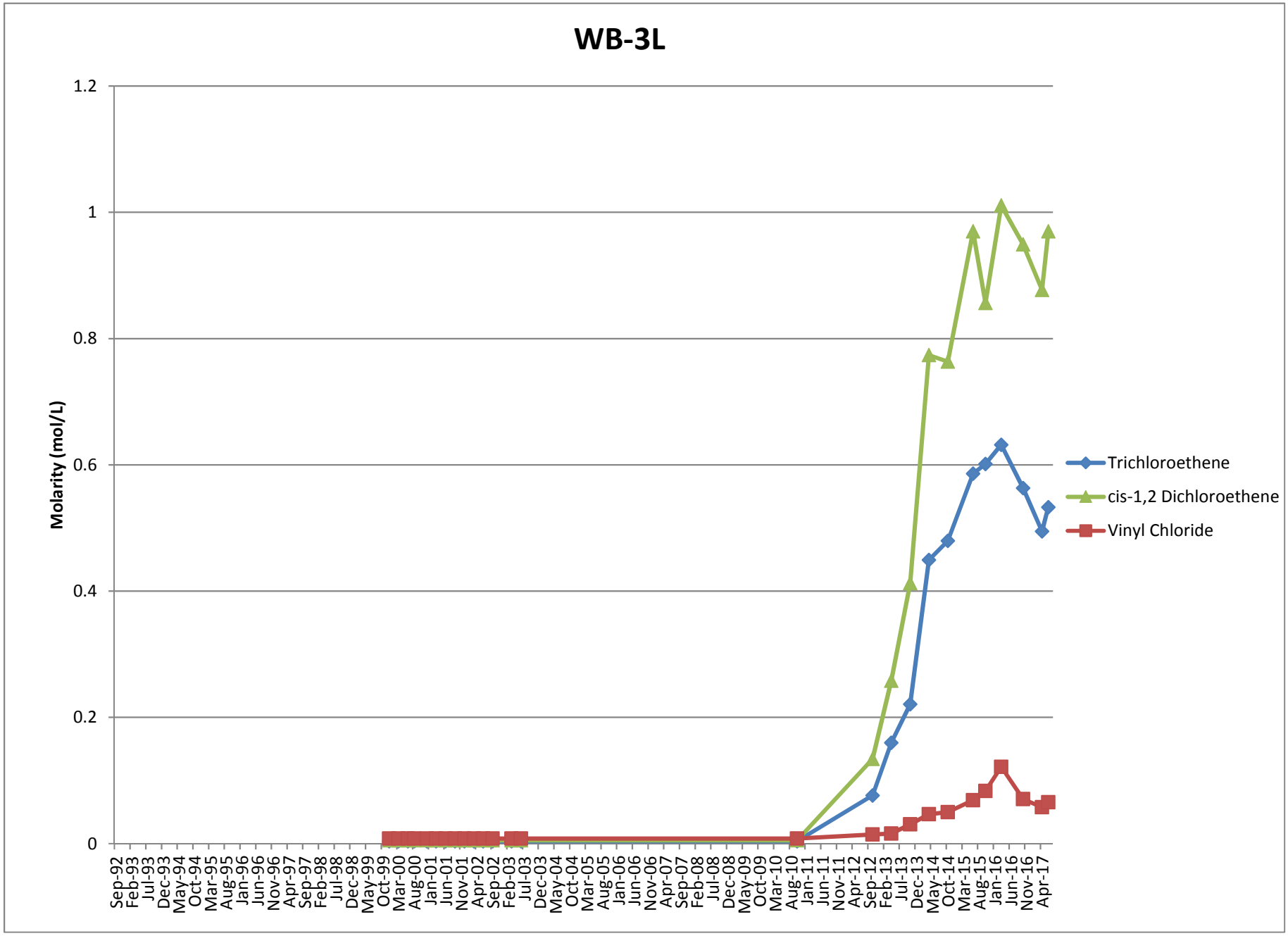
Jan-16
Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


