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# Transmittal

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| To: | Alaska Department of Environmental Conservation | Attn: | Mr. Dennis Harwood |
| | 555 Cordova Street | Date: | December 17, 2012 |
| | Anchorage, AK 99501 | Project: | 31-1-11566-006 |
| | | Re: | Six Mile Richardson Highway<br>Fairbanks, Alaska |

The following items are enclosed:

| Copies | Description |
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| 1 | 2012 Long-Term Groundwater Monitoring Report,<br>Six Mile Richardson Highway, Fairbanks, Alaska |
| 1 | CD |
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**By:** Julie Keener, PE
**Title:** Engineer

# 2012 Long-Term Groundwater Monitoring Report
# Six Mile Richardson Highway
# Fairbanks, Alaska

December 2012

Submitted To:
Alaska Department of Environmental Conservation
Division of Spill Prevention and Response
555 Cordova Street
Anchorage, Alaska 99501

By:
Shannon & Wilson, Inc.
2355 Hill Road
Fairbanks, Alaska 99709-5326

31-1-11566-006

# 2012 Long-Term Groundwater-Monitoring Report
# Six Mile Richardson Highway
# Fairbanks, Alaska

December 2012

Prepared For:

Alaska Department of Environmental Conservation
Division of Spill Prevention and Response
555 Cordova Street
Anchorage, Alaska 99501

Prepared By:

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Shannon & Wilson Project Number: 31-1-11566-006

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## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ADEC | Alaska Department of Environmental Conservation |
| bgs | below ground surface |
| BTEX | benzene, toluene, ethylbenzene, and xylenes |
| °C | degrees Celsius |
| $C_0$ | initial concentration |
| $C_t$ | concentration at time "t" |
| CCV | continuing calibration verification |
| CSM | Conceptual Site Model |
| *e* | 2.7183, base of natural logarithm |
| EPA | Environmental Protection Agency |
| k | first-order rate constant |
| LCS | laboratory control sample |
| LCSD | laboratory control sample duplicate |
| LOQ | limit of quantitation |
| MCL | maximum contaminant level |
| MS | matrix spike |
| MSD | matrix spike duplicate |
| µg/L | micrograms per liter |
| QA | quality assurance |
| QC | quality control |
| RFP | request for proposal |
| RPD | relative percent difference |
| t | time |
| TCE | trichloroethene |
| VOCs | volatile organic compounds |

# EXECUTIVE SUMMARY

Shannon & Wilson has completed the 2012 long-term groundwater monitoring in the Six Mile Richardson Highway area (Figure 1), southeast of Fairbanks, Alaska. This year's effort involved collecting samples from monitoring wells to assess trichloroethene (TCE) concentration trends at wells with limited data or where no trend is apparent. We also collected samples from select residential water-supply wells to measure concentrations of TCE and other volatile organic compounds (VOCs). Ecowater Systems, Inc., of Fairbanks completed the required annual maintenance of four of the previously installed residential water-treatment systems. The owner of the fifth residence arranged for maintenance of his system this spring.

We evaluated monitoring-well sample results with respect to Alaska Department of Environmental Conservation (ADEC) groundwater-cleanup levels, and drinking-water sample results with respect to the U.S. Environmental Protection Agency (EPA) Maximum Contaminant Levels (MCLs). For many of the VOC analytes of concern, including TCE, these regulatory levels are equivalent. TCE concentrations in samples from none of the five residences and one of the three monitoring wells sampled in 2012 exceeded the TCE MCL/groundwater-cleanup level (5 micrograms per liter [µg/L]). We found the highest TCE concentration (5.40 µg/L) in the sample from well MW-35. No other VOC analyte exceeded its MCL or groundwater-cleanup level.

All five residential wells have sufficiently large data sets to statistically evaluate whether TCE concentrations are changing over time. TCE concentrations are decreasing at the "old" (western) well at 1410 Richardson Highway, 1430 Richardson Highway, 1357 Sloan Street, and 1366 Sloan Street. There is no significant TCE concentration trend at 1369 Sloan Street.

The EPA recently released updated toxicity information for TCE and tetrachloroethene (PCE), indicating TCE and PCE are more toxic than originally believed. The EPA intends to use the new toxicity factors in considering revisions to MCLs. This information has resulted in a reduction of EPA's regional screening levels for soil, indoor air, and tap water, and will likely result in a reduction of the federal MCL and ADEC's groundwater-cleanup level. The ADEC is evaluating the reduction in the TCE groundwater-cleanup level that would potentially result in a threshold of 1.8 µg/L TCE for continued residential-well sampling and/or treatment-system maintenance in the Six Mile Richardson Highway plume. The ADEC decided to use this proposed threshold until further information on a new groundwater-cleanup level is available. Prior to 2012, ADEC used 3.5 µg/L TCE as the threshold for continued residential-well sampling and/or treatment-system maintenance.

In 2011, the 1366 Sloan Street residence yielded three samples below the ADEC (former) 3.5-µg/L threshold; we collected an additional sample in 2012, which confirmed the TCE concentration was still below that threshold. We recommended the residence at 1366 Sloan Street be removed from future TCE-sampling programs, since samples have contained TCE at concentrations less than 3.5 µg/L for three events. The other residential wells sampled in 2011 (1530 and 1542 Eskimo Museum Lane, and 1438, 1511, and 1531 Richardson Highway) all had results less than 3.5 µg/L, and were not selected for sampling in 2012.

Sampling at 1366 Sloan Street was added to our scope of services at the request of the ADEC project manager due to the reduction in the TCE threshold. We continued sampling and treatment-system maintenance at 1430 Richardson Highway, 1410 Richardson Highway (the old well), 1357 Sloan Street, 1366 Sloan Street, and 1369 Sloan Street. One of the five residential wells sampled in 2012 yielded samples containing TCE less than the new threshold established by the ADEC (1.8 µg/L) for continued TCE sampling and/or treatment-system maintenance. Samples from 1410 and 1430 Richardson Highway and 1357 and 1369 Sloan Street have not yet dropped below the new threshold. Samples from 1366 Sloan Street have been less than the new threshold for two sampling events. We recommend continued sampling and treatment system maintenance at 1410 Richardson Highway, 1430 Richardson Highway, 1357 Sloan Street, 1366 Sloan Street, and 1369 Sloan Street until samples there fall below the new threshold for three sampling events.

Each of the monitoring wells sampled this year had a data set large enough to statistically evaluate whether TCE concentrations are changing over time. TCE concentrations at wells MW-26 and MW-35 are decreasing (Figure 2); the TCE half-life at MW-35 suggests the TCE cleanup level should be reached within 1.5 years. TCE concentrations at MW-13 increased through 2007, but since 2006, TCE concentrations have been lower than the peak TCE level measured in 2004 (5.63 µg/L); this may indicate a reversal of the overall trend, but even with the addition of 2012 datum, additional sampling is needed to assess this. No temporal concentration trend is evident at MW-13. Wells MW-26 and MW-35 exhibited no trend through 2009, but with the addition of the 2012 data, the trends are now decreasing.

We sampled two new wells, MW-15A and MW-16A (installed in 2007), in 2011 (Figure 1). Both yielded samples with TCE concentrations less than the groundwater-cleanup level. We recommend annual monitoring at the new wells to assess TCE concentrations and potential concentration trends. In addition, we recommend a survey be conducted to obtain location and elevation data for these wells.

In 2011, we sampled monitoring wells MW-38 and MW-39 near the downgradient end of the TCE plume to check whether TCE concentrations were stable in that area. The TCE concentration trend in MW-38 was found to be increasing, and MW-39 exhibited no trend. We recommend continued annual monitoring of these wells.

In 2011, there were five monitoring wells (MW-17, MW-18, MW-30, MW-32, and MW-35) whose TCE concentrations exceeded the ADEC groundwater-cleanup level. We recommended collecting samples every two years from these wells, which had TCE concentrations greater than 5 µg/L and exhibited decreasing trends to confirm those trends. We also recommended sampling the wells with TCE concentrations less than 5 µg/L and no discernable trend or an increasing trend (MW-13, MW-38, and MW-39) on an annual basis until a trend becomes apparent.

Contaminant-monitoring efforts should continue to track temporal and spatial trends in TCE, focusing on the downgradient half of the plume, since this is where potential exposures to TCE may occur through groundwater use. Future efforts should concentrate on tracking and modeling TCE concentrations to allow for better predictions of potential exposure, and assessing exposures attributable to VOC vapor intrusion into businesses and residences.

Our scope of services this year also included a vapor-intrusion evaluation in permanent structures within 100 feet of the 5-µg/L TCE plume. Our soil-gas and vapor-intrusion investigation results have been presented in a separate report.