WB-3L
Molarity (mol/L)
1.2
1
0.8
0.6
0.4
0.2
0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
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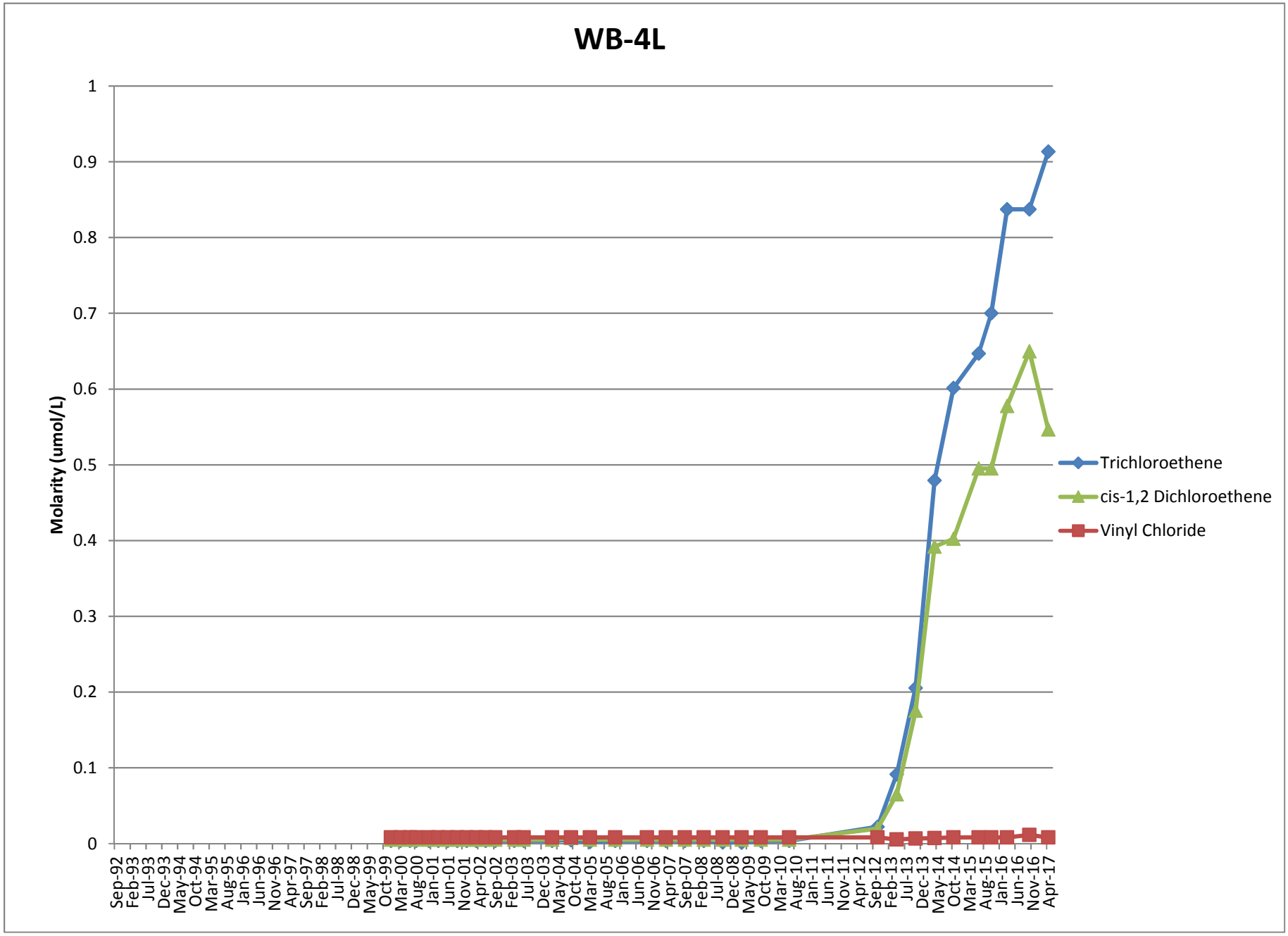
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride


WB-4L
Molarity (umol/L)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Sep-92
Feb-93
Jul-93
Dec-93
May-94
Oct-94
Mar-95
Aug-95
Jan-96
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Nov-96
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Jun-16
Nov-16
Apr-17
Trichloroethene
cis-1,2 Dichloroethene
Vinyl Chloride

**Notes:**

1. In instances where a constituent was not detected, half of the reporting limit was used as the concentration.
2. Data that was reported with a qualifier was treated as if it was not reported with a qualifier in this analysis. In general, this led to a more conservative analysis.
3. VOC = Volatile Organic Compounds

# APPENDIX D

DATA VALIDATION

**Appendix D**
**Data Validation**

GZA performed a data validation for the groundwater samples collected in April and June 2017 from the Former Digital Equipment Corporation facility in San German, Puerto Rico (the "Site"). In accordance with Revision 4 of the Quality Assurance Project Plan (QAPP) submitted by GZA GeoEnvironmental, Inc. (GZA) in April 2015 and revised in October 2015, the groundwater samples collected in April and June 2017 were analyzed for volatile organic compounds (VOCs[1]) by TestAmerica Laboratories, Inc. in Tampa, Florida (NELAP E84282), certified by a Puerto Rico-certified chemist, and validated by a GZA chemist. GZA performed a data validation in accordance with the performance requirements and the quality assurance/quality control (QA/QC) limits established in the QAPP. In addition, GZA reviewed the U.S. Environmental Protection Agency (EPA) Region II Data Validation Standard Operating Procedure (SOP) #HW-33A Revision 0.

The quality assurance/quality control (QA/QC) limits are included in the QAPP and the validation actions (including accepting, rejecting, or qualifying data) are included in the SOP. The intrinsic biodegradation (IB) results presented in Table 2 were not certified by a Puerto Rico-certified chemist or validated by a GZA chemist. Only the VOC target analytes and their associated QA/QC components were reviewed in the data validation. Overall, the QA/QC results met the limits established by the QAPP with the exception of some minor deficiencies discussed in this appendix. The minor deficiencies would not affect the usability of the data evaluated in this data validation.

For the April 2017 sampling event, the groundwater samples[2] were collected from 29 wells on April 11, 12, and 13. During the June 2017 sampling event, the groundwater samples were collected from 6 wells (i.e., GZ-505R, WB-3L, GZ-702R, GZ-701R, GZ-703R, and OW-304L) on June 26 and 27. The June 2017 sampling event was limited to the above referenced six wells due to the fact that the laboratory had reported headspace exceedances in the associated sample vials received in April 2017. The headspace exceedance indicated a potential for low bias in associated results.

The samples were analyzed via the EPA 8260B Method. The April 2017 data were reported in sample delivery group (SDG) 80084[3] and the June 2017 data were reported in SDG 81492[3]. This data validation includes evaluations of the QA/QC results to assess precision, accuracy, completeness, and data usability. The QA/QC results included the results for surrogate recoveries, holding time, preservation, laboratory reporting limits (RLs), internal standard area counts and retention times, initial calibration (ICAL) relative response factors (RRFs) and relative standard deviations (RSDs), continuing calibration verification (CCV) RRFs and percent differences (%D), temperature blanks, trip blanks, field blanks, field duplicate samples, laboratory method blanks, laboratory duplicate analysis, Laboratory Control Spike (LCS)/Laboratory Control Spike Duplicate (LCSD) samples, and Matrix Spike (MS)/Matrix Spike Duplicate (MSD) samples, which were collected/prepared and analyzed to assess the potential effects of field sampling conditions, storage and transportation of samples, nature of sample matrix, and laboratory conditions and analysis.

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[1] Primarily chlorinated VOCs plus several organobromine compounds.
[2] Only VOC results were validated and therefore, unless otherwise specified, only VOC results were discussed in this data validation.
[3] Samples were combined into one SDG for Puerto Rico certification purposes. Samples were analyzed in batches of 20 or fewer samples. In subgroups 80120, 80121, and 80146, the temperature blank was assigned sample ID -1.

The laboratory reported that the sample shipments were received in good condition, and the samples were properly preserved at temperatures within the acceptable range although headspace in exceedance of 6 mm was noted in all vials associated with samples GZ-505R, WB-3L, GZ-702R, GZ-701R, GZ-703R DUP, GZ-703R, and OW-304L collected during the April 2017 sampling event. The results associated with these samples were considered to be potentially biased low. Analytical results for wells resampled in June 2017 were consistent with April 2017 results, indicating the headspace exceedance did not significantly bias the data. Associated non-detect results were qualified with a "UJ" and associated detections were qualified with a "J". All samples collected in April and June were analyzed within the holding time specified in the QAPP and USEPA Region II SOP (i.e., 14 days).

The reporting limits were based on the sample-specific dilution factor and the lowest calibration standard. The reporting limits for the following analytes were elevated compared to the Puerto Rico Water Quality Standard (PRWQS) or USEPA Maximum Contaminant Level (MCL) in the April 2017 sampling round.

- The reporting limits for 1,1,2,2-tetrachloroethane in samples OW-101 (10 µg/L), OW-304R (2 µg/L), and OW-304L (2 µg/L) vs. 1.7 µg/L;
- The reporting limit for 1,1,2-trichloroethane in sample OW-101 (10 µg/L) vs. 5.0 µg/L;
- The reporting limit for 1,1-dichloroethene in sample OW-101 (10 µg/L) vs. 7.0 µg/L;
- The reporting limit for 1,2-dichloroethane in sample OW-101 (10 µg/L) vs. 3.8 µg/L;
- The reporting limit for 1,2-dichloropropane in sample OW-101 (10 µg/L) vs. 5.0 µg/L;
- The reporting limit for carbon tetrachloride in sample OW-101 (10 µg/L) vs. 2.3 µg/L;
- The reporting limit for cis-1,2-dichloroethylene in sample OW-101 (100 µg/L) vs. 70 µg/L;
- The reporting limit for cis-1,3-dichloropropene in sample OW-101 (10 µg/L) vs. 3.4 µg/L;
- The reporting limit for dibromochloromethane in sample OW-101 (10 µg/L) vs. 4.00 µg/L;
- The reporting limit for methylene chloride in sample OW-101 (100 µg/L) vs. 46 µg/L;
- The reporting limit for tetrachloroethene in sample OW-101 (10 µg/L) vs. 5 µg/L;
- The reporting limit for trans-1,3-dichloropropene in sample (10 µg/L) vs. 3.4 µg/L;
- The reporting limits for trichloroethene in samples OW-101 (100 µg/L), OW-304R (20 µg/L), GZ-505R DUP (10 µg/L), and OW-304L (20 µg/L) vs. 5 µg/L; and
- The reporting limits for vinyl chloride were elevated in all samples as the lowest calibration standard was 1.0 µg/L vs. the PRWQS of 0.25 µg/L.