# 2012 LONG-TERM GROUNDWATER MONITORING REPORT
# SIX MILE RICHARDSON HIGHWAY
# FAIRBANKS, ALASKA

## 1.0 INTRODUCTION

This report provides the results of the 2012 sampling effort for long-term groundwater monitoring of volatile organic compounds (VOCs), primarily trichloroethene (TCE), in the vicinity of Six Mile Village on the Richardson Highway, southeast of Fairbanks. It addresses the scope of work authorized under Notice to Proceed (NTP) 18-4002-12-026C, and includes data collected under previous groundwater-monitoring projects in the area to evaluate temporal TCE concentration trends.

Data obtained from monitoring and residential wells in the area over the last several years indicate TCE concentrations are declining at predictable rates at most locations, although there is no significant trend at a few locations. Monitoring well MW-13 yielded samples with increasing TCE concentrations through 2006. Since the concentration trends at most locations in the area have been relatively consistent and well-defined, the groundwater-monitoring effort in 2012 focused on assessing contaminant trends at wells with limited data or where no TCE concentration trend is evident, and continuing TCE measurements in several residential wells within the TCE plume.

The Alaska Department of Environmental Conservation (ADEC) request for proposal (RFP) to perform this round of sampling included the following tasks:

- sampling five residential wells in the Six Mile Richardson Highway area for VOCs to determine groundwater VOC concentrations;
- sampling three groundwater-monitoring wells in the Six Mile Richardson Highway well network to determine groundwater VOC concentrations;
- conducting residential water-treatment-system maintenance and replacing carbon treatment-system media at four residences (the owner of the fifth system arranged to have his system maintained in May 2012); and
- preparing a summary report that includes the results of residential and monitoring well sampling.

We prepared a human-health conceptual site model (CSM) for contamination in the Six Mile Richardson Highway area in 2006. The CSM indicated there are a number of potentially complete contaminant-exposure pathways in the area, many of which are associated with

contaminated groundwater; soil and air exposures may also be complete for some receptors, though these exposure risks appear to be minor. The main group of potentially affected receptors consists of area residents whose homes are above contaminated groundwater. Groundwater TCE exposures (i.e., ingestion, dermal absorption, and inhalation of volatile compounds from tap water) for these residents appear to be mitigated by water-treatment systems installed at residences in the area, though there are residences in the area without these systems. Water-treatment systems do not provide protection from indoor-air exposures related to air infiltration from contaminated groundwater beneath residences, so this remains a potential unresolved risk in the area.

In 2009, we identified permanent structures within 100 feet of the 5-micrograms per liter (µg/L) TCE plume. Our 2011 and 2012 scope of services included performing soil-gas sampling and a preliminary vapor-intrusion evaluation. Those results are presented in a separate report.

This report presents the analytical results for groundwater samples collected from five residences and three groundwater-monitoring wells. It also provides an assessment of temporal trends in TCE concentration for the wells sampled in 2012, and recommendations for future sampling in the area.

## 2.0 SAMPLING AND DATA ANALYSIS

We collected groundwater samples from select residential wells and monitoring wells in the TCE plume in the Six Mile Richardson Highway area. The locations of monitoring and water-supply wells recently sampled are shown in Figure 1, along with the location of the plume (1- and 5-µg/L concentration contours), estimated from several years of groundwater data obtained from 30-foot-deep monitoring wells and shallow water-supply wells.

We performed sampling in August 2012. We collected drinking-water samples from five residential systems and groundwater-monitoring samples from three monitoring wells (MW-13, MW-26, and MW-35) as requested in a June 29, 2012, e-mail from the ADEC project manager. All five of these residential wells are equipped with carbon-filtration treatment systems to remove TCE and other VOCs from the drinking water.

We conducted sampling of monitoring and residential wells in general accordance with our *Well Sampling and Treatment System Maintenance Work Plan*, dated July 6, 2011. This report includes data collected during earlier sampling exercises, but not details regarding collection, analysis, and quality assurance/quality control (QA/QC) of groundwater samples prior to this year. However, samples collected or submitted for laboratory analysis by Shannon & Wilson

under our Six Mile Richardson Highway site-assessment contract with the ADEC were treated in a manner consistent with our Quality Assurance Project Plan, described in the work plan referenced above. Copies of the field notes are presented in Appendix A.

## 2.1 Well Sampling Procedures

### 2.1.1 Residential Wells

We sampled residential water-supply wells between August 3-18, 2012, obtaining untreated water samples for VOC analysis. We collected the residential well samples from a location in the plumbing upstream of any water-treatment system, if present. We did not modify the residential water-supply systems (pump, piping, pressure tank, etc.), and we purged the systems prior to sampling by allowing the water to run until its pH, temperature, conductivity, and oxidation-reduction potential stabilized. Purge water was discharged to the ground surface or residential septic systems. We collected samples into laboratory-supplied containers.

We collected duplicate samples (*1566-081312-RW20* and *1566-081312-RW21*) for QA purposes from the residence at 1357 Sloan Street. A VOC trip blank was carried during each sampling effort, and accompanied the samples during their transport to the analytical laboratory.

### 2.1.2 Groundwater-Monitoring Wells

As part of our standard sampling procedure, we measured depths to groundwater to a precision of 0.01 foot from the top of the well casings in each of the three monitoring wells at the time we sampled them in August 2012. Over the past several years of sampling in the area, we have determined the magnitude and direction of the area's groundwater gradient varies little seasonally. We have previously determined the groundwater gradient is generally to the northwest with a magnitude of about 1 foot per 1,000 feet; the August 2012 groundwater-elevation measurements were consistent with our previous observations.

We sampled the monitoring wells using a battery-powered, variable-speed submersible pump decontaminated before collecting each sample. Prior to collecting samples, we purged the wells by pumping until water temperature, conductivity, pH, and oxidation-reduction potential stabilized over three consecutive readings on a field meter. We then reduced the pump-flow rate to allow collection of water samples for VOC analysis into the appropriate laboratory-prepared containers; we collected duplicate VOC samples for QA purposes immediately after filling the sample container for the primary sample.

We did not collect duplicate samples for VOC analysis from the monitoring wells, since the duplicate pair collected from one of the residential wells satisfied the QC-sampling requirement of 10 percent. VOC trip blanks accompanied the samples during sampling and transport to the laboratory for analysis. Note that the last portion of the sample number has no relation to the monitoring well number.

Based on VOC data from previous groundwater-monitoring projects in the area, well-purge water was either discharged to the ground surface at the sampling location (historical TCE concentrations less than 5 µg/L), or treated by activated-carbon filtration prior to being discharged to the ground surface.

## 2.2 Laboratory Analyses

The samples collected this year and earlier were analyzed by different methods. Sampling and analytical details for samples collected prior to 2012 will not be addressed here. All contaminant data were compiled from water analyses performed by a contract laboratory approved by the ADEC for drinking-water analysis. We submitted the 2012 groundwater samples from the monitoring wells and residential wells to SGS North America, Inc. (SGS) for VOC analysis. The samples from residential wells were analyzed for VOCs by U.S. Environmental Protection Agency (EPA) Method 524.2, a drinking-water analytical method; samples from monitoring wells were analyzed by EPA Method SW8260B.

## 2.3 Quality Assurance/Quality Control

QA/QC procedures assist in producing data of acceptable quality and reliability. We reviewed analytical results for laboratory QC samples and also conducted our own QA assessment for this project. We reviewed the chain-of-custody (COC) records and laboratory-receipt forms to confirm custody was not breached and samples were kept properly chilled (between 0 ºC and 6 ºC) during shipping. Our QA review procedures allowed us to document the accuracy and precision of the analytical data, as well as check that the analyses were sufficiently sensitive to detect analytes at levels below regulatory standards.

For this report, we reviewed the VOC data for the monitoring-well and drinking-water samples collected for SGS work orders (WOs) 1128320, 1128347, and 1128367. The SGS laboratory reports, including case narratives describing QA results in detail and sample-receipt forms documenting sample-receipt conditions, and completed ADEC data-review checklists are included in Appendix B. Details regarding the results of our QA review are presented below.

### 2.3.1 Sample Handling

We hand-delivered monitoring-well and drinking-water samples in one cooler per SGS WO to the SGS Fairbanks office. Samples were then packaged and shipped to the SGS Anchorage laboratory via Lynden Transport. The sample-receipt forms associated with each WO indicate the temperature blanks or coolers arrived at the SGS Fairbanks office and Anchorage laboratory within acceptable temperature range of 0 °C to 6 °C, as specified in EPA publication SW-846 and approved by the ADEC. Sample data were not compromised by out-of-range temperatures.

In WO 1128347, the COC and sample-receipt form note samples *1566-080912-RW20* and *1566-080912-RW21* were cancelled. These samples were collected on a later date and submitted on SGS WO 1128367 as *1566-081312-RW20* and *1566-081312-RW21*. The samples were analyzed within hold time and the results are unaffected.

Our review of laboratory sample-receipt documents did not reveal any other sample-handling anomalies that would affect the quality or usability of the data. Chains of custody were not breached, and sample-holding times were met for each of the VOC analyses.