The reporting limits for the following analytes were elevated compared to the PRWQS or MCL in the June 2017 sampling round.

- The reporting limits for trichloroethene in samples GZ-505R (10 µg/L), GZ-703R (10 µg/L), and OW-304L (20 µg/L) vs. 5 µg/L and
- The reporting limit for vinyl chloride was elevated in all samples as the lowest calibration standard was 1.0 µg/L vs. the PRWQS of 0.25 µg/L.

Although these reporting limits were elevated compared to the relevant water quality standards, the method detection limits (MDLs) were below the standards for all impacted analytes, except vinyl chloride. Because of limitations of the laboratory equipment, an MDL of 0.25 µg/L for vinyl chloride cannot be obtained. The lowest practically obtainable MDL (0.71 ug/L) was used instead. Elevated reporting limits for other analytes were the result of dilutions necessary to attain results within the calibration range.

**ACCURACY**

Data accuracy was assessed based on percent recoveries (%R) from spiked samples expressed as a percent of the true or known concentration of the assessed constituent, surrogate recoveries, blank results, CCV, ICAL, internal standards results, mass spectra, and instrument performance checks.

Blanks

The QA/QC program included the analysis of one field blank and one trip blank associated with each day of sampling on April 11, 2017, April 13, 2017, and June 26, 2017, and two trip blanks, one field blank, and two equipment blanks associated with the April 12$^{th}$ sampling, and laboratory method blanks corresponding to each analytical batch of samples.

1,2-Dichlorobenzene was detected above the MDL in the field blanks collected on April 11$^{th}$ (0.79 µg/L) and 12$^{th}$ (0.63 µ/L), and 1,4-Dichlorobenzene was detected above the MDL in all three April 2017 field blanks at concentrations of 1.8 µg/L on April 11$^{th}$ and 1.3 µg/L on April 12$^{th}$ and 13$^{th}$. 1,2-Dichlorobenzene (0.65 µg/L) and 1,4-Dichlorobenzene (1.3 µg/L) were detected above the MDL in one of the equipment blanks collected on April 12$^{th}$. No analytes were detected above MDLs in the second equipment blank collected on April 12$^{th}$, the field blank collected on June 26$^{th}$, trip blanks, or associated laboratory method blank sample results. Neither 1,2-Dichlorobenzene nor 1,4-Dichlorobenzene was detected in any groundwater sample; therefore, no qualifiers were added based on the blank sample results. The reporting limit for 1,2-dichlorobenzene and 1,4-dichlorobenzene in all impacted blanks was 1.0 µg/L. 1,2-dichlorobenzene was not detected above the reporting limit in any blanks.

Spike Recoveries in LCS and LCSD Samples

The spike recoveries in the LCS/LCSD samples associated with these monitoring events were within the control limits established by the QAPP (70-130%), except for the following:

- The bromomethane recovery was below QAPP limits (70-130%) in the LCS associated with batch 181808 (66%) affecting samples OW-404R, OW-404U, WB-2L, WB-1U, GZ-504L, WB-1L, WB-1L DUP, GZ-504R, GZ-501L, OW-101L, and GZ-503L collected in April 2017 and in the LCS and LCSD associated with batch 184646 (63%/60%) affecting samples GZ-505R, GZ-701R, GZ-702R, GZ-703R, OW-304L, and WB-3L collected in June 2017. All associated bromomethane results were non-detect and qualified with "UJ".
- The dibromochloromethane recoveries were below QAPP limits in the LCS associated with batch 182028 (68%) affecting samples GZ-519U, OW-101, GZ-505R, OW-307, WB-3L, WB-3L DUP, WB-2U, and GZ-701L collected in April 2017, in the LCS associated with batch 182037 (69%) affecting samples OW-304R, GZ-702R, GZ-601R, GZ-505R DUP, GZ-701R, GZ-703R DUP, GZ-703R, GZ-702U, GZ-506R, and OW-304L collected in April 2017, and in the LCS and LCSD associated with batch 182052 (65%/69%) affecting samples IW-3, WB-4L, IW-2, and IW-1 collected in April 2017. All associated dibromochloromethane results were non-detect and qualified with "UJ".
- The trans-1,3-dichloropropene recoveries were below the QAPP limits in the LCS associated with batch 182028 (69%) affecting samples GZ-519U, OW-101, GZ-505R, OW-307, WB-3L, WB-3L DUP,

WB-2U, and GZ-701L collected in April 2017, in the LCSD associated with batch 182037 (68%) affecting samples OW-304R, GZ-702R, GZ-601R, GZ-505R DUP, GZ-701R, GZ-703R DUP, GZ-703R, GZ-702U, GZ-506R, and OW-304L collected in April 2017, and in the LCS and LCSD associated with batch 182052 (66%/68%) affecting samples IW-3, WB-4L, IW-2, and IW-1 collected in April 2017. All associated trans-1,3-dichloropropene results were non-detect and qualified with "UJ".