### 2.3.2 Analytical Sensitivity

The data from the VOC analyses conducted on monitoring-well and drinking-water samples had limits of quantitation (LOQs) below ADEC groundwater-cleanup levels, except for 1,2,3-trichloropropane, 1,2-dibromoethane, and 1,2-dibromo-3-chloropropane. For sample analytes with LOQs greater than cleanup levels, we cannot determine if these analytes exceed regulatory levels.

Trip blanks were shipped with the water samples to determine if cross-contamination or contamination from an outside source may have occurred during shipment or storage. No analytes were detected above the LOQs in the trip blanks associated with monitoring-well and drinking-water samples.

Laboratory method blanks (MBs) were run in association with the samples collected for this project to check for contributions to the analytical results possibly attributable to laboratory-based contamination. Methylene chloride was detected below the LOQ in VOC analytical batch VMS13043 and *trans*-1,2-dichloroethene was detected below the LOQ in VOC analytical batch VMS13028. Concentrations of the referenced analytes in project samples associated with the method blank detections were five times greater than the MB concentrations or not detected, so the results are unaffected. No other analytes were detected in the method blanks.

### 2.3.3 Accuracy

The laboratory assessed the accuracy of their analytical procedure through a variety of QA procedures. Analytical accuracy for both drinking-water and monitoring-well samples was assessed through analysis of laboratory control samples (LCSs) and LCS duplicates (LCSDs). These samples allow the laboratory to evaluate their ability to recover analytes added to clean aqueous matrices. In addition, SGS also evaluated laboratory accuracy for each sample by assessing the recovery of analyte surrogates added to individual project samples. Continuing calibration verification (CCV), a standard practice to verify the calibration of the instrument, also allowed the laboratory to check for analytical accuracy.

The LCS/LCSD and surrogate recoveries for the monitoring-well and drinking-water samples were within SGS's control limits, with the following exception: LCS/LCSD recoveries of bromoethane, chloromethane, chloroethane, trichlorofluoromethane, dichlorodifluoromethane and vinyl chloride were above laboratory-control limits for VOC analytical batch VMS13028. These analytes were not reported above the LOQs in the associated project sample, so the results are unaffected.

The laboratory case narrative noted several CCV recoveries above QC criteria; these analytes were not reported above the LOQs in the associated project samples, so the results are unaffected.

The LCS/LCSD, CCV, and surrogate recovery data indicate the samples analyses yielded accurate results for this project.

### 2.3.4 Precision

We collected field-duplicate samples at a frequency of 1 sample per eight project samples to evaluate the precision of analytical measurements and the reproducibility of our sampling technique. We collected duplicate residential-well samples from 1357 Sloan Street (samples *1566-081312-RW20* and *1566-081312-RW21*) for this year's sampling effort.

To evaluate the precision of the data, we calculated the relative percent difference (RPD; the difference between the sample and its field duplicate result divided by the mean of the two). RPD can be evaluated only if the results of the analyses for both the sample and its duplicate are above LOQs. Results of RPD calculations for these field-duplicate samples were less than 30 percent for all analytes reported above LOQs, and within the limits of our data quality objectives for monitoring-well and drinking-water samples.

Laboratory analytical precision can also be evaluated by RPD calculations. The laboratory LCS/LCSD RPDs provide information regarding the reproducibility of their procedures and, therefore, a measure of analytical precision. The LCS/LCSD RPDs fell within laboratory- or method-established limits for monitoring-well and drinking-water samples, with the following exception: the LCS/LCSD RPDs for *cis*-1,2-dichloroethene and trichlorofluoromethane did not meet QC criteria for VOC analytical batch VMS13035. These analytes were not detected above the LOQ in the associated samples; therefore, the results are unaffected.

#### 2.3.5 Data Quality Summary

By working in general accordance with our proposed scope of services, the samples we collected are considered to be representative of site conditions at the locations and times they were obtained. Based on our QA review, no samples were rejected as unusable due to QC failures, and our completeness goal of obtaining 85-percent useable data was met. In general, the quality of the analytical data for this project does not appear to have been compromised by any analytical irregularities.

The laboratory reports for monitoring-well and drinking-water samples and the ADEC data-quality-review checklists for these reports are included in Appendix B.

### 2.4 Statistical Analysis of TCE Concentrations

We assessed the historical data sets at each sample location for the wells sampled in 2012 to see if there were significant trends in TCE concentration with time. We performed the assessment using the Mann-Kendall nonparametric trend analysis (as described in R.O. Gilbert, 1987, *Statistical Methods for Environmental Pollution Monitoring*, John Wiley & Sons, Inc., New York). This test requires data from a minimum of four sampling events to assess temporal concentration trends; we were able to perform it on data from all of the monitoring wells and residences sampled this year. A concentration trend was considered to be significantly increasing or decreasing if the probability of a false positive test was lower than 5 percent (i.e., p-value less than 0.05).

We further analyzed TCE-concentration trends by nonlinear regression in wells sampled this year that either currently or previously contained TCE above the federal maximum contaminant level (MCL) of 5 µg/L, and exhibited decreasing trends in TCE concentration. The regression estimated the concentration decay rate constant (k) using a first-order exponential decay model ($C_t = C_0\, e^{-kt}$; where $C_0$ is the initial TCE concentration, $C_t$ is the TCE concentration at time $t$, $e$ is the base of natural logarithms, and $k$ is the exponential-decay-rate constant) using TCE concentration and elapsed-time data for each well. Estimates of the exponential-decay-rate

constant for each well's data set allowed us to estimate TCE concentration half-lives at each location. The regressions provided estimates of rate constants and half-lives, as well as upper and lower 95-percent confidence limits on these estimates; wider confidence intervals indicate a larger error in the estimated half-lives and rate constants.

# 3.0 2012 SAMPLING RESULTS AND DISCUSSION

Groundwater-contaminant concentrations for residential wells sampled in 2012 are presented in Table 1; VOCs detected in the monitoring-well samples are in Table 2. Historical contaminant concentrations for the residences sampled in this year's project are shown in Table 3. VOC-concentration histories for groundwater-monitoring wells in the Six Mile Richardson Highway long-term monitoring network, including those not sampled in 2012, are presented in Table 4. TCE concentrations and temporal trends for wells sampled in 2012 are tabulated in Table 5. The results of nonlinear regressions for wells with long-term decreasing trends are in Table 6.

## 3.1 Groundwater Gradient

As noted above, we have previously determined the groundwater gradient is generally to the northwest, roughly parallel to the Richardson Highway, with a magnitude of about 1 foot per 1,000 feet. The 2012 groundwater-elevation measurements were consistent with our previous observations. The direction of the regional gradient determined from groundwater-elevation measurements is generally consistent with the direction of the regional TCE plume, previously estimated from TCE-concentration data (Figure 1).

We have also previously measured groundwater elevations in well clusters to check for the possible presence of vertical gradients in the area, and have found no evidence of substantial vertical groundwater flow. In previous reports, we noted TCE contamination observed deeper in the regional aquifer is not likely to be due to advective TCE transport via vertical (downward) groundwater flow; however, it is possible advection via scattered vertical channels of relatively higher permeability may allow TCE transport to greater depths, as the subsurface of the Tanana River floodplain consists of a heterogeneous distribution of sands, gravels, organic-matter deposits, and occasional ice-rich soils. Migration of contamination deeper into the aquifer likely also occurs by vertical dispersion as the compound travels downgradient along the TCE plume.

In addition, historically, no substantial differences in groundwater flow direction at 30 feet and 70 feet below ground surface (bgs) have been detected.

### 3.2 Residential Well-Sample Results and Treatment-System Maintenance

The EPA recently released updated toxicity information for TCE and tetrachloroethene (PCE), indicating TCE and PCE are more toxic than originally believed. The EPA intends to use the new toxicity factors in considering revisions to MCLs. This information has resulted in a reduction of EPA's regional screening levels RSLs for soil, indoor air, and tap water, and will likely result in a reduction of the federal MCL and ADEC's groundwater-cleanup level. The ADEC is evaluating the reduction in the TCE groundwater-cleanup level that would potentially result in a threshold of 1.8 µg/L TCE for continued residential well sampling and/or treatment-system maintenance in the Six Mile Richardson Highway plume. The ADEC decided to use this proposed threshold until further information on a new groundwater-cleanup level is available. Prior to 2012, the ADEC used 3.5 µg/L TCE as the threshold for continued residential well sampling and/or treatment-system maintenance.

TCE was detected in samples from all the residential wells sampled in 2012, but not above its MCL (Table 1). TCE concentrations were greater than the 1.8-µg/L threshold in samples from four of the five residential wells. The sample from 1366 Sloan Street contained less than 1.8 µg/L TCE (Table 1).