- The dichlorodifluoromethane recovery was below QAPP limits (70-130%) in the LCS associated with batch 182037 (64%) affecting samples OW-304R, GZ-702R, GZ-601R, GZ-505R DUP, GZ-701R, GZ-703R DUP, GZ-703R, GZ-702U, GZ-506R, and OW-304L collected in April 2017 and in the LCS associated with batch 184646 (61%) affecting samples GZ-505R, GZ-701R, GZ-702R, GZ-703R, OW-304L, and WB-3L collected in June 2017. All associated dichlorodifluoromethane results were non-detect and qualified with "UJ".

An LCSD was not analyzed in association with batch 181808 in SDG 80084 due to analyst error, but a Matrix Spike Duplicate (MSD) was used to assess precision.

Spike Recoveries in MS/MSD Samples

MS/MSD samples were analyzed at an appropriate frequency (1/20 of project samples). For the April 2017 samples, MS analysis was performed for GZ-701R and IW-3 while MS/MSD analyses were performed for samples WB-1L and WB-3L. MS analysis was performed on sample GZ-701R collected in June 2017. The spike recoveries were within the control limits established by the QAPP (70-130%), except for the following:

- The dichlorodifluoromethane recoveries in samples WB-1L MS (0%), WB-1L MSD (0%), WB-3L MS (0%), WB-3L MSD (0%), April 2017 GZ-701R MS (55%), June 2017 GZ-701R MS (69%), and IW-3 MS (0%). A "UJ" qualifier was added to the non-detect dichlorodifluoromethane results in samples WB-1L, WB-3L, April 2017 GZ-701R, June 2017 701R, and IW-3 MS. Although the MS/MSD recoveries associated with samples WB-1L and WB-3L and the MS recovery associated with IW-3 were very low, the non-detect results were consistent with prior sampling events and considered estimated but usable;
- The cis-1,2-dichloroethylene recoveries in samples WB-1L MS (-56%), WB-1L MSD (-14%), WB-3L MS (-11%), and WB-3L MSD (11%). The original cis-1,2-dichloroethylene results were greater than four times the matrix spikes in both samples masking the results in the MS and MSD[4]; therefore, no qualifiers were added;
- The trichloroethene recoveries in samples WB-1L MS (-87%), WB-1L MSD (-45%), WB-3L MS (10%), and WB-3L MSD (28%). The original trichloroethene results were greater than four times the matrix spikes in both samples masking the results in the MS and MSD; therefore, no qualifiers were added;
- The trans-1,2-dichloroethene recovery in sample WB-1L MSD (142%). A "J" qualifier was added to the detected trans-1,2-dichloroethene result in sample WB-1L;
- The 1,1,-dichloroethene recovery in sample WB-1L MSD (138%). A "J" qualifier was added to the detected 1,1-dichloroethene recovery in sample WB-1L;

[4] The 4-time rule was used as it is standard practice specified in data validation standard operating procedures for EPA regions 1, 2, and 4.

- The trichlorofluoromethane recovery in sample WB-1L MSD (132%). Elevated recovery indicates potential for overestimation of associated sample results, and trichlorofluoromethane was not detected in sample WB-1L; therefore, a qualifier was not added;
- The carbon tetrachloride recoveries in samples WB-3L MS (67%), WB-3L MSD (69%), and IW-3 MS (61%). A "UJ" qualifier was added to the non-detect carbon tetrachloride results in samples WB-3L and IW-3;
- The dibromochloromethane recoveries in samples WB-3L MS (57%), WB-3L MSD (58%), IW-3 MS (52%), and April 2017 GZ-701R MS (55%). "UJ" qualifiers were added to the non-detect dibromochloromethane results in samples WB-3L, April 2017 GZ-701R, and IW-3;
- The cis-1,3-dichloropropene recoveries in samples WB-3L MS (64%), WB-3L MSD (69%), April 2017 GZ-701R MS (68%), and IW-3 MS (68%). "UJ" qualifiers were added to non-detect cis-1,3-dichloropropene results in samples WB-3L, April 2017 GZ-701R, and IW-3;
- The trans-1,3-dichloropropene recoveries in samples WB-3L MSD (57%), WB-3L MSD (59%), April 2017 GZ-701R MS (58%), and IW-3 MS (62%). "UJ" qualifiers were added to the non-detect trans-1,3-dichloropropene results in samples WB-3L, April 2017 GZ-701R, and IW-3;
- The vinyl chloride recoveries in samples WB-3L MS (65%), WB-3L MSD (67%), and April 2017 GZ-701R MS (68%). A "J" qualifier was added to the detected vinyl chloride result in WB-3L, and a "UJ" qualifier was added to the non-detect vinyl chloride result in April 2017 GZ-701R;
- The 1,2-dichlorobenzene recovery in sample IW-3 MS (53%). A "UJ" qualifier was added to the non-detect 1,2-dichlorobenzene recovery in sample IW-3;
- The 1,3-dichlorobenzene recovery in sample IW-3 MS (47%). A "UJ" qualifier was added to the non-detect 1,3-dichlorobenzene recovery in sample IW-3;
- The 1,4-dichlorobenzene recovery in sample IW-3 MS (50%). A "UJ" qualifier was added to the non-detect 1,4-dichlorobenzene recovery in sample IW-3;
- The 1,1,1,2-tetrachloroethene recovery in sample IW-3 MS (69%). A "UJ" qualifier was added to the non-detect 1,1,1,2-tetrachloroethene result in sample IW-3;
- The tetrachloroethene recovery in sample IW-3 MS (49%). A "UJ" qualifier was added to the non-detect tetrachloroethene result in sample IW-3; and
- The bromomethane recovery in June 2017 sample GZ-701R MS (69%). A "UJ" qualifier was added to the non-detect bromomethane result in sample June 2017 GZ-701R.