Each of the residences that have TCE concentrations greater than 1.8 µg/L has an activated-carbon-based treatment system previously installed under the auspices of the ADEC. We contracted Ecowater Systems of Fairbanks to maintain water-treatment systems; this work was completed at four residences (1357, 1366, and 1369 Sloan Street and 1410 Richardson Highway). The owner of the residence at 1430 Richardson Highway independently arranged to have his system maintained in May 2012.

The compound *cis*-1,2-dichloroethene was detected in samples from all five residential wells and *trans*-1,2-dichloroethene was detected in two wells. All analyte concentrations were less than their MCLs.

### 3.3 Volatile Organic Compounds

As noted above, 2012 contaminant data are presented in two tables. Table 1 presents current VOC results for wells in residences and Table 2 presents current VOC results from monitoring wells. Historical data for residences sampled in 2012 are provided in Table 3, and historical data for all monitoring wells in the Six Mile Richardson Highway groundwater-monitoring network are presented in Table 4. Results for analyte concentrations exceeding their MCLs or groundwater-cleanup levels are shown in bold-face type in these tables.

### 3.3.1 Nonhalogenated VOCs

Nonhalogenated VOCs were not detected in samples from residential wells and monitoring well sampled in 2012.

### 3.3.2 Halogenated VOCs Other Than TCE

Aside from TCE detected in the 2012 samples (discussed in Section 3.3.3), two other halogenated VOCs were found in monitoring and residential-well samples (Tables 1 and 2). These were *cis*-1,2-dichloroethene (all sampled residential wells and two of three monitoring wells), and *trans*-1,2-dichloroethene (two residential wells and two monitoring wells). These halogenated VOCs were not reported above their MCL or ADEC groundwater-cleanup level.

The *cis*- and *trans*-1,2-dichloroethene found in most samples may be daughter products of TCE dechlorination reactions, as they have been only detected in conjunction with current or former detections of TCE. The *cis*-isomer of 1,2-dichloroethene is commonly understood to be the primary TCE biodegradation product, though the *trans*-isomer may also be produced biologically from TCE. Both compounds may also be present as co-contaminants released with the TCE.

### 3.3.3 TCE Contamination

TCE contaminant data for 2012 are presented in two tables, one for residential wells (Table 1) and another for groundwater-monitoring wells (Table 2). TCE was detected below its MCL in samples from five drinking-water wells (Table 1). TCE was also detected in each of the monitoring-well samples, and exceeded its MCL in the sample from one of the three wells sampled (Table 2).

The highest concentration of TCE in the 2012 samples was in a sample from MW-35, (5.40 µg/L; Table 2), at 1410 Richardson Highway (Figure 1). This TCE concentration is the lowest observed in samples from this well (Table 4). The highest TCE groundwater concentrations in the plume have consistently been observed at MW-32 (Figure 1), near the presumed main TCE source area.

## 3.4 TCE Distribution and Concentration Trends

The 2012 sampling effort was limited to sampling residential water-supply wells, mainly in relation to water-treatment-system maintenance or possible installation, and sampling monitoring wells either to confirm TCE temporal-concentration trends we previously identified or to obtain additional data to allow us to assess temporal trends.

### 3.4.1 TCE Plume

Prior to 2012, data collected over several years of groundwater monitoring indicated the Six Mile Richardson Highway TCE plume had reached a stable size. Based on the 2009 groundwater results, we concluded the TCE plume was shrinking. The portion of the plume exceeding the 5-µg/L MCL has receded by approximately 750 feet, from approximately 3,900 feet to about 3,150 feet from the presumed main-source area near MW-32. We redrew the 5-µg/L plume in 2009 to reflect this change (Figure 1). This year, too few data points were obtained to evaluate the plume's extent.

As we noted in our December 2011 report, low, steady-state TCE concentrations were observed at MW-11 (screened from 70 feet to 80 feet bgs), the well farthest downgradient in the plume (Figure 1), until it was decommissioned in 2007. MW-11 was installed in 1995, along with a shallower-screened well (MW-12), to delineate the extent of the TCE plume. MW-11 was last sampled in April 2006; MW-12 was last sampled in September 2002. MW-12 was decommissioned after the 2002 sampling event.

Two wells (MW-38 and MW-39) were installed in 2004 near the downgradient end of the detectable TCE plume (i.e., an LOQ of 1 µg/L), intended to serve the role filled by MW-11 and MW-12 since 1995. Since 2004, these wells have been sampled five times. The deeper of the two wells (MW-38, screened 31 feet to 41 feet bgs) was completed at the depth permafrost was encountered; 2007 was the first time a sample from this well contained detectable TCE (1.2 µg/L; Table 4). Samples from the shallower of the wells (MW-39, screened 20 feet to 30 feet bgs) did not contain detectable concentrations of TCE in October 2004, but TCE was found above its LOQ in samples collected in April 2006 (1.16 µg/L) and October 2006 (1.31 µg/L). The MW-39 sample from 2007 contained detectable TCE at an estimated concentration (0.92 µg/L) below its LOQ (Table 4). In 2012, TCE was detected in MW-38 and MW-39 at 1.40 µg/L and 1.31 µg/L, respectively.

Continued sampling of MW-38 and MW-39 will be necessary to assess whether the steady-state TCE concentrations observed in samples from MW-11 and MW-12 also exist at MW-38 and MW-39.

### 3.4.2 TCE Temporal Trends

Three of the monitoring wells were sampled in 2012 to obtain data for assessing their TCE-concentration trends. Each of the monitoring wells sampled this year provided enough data to assess whether their concentrations are changing significantly with time. Each of the residences sampled in 2012 also has enough data to assess their TCE temporal trends.

The sample from one of the monitoring wells (MW-35) had a TCE concentration above the groundwater-cleanup level (Table 5). Wells MW-26 and MW-35 exhibit decreasing TCE trends. TCE data from MW-13 do not show a significant concentration trend over time.

The data from MW-13 exhibited an increasing trend overall through 2007, but the addition of the 2009 TCE datum (3.08 µg/L) changed the increasing concentration trend to no apparent trend (Table 5). It continues to show no trend in 2011 and 2012. The highest TCE concentration observed at MW-13 was 5.63 µg/L in 2004 (Table 4).

MW-35 exhibited no trend in 2009, but with the addition of the 2011 datum, it now exhibits a decreasing trend.

None of the residential wells sampled in 2012 yielded samples with TCE above its MCL. In 2007, two residential wells had samples equal to or greater than the MCL: 1357 Sloan Street (5.16 µg/L) and 1369 Sloan Street (5.00 µg/L). Their 2009 and 2011 TCE concentrations were both less than the MCL. The TCE concentrations at 1357 and 1366 Sloan Street are decreasing with time, but there is currently no significant trend at 1369 Sloan Street (Table 5). Four of the five residences where trends could be evaluated exhibit significantly decreasing TCE concentrations (Table 5).

Nine sampling events contributed to our TCE trend assessment at 1369 Sloan Street (Table 3). The concentration at this location has varied between 2.7 µg/L and 6.2 µg/L since 1995, with the 2012 TCE concentrations at 3.06 µg/L. Additional data may ultimately reveal a trend not evident from this data set.

Time-course concentration data for the wells sampled in 2012 and with sufficient data to assess trends are plotted in Figures 2 through 5. Residential-well data are plotted in Figure 3 (1410 and 1430 Richardson Highway), Figure 4 (1369 Sloan Street), and Figure 5 (1357 and 1366 Sloan Street). Concentrations of TCE over time in monitoring wells sampled in 2012 are plotted in Figure 2 (MW-26 and MW-35) and Figure 4 (MW-13). We present the plots in the general order of well location along the plume, from near the source toward the downgradient end (Figure 1).

### 3.4.3 Regression Analysis

TCE-concentration half-life estimates for wells with significant long-term decreasing trends were derived from nonlinear regressions using the first-order exponential decay model ($C_t = C_0\, e^{-kt}$) described previously. Data from each well exhibiting a decreasing TCE trend fit the decay model chosen for the regression.

The regressions generated estimates of the concentration decay rate ($k$, year $^{-1}$), with 95-percent confidence limits on the estimates. Table 6 presents information for the four residences and two monitoring wells where TCE decay-rate constants could be estimated. Included in this table are estimates of rate constants and associated TCE half-lives, as well as the 95-percent confidence limits on these estimates. At these locations, the estimated time to achieve MCL ranges from about 1.5 years (MW-35) down to zero (i.e., those wells already below the TCE MCL). TCE concentrations and results of the "best-fit" nonlinear regressions are presented graphically in Figure 2 (MW-26 and MW-35), Figure 3 (1410 and 1430 Richardson Highway), and Figure 5 (1357 Sloan Street and 1366 Sloan Street). Note that the diagrams are presented in the general order of well location downgradient from the source area (Figure 1).