Surrogate Recoveries

The surrogate recoveries associated with all groundwater samples for this monitoring event were within the quality control limits established by the QAPP (80-120%).

Internal Standards

The internal standard area counts were within the QAPP limits of 50-200% of the initial calibration sequence areas and the retention times were within ±30 seconds from the retention time of the initial calibration.

Initial and Continuing Calibrations

The ICAL %RSD values were within the QAPP-established limit of 20%, and the RRFs were above the minimum RRF criterion established by the QAPP (0.050) for all reported analytes from both the April and June sampling events, except for bromomethane (0.0236) associated with Calibration ID 7240 (April 2017 sampling round). Associated results were not qualified because the USEPA Region II SOP indicates an RRF above 0.01 is acceptable for bromomethane.

The ICV and CCV %D exceedances of the QAPP-established limit of ±20% associated with the April 2017 results are noted below:

1. For ICV 660-181328/13, the %D values for bromomethane (72.1%), carbon tetrachloride (-21.7%), dibromochloromethane (-21.7%), and methylene chloride (26.8%) exceeded the 20% limit. No project samples were analyzed directly after this ICV; therefore, no data were qualified based on this ICV result.
2. For continuing calibration verification internal standard (CCVIS) 660-181808/3, the %D value for bromomethane (-38.6%) exceeded the 20% limit. The bromomethane results for the associated samples (OW-404R, OW-404U, WB-2L, WB-1U, GZ-504L, WB-1L, WB-1L DUP, GZ-504R, GZ-501L, OW-101L, and GZ-503L, including diluted sample results) were qualified (All bromomethane results were non-detect and were qualified "UJ".).
3. For CCVIS 660-182028/3, the %D values for bromomethane (-35.6%), chloroethane (26.1%), cis-1,3-dichloropropene (-20.1%), and dibromochloromethane (-23.6%) exceeded the 20% limit. The results of the above referenced analytes for the associated samples (GZ-519U, OW-101, GZ-505R, OW-307, WB-3L, WB-3L DUP, WB-2U, and GZ-701L, including diluted sample results) were qualified (detects were qualified "J" while non-detects were qualified "UJ").
4. For CCVIS 660-182028/31, the %D values for cis-1,3-dichloropropene (-22.6%), dibromochloromethane (-29%), and trans-1,3-dichloropropene (-28.9%) exceeded the 20% limit. The results of the above referenced analytes for the associated samples (GZ-519U, OW-101, GZ-505R, OW-307, WB-3L, WB-3L DUP, WB-2U, and GZ-701L, including diluted sample results) were qualified (All associated results were non-detect and were qualified "UJ".).
5. For CCVIS 660-182037/3, the %D values for dibromochloromethane (-23.2%) and trans-1,3-dichloropropene (-26.2%) exceeded the 20% limit. The dibromochloromethane and trans-1,3-dichloropropene results for the associated samples (OW-304R, GZ-702R, GZ-601R, GZ-505R DUP, GZ-701R, GZ-703R DUP, GZ-703R, GZ-702U, GZ-506R, and OW-304L, including diluted sample results) were qualified (All associated results were non-detect and were qualified "UJ".).
6. For CCVIS 660-182037/27, the %D values for 1,1,1-trichloroethane (-23.7%), 1,1-dichloroethene (-29.6%), bromoform (-24.6%), carbon tetrachloride (-37.4%), cis-1,3-dichloropropene (-28.6%), dibromochloromethane (-34.4%), dichlorodifluoromethane (-32.6%), tetrachloroethene (-30.5%), trans-1,3-dichloropropene (-34.9%), trichlorofluoromethane (-26.8%), and vinyl chloride (-21.1%) exceeded the 20% limit. The results of the above referenced analytes for the associated samples (OW-304R, GZ-702R, GZ-601R, GZ-505R DUP, GZ-701R, GZ-703R DUP, GZ-703R, GZ-702U, GZ-506R, and OW-304L, including diluted sample results) were qualified (detects were qualified "J" while non-detects were qualified "UJ").