As noted in our December 2011 groundwater report, there are not enough data to assess trends from monitoring wells MW-15A and MW-16A. In 2007, we used the regression data for MW-15 and MW-16 through 2006 to estimate a TCE concentration for 2007 at those locations, for comparison with TCE data from the new wells installed nearby. In 2007, both new monitoring wells yielded samples containing TCE at concentrations substantially lower than predicted by the regression estimates from the data for the decommissioned wells they replaced; similar TCE concentrations were found in samples from these wells in 2009 (Table 4). The new wells are about 150 feet northeast of the decommissioned wells (Figure 1). Whether the lower TCE concentrations in the new wells are evidence of a decrease in this area's contaminant concentration or a result of their greater distance from the plume's centerline cannot yet be determined from this data set. Additional data are needed to assess contaminant concentration trends at the new wells; the 2009 TCE concentration was higher than in 2007, then dropped somewhat in 2011 at MW-15A. TCE concentrations at MW-16A have dropped since it was first sampled (Table 4).

For each of the data sets previously subjected to the regression analysis in 2005, 2006, 2007, 2009, or 2011, the 2012 datum generally fell within the confidence intervals predicted from the model. This indicates the model continues to reasonably represent TCE concentration behavior over time at each location modeled.

As we have observed in our previous reports, spatial and temporal trends in TCE concentration in the Six Mile Richardson Highway area suggest TCE concentrations are decreasing in a manner consistent with natural attenuation by dilution. Earlier geochemical assessments indicated microbially mediated natural attenuation likely plays an insignificant role in the TCE-concentration decreases observed in the area's groundwater.

Also, data from our earlier assessments have shown TCE concentration does not consistently decrease with respect to distance from presumed source areas, and temporal concentration trends throughout the plume are not consistently decreasing. It is our opinion this may be explained by permeability differences in the aquifer matrix that create variably restrictive contaminant flowpaths from the apparent source area near MW-32, leading to the observed concentration anomalies.

# 4.0 CONCLUSIONS AND RECOMMENDATIONS

## 4.1 Conclusions

Of samples taken in 2012, TCE concentrations in samples from one of the three monitoring wells, and none of the five residential wells, exceeded the TCE MCL and ADEC groundwater-cleanup level. No other VOC analyte exceeded its MCL or groundwater-cleanup level.

We measured the highest TCE concentration in the sample from MW-35 (5.40 µg/L; Table 2), screened from 29 feet to 38 feet bgs, at 1410 Richardson Highway (Figure 1).

Each monitoring well sampled this year had a data set large enough to statistically evaluate whether TCE concentrations are changing over time. TCE concentrations at MW-26 and MW-35 (Figure 1) are decreasing with time; the TCE half-life at MW-35 suggests the TCE cleanup level should be reached within 1.5 years. MW-26 also has a decreasing trend but already meets the cleanup level. No temporal concentration trends are evident at MW-13 (Table 5); it may eventually demonstrate trends with the accumulation of additional data.

All of the five residential wells also have sufficiently large data sets to statistically evaluate whether TCE concentrations are changing over time. TCE concentrations are decreasing at 1410 Richardson Highway, 1430 Richardson Highway, 1357 Sloan Street, and 1366 Sloan Street (Table 5). TCE concentrations in the well at 1369 Sloan Street do not exhibit a trend, and have not exhibited a trend since it was first sampled. None of the 2012 samples from the residential wells exceeded the TCE MCL. Four of the five residences sampled in 2012 yielded samples containing TCE greater than the new 1.8-µg/L threshold established by ADEC for continued TCE sampling and/or treatment-system maintenance. The 1366 Sloan Street residence has yielded two samples below the ADEC 1.8-µg/L threshold; we recommend ADEC-sponsored maintenance of this treatment system be continued. The wells at 1410 Richardson Highway, 1430 Richardson Highway, 1357 Sloan Street, and 1369 Sloan Street have not yielded samples below the 1.8-µg/L threshold (Table 3). Annual sampling should be continued at these residences to determine when the TCE concentrations there drop below that threshold.

## 4.2 Recommendations

Water from residential wells sampled for this project contains TCE below the MCL. Three locations (1378 Smithson Street, 1366 Sloan Street, and 1430 Richardson Highway) provided samples with TCE concentrations less than the previous eligibility threshold for water-treatment-system maintenance (3.5 µg/L) in 2009. In 2009, we recommended collecting one additional sample from 1366 Sloan Street and removing it from the ADEC-sponsored sampling and/or treatment-system maintenance programs if the TCE concentration was again less than 3.5 µg/L. This residence was removed from ADEC-sponsored treatment system maintenance after the TCE concentration there (2.82 µg/L) dropped below the 3.5-µg/L threshold in 2007. As described in Section 2.6, the ADEC threshold for continued sampling and treatment-system maintenance dropped from 3.5 µg/L TCE to 1.8 µg/L TCE in 2012. 2012 was the second year the well at 1366 Sloan Street yielded a sample with less than 1.8 µg/L TCE. Based on this year's TCE results, we recommend well sampling and treatment-system maintenance at the residence at 1366 Sloan Street be continued until three consecutive samples do not exceed 1.8 µg/L TCE.

The well at 1366 Sloan Street was the only well sampled in 2012 with TCE less than the new ADEC threshold. We recommend continued sampling and treatment-system maintenance at 1410 Richardson Highway, 1430 Richardson Highway, 1357 Sloan Street, 1366 Sloan Street, and 1369 Sloan Street until TCE concentrations drop below the ADEC's new 1.8-µg/L threshold for three events.

Monitoring wells MW-15A and MW-16A were installed in 2007 to replace decommissioned wells MW-15 and MW-16. The new wells yielded samples with TCE concentrations below those predicted at the decommissioned wells' location. We recommend annual sampling be performed at the new wells to assess TCE levels and potential temporal-concentration trends there. In addition, as their location has not been established by survey, we recommend a survey be conducted to obtain location data for these wells.

Two monitoring wells (MW-38 and MW-39; Figure 1) were installed at the distal end of the TCE plume in 2004. In 2009, we recommended periodic monitoring at those wells to check whether TCE concentrations are stable in that area, which would provide confirmation the area-wide plume is in a steady-state condition. In 2011, the TCE concentration trend in MW-38 was increasing, and MW-39 exhibited no trend. Annual sampling of these wells is warranted.

In 2009, we also recommended sampling MW-103, MW-104, and MW-105 to verify the revised location of the end of the 5-µg/L plume. The 2011 results ranged from 1.32 µg/L to 1.59 µg/L,

confirming the location of the end of the 5-µg/L plume has receded slightly. We recommend sampling these wells every five years.

Samples from MW-5, MW-19, MW-26, MW-34, MW-107, and MW-108 are less than the TCE groundwater-cleanup level and exhibit decreasing TCE concentration trends. We recommend sampling these wells every five years.

In 2011, there were five monitoring wells whose TCE concentrations exceeded the ADEC groundwater-cleanup level (Table 4); all five exhibited decreasing trends. We recommend sampling each of the wells with decreasing trends, listed in the following table (MW-17, MW-18, MW-30, MW-32, and MW-35), every two years to confirm the trend continues. We also recommend sampling the wells with no discernable trend (MW-13 and MW-39) or an increasing trend (MW-38) annually until a decreasing trend becomes evident.

**TABLE 7**
**WELL SAMPLING RECOMMENDATIONS**

| Monitoring Well | Latest TCE Concentration (µg/L) | Latest Sampling Date | TCE Concentration Trend | Recommended Sampling Frequency |
|---|---|---|---|---|
| MW-5 | 4.73 | July 2011 | Decreasing | Every five years |
| MW-13 | 1.72 | August 2012 | No trend | Annually |
| MW-15A | 2.74 | July 2011 | Unknown | Annually |
| MW-16A | 4.30 | July 2011 | Unknown | Annually |
| MW-17 | 16.6 | July 2011 | Decreasing | Every two years |
| MW-18 | 6.42 | July 2011 | Decreasing | Every two years |
| MW-19 | 4.05 | July 2011 | Decreasing | Every five years |
| MW-26 | 3.20 | August 2012 | Decreasing | Every five years |
| MW-30 | 5.43 | July 2011 | Decreasing | Every two years |
| MW-32 | 27.0 | July 2011 | Decreasing | Every two years |
| MW-34 | 4.69 | July 2011 | Decreasing | Every five years |
| MW-35 | 5.40 | August 2012 | Decreasing | Every two years |
| MW-38 | 1.40 | July 2011 | Increasing | Annually |
| MW-39 | 1.31 | July 2011 | No trend | Annually |
| MW-103 | 1.32 | July 2011 | Decreasing | Every five years |
| MW-104 | 1.32 | July 2011 | Decreasing | Every five years |
| MW-105 | 1.59 | July 2011 | Decreasing | Every five years |
| MW-107 | 3.85 | July 2011 | Decreasing | Every five years |
| MW-108 | 4.59 | July 2011 | Decreasing | Every five years |

Contaminant-monitoring and data-collection efforts should continue to track TCE temporal and spatial trends, with a particular focus on the downgradient portion of the TCE plume, since this is where potential exposures to TCE may occur via consumption of groundwater. Additional VOC data collected over the next few years may allow estimates of TCE concentration half-lives to be determined at locations where decreasing trends are not currently apparent. As we have noted in previous reports, the potential contaminant-exposure receptors (via direct contact and consumption pathways) are far downgradient from the likely TCE source areas. It is therefore our opinion that future efforts should primarily concentrate on tracking and modeling TCE spatial and temporal behavior to allow for better predictions regarding potential exposures, and assessing exposures attributable to VOC vapor intrusion into businesses and residences.