7. For CCVIS 660-182052/3, the %D values for cis-1,3-dichloropropene (-22%), dibromochloromethane (-29.1%), and trans-1,3-dichloropropene (-29.8%) exceeded the 20% limit. The results of the above referenced analytes for the associated samples (IW-3, WB-4L, IW-2, and IW-1, including diluted sample results) were qualified (All associated results were non-detect and were qualified "UJ".).
8. For CCVIS 660-182052/31, the %D values for 1,1-dichloroethane (82.7%), 1,1,1,2-tetrachloroethane (72%), 1,1,1-trichloroethane (86.9%), 1,1,2,2-tetrachloroethane (82.1%), 1,1,2-trichloroethane (84.3%), 1,1-dichloroethene (78.6%), 1,2,3-trichloropropane (87.2%), 1,2-dichlorobenzene (105.6%), 1,2-dichloroethane (76.8%), 1,2-dichloropropane (75.8%), 1,3-dichlorobenzene (105.3%), 1,4-dichlorobenzene (100.7%), bromobenzene (107.8%), bromoform (58.1%), bromomethane (43.1%), carbon tetrachloride (70.8%), chlorobenzene (98.6%), chloroethane (100.4%), chloroform (88%), chloromethane (117.2%), cis-1,2-dichloroethene (84.1%), cis-1,3-dichloropropene (48.6%), dibromochloromethane (38.7%), dibromomethane (91.4%), dichlorodifluoromethane (115%), methylene chloride (78.2%), tetrachloroethene (80.9%), trans-1,2-dichloroethylene (84.3%), trans-1,3-dichloropropene (43.1%), trichloroethene (86.5%), trichlorofluoromethane (108.6%), and vinyl chloride (93.7%) exceeded the 20% limit. The results of the above referenced analytes for the associated samples (IW-3, WB-4L, IW-2, and IW-1, including diluted sample results) were qualified (detects were qualified "J" while non-detects were qualified "UJ").
9. For ICV 660-181895/12, the %D values for chloromethane (21%), dichlorodifluoromethane (30.3%), and vinyl chloride (27.2%) exceeded the 20% limit. No project samples were analyzed directly after this ICV; therefore, no data were qualified based on this ICV result.

The ICV and CCV %D exceedances of the QAPP-established limit of ±20% associated with June 2017 results are noted below:

1. For ICV 660-184051/12, the %D value for bromomethane (60.5%) exceeded the 20% limit. No project samples were analyzed directly after this ICV; therefore, no data were qualified based on this ICV result.
2. For CCVIS 660-184646/3, the %D value for bromomethane (-47.4%) exceeded the 20% limit. The bromomethane results for the associated samples (GZ-505R, GZ-701R, GZ-702R, GZ-703R, OW-304L, and WB-3L, including diluted sample results) were qualified (All associated results were non-detect and were qualified "UJ".).
3. For CCV 660-184646/29, the %D values for bromomethane (-25.5%) and chloroethane (41.1%) exceeded the 20% limit. The bromomethane and chloroethane results for the associated samples (GZ-505R, GZ-701R, GZ-702R, GZ-703R, OW-304L, and WB-3L, including diluted samples results) were qualified (All associated results were non-detect and were qualified ("UJ").

The CCV RRFs were above the associated minimum RRF established by the QAPP (0.050) for all analytes quantified using linear regression.

A closing CCV was not run in association with CCVIS 660-182102/3 (associated with diluted analysis of WB-4L collected in April for trichloroethene) due to analyst error.

Mass Spectra

The following criteria were considered to evaluate potential inconsistencies in the mass spectra.

- All ions present in the reference mass spectrum at a relative intensity greater than 10% should be present in the sample spectrum.
- The relative intensities of these ions should agree within ±20% between the reference and sample spectra.
- Ions present at greater than 10% in the sample mass spectrum, but not present in the reference spectrum, should be evaluated by a reviewer experienced in mass spectral interpretation.

In general, the mass spectra for the detected VOCs are consistent with the above guidelines (some minor deviations are not noted here) with the following exceptions. The mass spectra for 1,1-dichloroethene in GZ-702R, methylene chloride in IW-3, and vinyl chloride in IW-3 exhibited discrepancies from the respective reference spectra in SDG 80084. The mass spectra for trans-1,2-dichloroethene in GZ-505R, 1,1-dichloroethene in OW-304L, and tetrachloroethene in OW-304L, exhibited discrepancies from the respective reference spectra in SDG 81492. The results for these compounds were reviewed by the laboratory and the laboratory confirmed that all compounds were identified correctly.

Instrument Performance Check

All data generated were analyzed within the twelve-hour calibration interval after the associated instrument performance check bromofluorobenzene (BFB) injections.

No other data quality issues were identified.

**PRECISION**

Data precision was estimated by comparing analytical results between duplicate samples and calculating the relative percent difference (RPD) or absolute difference (AD) of the duplicate results (e.g., field duplicate samples and MS/MSD).

Field Duplicates

Four field duplicate pairs of samples (WB-1L/WB-1L DUP, WB-3L/WB-3L DUP, GZ-505R/GZ-505R DUP, and GZ-703R/GZ-703R DUP) were collected during the April 2017 sampling event. The RPDs were calculated for the analytes that were detected in both samples of the duplicate pair using the following equation:

$$RPD = \left|2 * 100 * \frac{S_1 - S_2}{S_1 + S_2}\right|$$

Where:

$S_1$ = primary sample result, and
$S_2$ = duplicate sample result

Calculated RPDs (in percentage) are only applicable when the sample values are greater than or equal to two times the respective analytical RLs. For the sample duplicate pairs with values greater than or equal to two

times the RL, the precision goal is a calculated RPD less than 20%. For the primary and duplicate sample results that are less than two times the respective analytical RL, the precision goal is met when the absolute difference (AD) between the results is less than two times the RL.

The results of WB-1L, WB-3L, GZ-505R, and GZ-703R and their respective field duplicates, met the QAPP limits.

Matrix Spike Duplicates

The RPDs for the MS/MSD pairs associated with groundwater samples for the April 2017 monitoring event were within the analyte-specific control limits (<20%) established by the QAPP. An MSD sample was not analyzed in association with the June 2017 samples.

LCS/LCSD Duplicates

The RPDs for the LCS/LCSD pairs associated with groundwater samples for this monitoring event were within the analyte-specific control limits (<20%) established by the QAPP with the following exceptions.

- The RPDs for chloroethane (22%) and 1,2,3-trichloropropane (24%) in the LCS/LCSD pair associated with analytical batch 182028 were slightly above the QAPP limit in SDG 80084.
- The RPDs for dichlorodifluoromethane (26%) and trichlorofluoromethane (21%) in the LCS/LCSD pair associated with analytical batch 182037 were slightly above the QAPP limit in SDG 80084.
- The RPD for dichlorodifluoromethane (27%) in the LCS/LCSD pair associated with batch 182102 was slightly above the QAPP limit in SDG 80084.
- The RPDs for dichlorodifluoromethane (40%) and trichlorofluoromethane (22%) in the LCS/LCSD pair associated with batch 184646 in SDG 81492.

The slight exceedances of LCS/LCSD RPD limits are not expected to significantly affect the sample results; no action was taken to qualify the data based on the LCS/LCSD duplicate results.

Laboratory Duplicates

The laboratory duplicate analysis was performed for sample GZ-601R collected in April 2017 and sample GZ-702R collected in June 2017. Trichloroethene and cis-1,2-dichloroethylene were detected in both GZ-601R and GZ-702R and associated laboratory duplicate samples, and the results were within the QAPP limits for RPDs (20%) and ADs (<2x RL). The precision of laboratory analysis met the QAPP limits.

**COMPLETENESS**

Groundwater samples were successfully obtained from each monitoring well targeted for sampling during the April 2017 sampling round except for GZ-504U, which was purged dry and did not recharge before the completion of the sampling event, and OW-402U, which was dry when gaged. The laboratory reported the requested analyses, and the deliverable data reports were complete.

Completeness is the ratio of the number of valid sample results to the total number of samples analyzed within a specific matrix and/or analysis. The percent complete is calculated by the following equation:

$$\%Complete = \frac{(number\ of\ valid\ measurements)}{(number\ of\ measurements\ planned)} * 100$$

Because all of the analytical data are considered valid and usable, the percent complete for the results presented in this report is 93.5 percent for all analyses, which meets the QC goal of 90 percent. The sufficiency of valid results to meet project objectives for the analysis of analytes will continue to be evaluated during future sampling events

**DATA QUALITY SUMMARY**

The field and laboratory quality control results indicate that the sampling and analyses performed in generating the data for these groundwater sampling rounds were generally consistent with the analytical methods and the QAPP and provided data suitable for project objectives. Analytical results for wells resampled in June 2017 were consistent with April 2017 results, indicating the headspace exceedance did not significantly bias the data. Where appropriate, data were qualified based on GZA's review as recommended in the USEPA Region II SOP. The data are acceptable and can be used for decision-making purposes. The limitations identified by the applied qualifiers, however, should be considered when using the data.

**REFERENCES**

GZA, 2015, Quality Assurance Project Plan, Revision 4, Hewlett-Packard Voluntary Remedial Actions, San German, Puerto Rico (submitted as Appendix B of Intrinsic Biodegradation Study Work Plan), October.

USEPA Region II, 2015, SOP #HW-33A Revision 0, SOM02.2, Low/Medium Volatile Data Validation, July.