## 5.0 LIMITATIONS

This report was prepared for the use of the ADEC and its representatives for assessing the extent of TCE contamination and its natural attenuation in the Six Mile Richardson Highway area near Fairbanks, Alaska. This work presents our professional judgment as to the conditions in the area. Conclusions and recommendations presented here are based on the sampling and analyses we performed, along with a limited review of records and other data available to the public. They should not be construed as definite conclusions about the groundwater quality in the area, and it is possible our tests may not represent the highest levels of contamination in the area. In addition, estimates of extent of contamination, such as depicted in figures or discussion in this report, are based on extrapolation from often widely spaced sample locations. This information is presented for discussion purposes only, and not as any guarantee of the presence or absence of contamination. We have not performed an independent evaluation of the accuracy or completeness of third-party information, and shall not be responsible for errors or omissions contained in such information.

The information included in this report should be considered representative of the time and locations at which the sampling occurred. It was not the intent of our investigation to detect the presence of groundwater affected by contaminants other than those for which laboratory analyses were performed. No conclusions can be drawn on the presence or absence of other contaminants. The observed levels of contamination may be dependent upon seasonal fluctuations of the groundwater table and/or the passage of time. Due to such changes, or others beyond our control, our observations and recommendations applicable to this site may need to be revised. If substantial time has elapsed between submission of this report and the start of activities or action based upon it, we recommend this report be reviewed to determine the applicability of the conclusions and recommendations considering the lapsed time or changed conditions.

This report was prepared for the exclusive use of our client. All documents prepared by Shannon & Wilson are instruments of service with respect to the project for the sole use of our client. Only our client shall have the right to rely upon such documents. Such documents are not intended or represented to be suitable for reuse by our client or others after the passage of time, on extensions of the project, or on any other project. Any such reuse without written verification or adaptation by Shannon & Wilson, as appropriate for the specific purpose intended, shall be at the user's sole risk.

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TABLE 1
SUMMARY OF VOC CONCENTRATIONS DETECTED IN RESIDENTIAL WELLS SAMPLED IN 2012
(all concentrations in µg/L)

| Address | Well Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis* -1,2-Dichloroethene (*c* DCE) | *trans* -1,2-Dichloroethene (*t* DCE) |
|---|---|---|---|---|---|---|
| EPA Maximum Contaminant Level (MCL) | | | | 5 | 70 | 100 |
| 1410 Richardson Highway | 60 | 8/18/12 | *1566-080812-RW18* | 3.10 | 0.530 | <0.500 |
| 1430 Richardson Highway | 60 | 8/3/12 | *1566-080312-RW16* | 2.90 | 0.570 | <0.500 |
| 1357 Sloan Street | unknown | 8/13/12 | *1566-081312-RW20* | 3.53 | 0.540 | <0.500 |
| 1357 Sloan Street (duplicate) | unknown | 8/13/12 | *1566-081312-RW21* | 3.57 | 0.520 | <0.500 |
| 1366 Sloan Street | 40 | 8/8/12 | *1566-080812-RW19* | 1.35 | 1.24 | 2.24 |
| 1369 Sloan Street | unknown | 8/8/12 | *1566-080812-RW17* | 3.06 | 0.960 | 0.970 |

Notes: Samples were analyzed by EPA Method 524.2.
Only those analytes detected above the Limit of Quantitation (LOQ) are listed.
< Analyte not reported above given LOQ.
(duplicate) Field duplicate of preceding sample

TABLE 2
SUMMARY OF VOC CONCENTRATIONS DETECTED IN MONITORING WELLS SAMPLED IN 2012
(all concentrations in µg/L)

| Well Number | Well Screen Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis* -1,2-Dichloroethene (*c* DCE) | *trans* -1,2-Dichloroethene (*t* DCE) |
|---|---|---|---|---|---|---|
| ADEC Table C Groundwater-Cleanup Level | | | | 5 | 70 | 100 |
| MW-13 | 40-50 | 8/3/12 | *1566-080312-MW23* | 1.72 | 1.07 | 1.89 |
| MW-26 | 20-30 | 8/3/12 | *1566-080312-MW22* | 3.20 | 4.89 | 4.89 |
| MW-35 | 29-38 | 8/8/12 | *1566-080812-MW24* | **5.40** | <1.00 | <1.00 |

Notes: Samples were analyzed by EPA Method SW8260B.
Only those analytes detected above the Limit of Quantitation (LOQ) are listed.
**Bold** Concentration exceeds the ADEC Table C Groundwater-Cleanup Level for that analyte.
< Analyte not reported above given LOQ.

TABLE 3

HISTORY OF VOC CONCENTRATIONS IN RESIDENTIAL WELLS SAMPLED IN 2012

(all concentrations in µg/L)

| Address | Well Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis*-1,2-Dichloroethene (cDCE) | *trans*-1,2-Dichloroethene (tDCE) | 1,1,1-Trichloroethane (TCA) | Chloroethane | 1,1-Dichloroethane | 1,2-Dichloroethane | Bromomethane | Bromodichloromethane | Chloromethane | Methylene Chloride (Dichloromethane) | Chloroform | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | *n*-Butylbenzene | 1,2-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA Maximum Contaminant Level (MCL) | | | | 5 | 70 | 100 | 200 | 290* | 7,300* | 5 | 51* | 14* | 66* | 5 | 140* | 5 | 1,000 | 700 | 10,000 | 730* | 370* | 600 | 75 |
| Richardson Highway | | | | | | | | | | | | | | | | | | | | | | | |
| 1410 | 60 | 10/3/95 | *72912-1003-097* | **12** | 2.0 | 0.48 | 3.0 | <0.50 | 3.0 | <0.50 | <0.50 | <0.50 | <0.50 | 0.77 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | (in residence) | 11/7/95 | *72911-1107-141* | **9.3** | 1.0 | <0.50 | 5.6 | <0.50 | 2.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.7 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 8/17/96 | *729-81796-166* | **9.27** | 0.90 | 0.31 | 3.65 | <1.00 | 1.39 | <0.20 | <1.00 | <0.20 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 | <0.20 |
| | | 10/14/99 | *991-101499-286* | **6.6** | 0.58 | <0.50 | 0.79 | – | 1.0 | <0.50 | – | <0.50 | – | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | – | – | <0.50 | <0.50 |
| | | 9/18/00 | *1037-091800-1410 OldRichA* | **6.0** | 0.5 | <0.50 | 0.63 | <0.50 | 1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 9/18/00 | *1037-091800-1410 OldRichB D* (dup) | **5.8** | 0.54 | <0.50 | 0.56 | <0.50 | 1.1 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 7/24/01 | *1410 Richardson A* | **5.13** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <2.00 | <2.00 | <1.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <2.00 | <2.00 | <1.00 | <1.00 | <1.00 |
| | | 7/24/01 | *1410 Richardson B* (dup) | 4.80 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <2.00 | <2.00 | <1.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <2.00 | <2.00 | <1.00 | <1.00 | <1.00 |
| | | 9/18/02 | *11152-091802-1410R* | **5.6** | <0.50 | <0.50 | <0.50 | <0.50 | 0.87 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/8/03 | *1199-100803-6* | 3.8 | <0.50 | <0.50 | <0.50 | <0.50 | 0.66 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.57 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 9/24/04 | *1246-092404-002* | 4.6 | 0.54 | <0.50 | <0.50 | <1.0 | 0.66 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.61 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/19/05 | *1295-101905-003* | 4.17 | 0.53 | <0.5 | <0.5 | <0.5 | 0.56 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | | 9/6/06 | *1330-090606-002* | 4.68 | <0.5 | <0.5 | <0.5 | <0.5 | 0.60 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | | 8/9/07 | *11368-82006-001* | 4.14 | 0.54 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 1/15/09 | *1437-011509-004* | 3.82 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | 1.14 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 8/1/11 | *1566-080111-RW-6* | 2.92 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <2.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | 1.43 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 8/18/12 | *1566-080812-RW18* | 3.10 | 0.530 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <2.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| 1430 | 60 | 6/23/95 | *7294-623-007* | **14.1** | <0.50 | 0.38 | 9.29 | <0.50 | 2.11 | <0.50 | <0.50 | <0.50 | <0.50 | 2.46 | <0.50 | 0.37 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 11/2/95 | *72911-1102-125* | **10.0** | 1.0 | 0.31 | 5.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.20 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.50 | <0.20 | <0.50 | <0.20 |
| | | 9/10/99 | *991-091099-252* | **6.4** | <0.50 | <0.20 | <0.50 | <1.00 | <0.50 | <0.50 | – | <0.20 | – | <0.50 | <0.30 | <0.20 | <0.20 | <0.20 | <0.40 | – | – | <0.20 | <0.20 |
| | | 3/28/00 | *001-0328-1430R1* | **5.2** | <0.50 | <0.50 | <0.50 | <0.50 | 6.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 3/28/00 | *001-0328-1430R2* (dup) | **5.3** | <0.50 | <0.50 | 0.51 | <0.50 | 6.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 6/28/01 | *1430 Richardson A* | 4.86 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <2.00 | <2.00 | <1.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <2.00 | <2.00 | <1.00 | <1.00 | <1.00 |
| | | 6/28/01 | *1430 Richardson B* (dup) | 4.82 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <2.00 | <2.00 | <1.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <2.00 | <2.00 | <1.00 | <1.00 | <1.00 |
| | | 9/16/02 | *11152-091602-1430R* | 4.8 | <0.50 | <0.50 | <0.50 | <0.50 | 0.69 | <0.50 | <0.50 | <0.50 | 0.88 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/13/03 | *1199-101303-7* | 3.7 | <0.50 | <0.50 | <0.50 | <0.50 | 0.61 | <0.50 | <0.50 | <0.50 | 0.88 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/4/04 | *1246-100404-010* | 3.8 | <0.50 | <0.50 | <0.50 | <1.0 | 0.56 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/31/05 | *1295-103105-009* | 3.90 | <0.5 | <0.5 | <0.5 | <0.5 | 0.53 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | | 9/6/06 | *1330-090606-005* | 4.40 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | | 8/9/07 | *11368-82006-003* | 4.36 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 1/13/09 | *1437-011309-002* | 3.47 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 7/27/11 | *1566-072711-RW-2* | 2.73 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <2.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 8/13/12 | *1566-080312-RW16* | 2.90 | 0.570 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <2.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |

TABLE 3

HISTORY OF VOC CONCENTRATIONS IN RESIDENTIAL WELLS SAMPLED IN 2012

(all concentrations in µg/L)

| Address | Well Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis*-1,2-Dichloroethene (cDCE) | *trans*-1,2-Dichloroethene (tDCE) | 1,1,1-Trichloroethane (TCA) | Chloroethane | 1,1-Dichloroethane | 1,2-Dichloroethane | Bromomethane | Bromodichloromethane | Chloromethane | Methylene Chloride (Dichloromethane) | Chloroform | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | *n*-Butylbenzene | 1,2-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA Maximum Contaminant Level (MCL) | | | | 5 | 70 | 100 | 200 | 290* | 7,300* | 5 | 51* | 14* | 66* | 5 | 140* | 5 | 1,000 | 700 | 10,000 | 730* | 370* | 600 | 75 |
| Sloan Street | | | | | | | | | | | | | | | | | | | | | | | |
| 1357 | unknown | 6/23/95 | *7294-623-009* | **10.6** | <0.20 | 0.30 | 6.38 | <0.50 | 2.62 | <0.20 | <0.50 | <0.20 | <0.50 | 2.73 | <0.20 | 0.39 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 | <0.20 |
| | | 10/11/95 | *72912-1011-110-con* | **8.9** | 1.3 | <0.50 | 4.8 | <0.50 | 2.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.93 | <0.50 | 0.35 J | <0.50 | <0.50 | <1.00 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 11/15/95 | *72911-1115-150* | **8.1** | 1.2 | 0.31 J | 3.5 | <0.50 | 2.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.36 J | <0.50 | <0.50 | <1.00 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 7/11/00 | *911-0711-1357S-01* | **7.2** | 0.78 | <0.50 | 0.60 | <0.50 | 1.30 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.00 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 9/20/02 | *11152-092002-1357S-1* | **7.1** | 0.72 | <0.50 | <0.50 | <0.50 | 1.1 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/8/03 | *1199-100803-10* | **5.0** | 0.68 | <0.50 | <0.50 | <0.50 | 0.75 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/8/03 | *1199-100803-100* (dup) | **5.1** | 0.69 | <0.50 | <0.50 | <0.50 | 0.79 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/1/04 | *1246-100104-009* | **5.9** | 0.68 | <0.50 | <0.50 | <1.0 | 0.65 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/19/05 | *1295-101905-001* | **5.10** | 0.61 | <0.5 | <0.5 | <0.5 | 0.54 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | | 10/19/05 | *1295-101905-002* (dup) | **5.08** | 0.62 | <0.5 | <0.5 | <0.5 | 0.54 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | | 9/26/06 | *1330-092606-006* | **5.64** | 0.64 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | | 8/9/07 | *11368-82006-005* | **5.16** | 0.64 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 1/13/09 | *1437-011309-001* | 4.08 | 0.550 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 12/2/11 | *1566-120211-RW-15* | 3.19 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <2.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 8/13/12 | *1566-081312-RW20* | 3.53 | 0.540 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <2.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 8/13/12 | *1566-081312-RW21* | 3.57 | 0.520 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <2.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| 1366 | 40 | 6/23/95 | *7294-623-005* | **10.1** | <0.50 | 0.81 | 3.18 | <0.50 | 3.03 | <0.50 | <0.50 | <0.50 | <0.50 | 2.39 | <0.50 | **172.0** | 2.82 | 0.77 | 3.17 | 0.25 | <0.50 | <0.50 | <0.50 |
| | | 11/1/95 | *72911-1101-122* | **6.7** | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | **105.0** | <0.50 | <0.50 | <0.20 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 11/1/95 | *72911-1101-123-con* (dup) | **7.4** | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | **111.0** | <0.50 | <0.50 | 0.32 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 8/6/97 | (sample number not known) | **5.37** | 1.11 | <1.00 | 1.26 | <1.00 | 1.79 | <1.00 | <1.00 | <1.00 | <1.00 | <5.0 | <1.00 | **15.5** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 |
| | | 8/10/99 | *994123004* | **5.83** | 1.11 | <0.50 | <0.50 | <0.50 | 1.59 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.33 | <0.50 | <0.50 | 1.04 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 7/12/00 | *911-0712-1366S-01* | **6.1** | 1.1 | 0.73 | <0.50 | <0.50 | 1.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.76 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 6/28/01 | *1366 Sloan* | **5.47** | 1.27 | <1.00 | <1.00 | <1.00 | 1.58 | <2.00 | <2.00 | <1.00 | <1.00 | <5.00 | <1.00 | 0.670 | <1.00 | <1.00 | <2.00 | <2.00 | <1.00 | <1.00 | <1.00 |
| | | 9/18/02 | *11152-091802-1366S-1* | **5.1** | 1.2 | 1.2 | <0.50 | <0.50 | 1.3 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.50 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/8/03 | *1199-100803-11* | 4.0 | 1.4 | 1.6 | <0.50 | <0.50 | 1.1 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/8/03 | *1199-100803-110* (dup) | 3.9 | 1.3 | 1.5 | <0.50 | <0.50 | 1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 9/27/04 | *1246-092704-004* | 4.0 | 1.3 | 1.9 | <0.50 | <1.0 | 0.98 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 9/27/04 | *1246-092704-005* (dup) | 3.9 | 1.3 | 1.9 | <0.50 | <1.0 | 1.0 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/31/05 | *1295-103105-010* | 4.08 | 1.48 | 2.32 | <0.5 | <0.5 | 1.04 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | | 9/27/06 | *1330-092706-007* | 3.77 | 1.34 | 2.26 | <0.5 | <0.5 | 0.71 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <1.0 | <0.5 | <0.5 | <0.5 | <0.5 |
| | | 8/10/07 | *11368-82006-006* | 2.82 | 1.52 | 2.39 | <0.500 | <0.500 | 0.73 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 1/28/09 | *1437-012809-009* | 2.41 | 1.23 | 1.81 | <0.500 | <1.00 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 8/4/11 | *1566-080411-RW-10* | 1.49 | 1.04 | 1.49 | <0.500 | <1.00 | <0.500 | <0.500 | <2.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 8/8/12 | *1566-080812-RW19* | 1.35 | 1.24 | 2.24 | <0.500 | <1.00 | <0.500 | <0.500 | <2.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |

TABLE 3

HISTORY OF VOC CONCENTRATIONS IN RESIDENTIAL WELLS SAMPLED IN 2012

(all concentrations in µg/L)

| Address | Well Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis*-1,2-Dichloroethene (cDCE) | *trans*-1,2-Dichloroethene (tDCE) | 1,1,1-Trichloroethane (TCA) | Chloroethane | 1,1-Dichloroethane | 1,2-Dichloroethane | Bromomethane | Bromodichloromethane | Chloromethane | Methylene Chloride (Dichloromethane) | Chloroform | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | *n*-Butylbenzene | 1,2-Dichlorobenzene | 1,4-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EPA Maximum Contaminant Level (MCL) | | | | 5 | 70 | 100 | 200 | 290* | 7,300* | 5 | 51* | 14* | 66* | 5 | 140* | 5 | 1,000 | 700 | 10,000 | 730* | 370* | 600 | 75 |
| Sloan Street | | | | | | | | | | | | | | | | | | | | | | | |
| 1369 | unknown | 9/25/95 | *72912-925-047* | 3.1 | 0.79 | <0.50 | 1.6 | <0.50 | 1.2 | 1.1 | <0.50 | <0.50 | <0.50 | <1.0 B | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 11/1/95 | *72911-1101-128* | 2.7 | 0.72 | <0.50 | <1.4 B | <0.50 | 1.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 11/1/95 | *72911-1101-129* (dup) | 2.7 | 0.74 J | <0.50 | <1.5 B | <0.50 | 1.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 9/27/04 | *1246-092704-007* | **6.2** | 0.86 | 0.56 | <0.50 | <1.0 | 0.93 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 |
| | | 10/31/05 | *1295-103105-011* | 3.61 | 1.07 | 0.81 | <0.5 | <0.5 | 1.00 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | | 10/31/05 | *1295-103105-012* (dup) | 3.54 | 1.03 | 0.81 | <0.5 | <0.5 | 0.95 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | | 10/20/06 | *1330-102006-009* | 4.52 | 0.93 | 0.71 | <0.5 | <0.5 | 0.62 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.21 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | | 9/24/07 | *1368-092407-002* | 4.57 | 1.35 | 1.15 | <0.500 | <0.500 | 0.600 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 9/24/07 | *1368-092407-003* (dup) | **5.00** | 1.48 | 1.46 | <0.500 | <0.500 | 0.560 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 1/28/09 | *1437-012809-007* | 4.78 | 1.11 | 1.02 | <0.500 | <1.00 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 1/28/09 | *1437-012809-008* (dup) | 4.66 | 1.00 | 1.36 | <0.500 | <1.00 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 7/27/11 | *1566-072711-RW-4* | 2.47 | 0.870 | 0.930 | <0.500 | <1.00 | <0.500 | <0.500 | <2.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | 0.510 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |
| | | 7/27/11 | *1566-072711-RW-5* (dup) | 2.61 | 0.920 | 0.850 | <0.500 | <1.00 | <0.500 | <0.500 | <2.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | 0.500 | <0.500 | <1.00 | 1.25 | <0.500 | <0.500 | <0.500 |
| | | 8/8/12 | *1566-080812-RW17* | 3.06 | 0.960 | 0.970 | <0.500 | <1.00 | <0.500 | <0.500 | <2.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 |

Notes: Only those analytes detected above their limit of quantitation (LOQ) are listed.

— Analyte not quantitated

**Bold** Concentration exceeds the EPA Maximum Contaminant Level (MCL) for that analyte.

< Analyte not reported above given limit of quantitation (LOQ).

B Analyte also reported in laboratory blank or trip blank.

J Estimated concentration. Result was below LOQ.

* Compound does not have an MCL. ADEC Table C Groundwater-Cleanup Level shown.

(dup) Field duplicate of preceding sample

TABLE 4
HISTORY OF VOC CONCENTRATIONS IN MONITORING WELLS
(all concentrations in µg/L)

| Well Number | Well Screen Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis* -1,2-Dichloroethene (cDCE) | *trans* -1,2-Dichloroethene (tDCE) | 1,1,1-Trichloroethane (TCA) | Chloroethane | 1,1-Dichloroethane | 1,2-Dichloroethane | Tetrachloroethene | 1,1-Dichloroethene | Bromomethane | Chloromethane | Methylene Chloride (Dichloromethane) | Chloroform | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | *n* -Butylbenzene | 1,2-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADEC Table C Groundwater-Cleanup Level | | | | 5 | 70 | 100 | 200 | 290 | 7,300 | 5 | 5 | 7 | 51 | 66 | 5 | 140 | 5 | 1,000 | 700 | 10,000 | 730 | 370 | 600 |
| ESI MW-3 | 5-10 | 10/1/01 | *928-100101-MW3* | 1.2 | <0.50 | <0.50 | <0.50 | <0.50 | 0.56 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| MW-1 | 17-27 | 9/7/89 | *220-907-B101* | <0.2 | – | <1.0 | <0.4 | <2.0 | <0.2 | <0.2 | <0.2 | <1.0 | <2.0 | <2.0 | <2.0 | <0.2 | <0.2 | <0.2 | <0.2 | <0.6 | – | – | <0.2 |
| | | 12/19/94 | *667-1219-101* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/12/95 | *72912-1012-114* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | 0.47 J | 0.30 J | <0.50 |
| | | 8/14/96 | *72981496-MW1* | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| MW-2 | 18-28 | 9/8/89 | *220-908-B21* | <0.2 | – | <1.0 | 1.0 | 14.0 | 0.5 | 0.5 | <0.2 | <1.0 | <2.0 | <2.0 | <2.0 | <0.2 | 0.6 | 12 | 1.1 | 4.9 | – | – | <0.2 |
| | | 12/19/94 | *667-1219-201* | <0.50 | <0.50 | <0.50 | 5.5 | <0.50 | 0.63 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/12/95 | *72912-1012-113* | <0.50 | <0.50 | <0.50 | 2.2 | <0.50 | 0.36 J | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/14/96 | *72981496-MW2* | 0.29 | 0.52 | <0.20 | 0.86 | <1.00 | 0.89 | <0.20 | 0.65 | <0.20 | <1.0 | <0.50 | <0.50 | <0.30 | 0.46 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 2/27/97 | *729-022797-MW2* | <0.50 | <0.50 | <0.50 | 2.3 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 2/27/97 | *729-022797-MW29* (dup) | <0.50 | <0.50 | <0.50 | 2.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 7/24/98 | *922-072498-MW2* | <0.50 | <0.50 | <0.50 | 4.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| MW-3 | 18-28 | 9/8/89 | *220-908-B31* | <0.2 | – | <1.0 | <0.4 | <2.0 | <0.2 | <0.2 | <0.2 | <1.0 | <2.0 | <2.0 | <2.0 | <0.2 | 0.9 | 1.8 | 0.2 | 1.2 | – | – | <0.2 |
| | | 12/19/94 | *667-1219-301* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/12/95 | *72912-1012-115* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | 0.42 J | <0.50 | <0.50 |
| MW-4 | 70-80 | 12/20/94 | *667-1220-401* | 3.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/12/96 | *729-81296-MW4* | 4.58 | 0.33 | <0.20 | <0.20 | <1.00 | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 11/22/96 | *729-112296-MW4* | 3.64 | 0.28 | <0.20 | <0.20 | <1.00 | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 11/22/96 | *729-112296-MW21* (dup) | 3.70 | 0.25 | <0.20 | <0.20 | <1.00 | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 3/13/97 | *729-031397-MW5* | 3.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 7/28/98 | *922-072898-MW4* | 3.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/23/99 | *979-082399-MW4-23* | 2.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.5 B | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/25/00 | *1037 -082500-MW4* | 2.4 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | 0.55 | <0.50 | <0.50 |
| | | 9/20/01 | *1086-092001-MW04* | 2.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/7/04 | *1246-100704-510* | 1.57 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-5 | 20-30 | 12/20/94 | *667-1220-501* | **34 D** | 1.8 | <0.50 | 3.60 | <0.50 | 0.83 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <1.0 | <0.50 | 0.71 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/12/96 | *729-81296-MW5* | **27.2** | 2.31 | 0.57 | 2.25 | <1.00 | 0.73 | <0.20 | <0.20 | 0.22 | <1.00 | <0.50 | <0.50 | <0.30 | 0.66 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 8/12/96 | *729-81296-MWA* (dup) | **27.2** | 2.43 | 0.58 | 2.39 | <1.00 | 0.78 | <0.20 | <0.20 | 0.22 | <1.00 | <0.50 | <0.50 | <0.30 | 0.69 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 11/22/96 | *729-112296-MW5* | **30.8** | 1.97 | 0.49 | 1.49 | <1.00 | 0.57 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | 0.52 B | <0.30 | <0.20 | <0.40 | <0.20 | <0.50 | <0.20 |
| | | 3/13/97 | *729-031397-MW4* | **26.0** | 1.60 | 0.44 J | 0.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.47 J | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 7/28/98 | *922-072898-MW5* | **23.0** | 1.8 | 0.52 | 0.96 | <0.50 | 0.93 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/12/99 | *979-081299-MW5-05* | **21.0** | 1.7 | 0.63 | 0.77 | <0.50 | 0.81 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.66 B | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/12/99 | *979-081299-MW5-06* (dup) | **21.0** | 1.7 | 0.61 | 0.78 | <0.50 | 0.78 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.2 B | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/29/00 | *1037-082900-MW5* | **19.0** | 1.5 | 0.60 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/20/01 | *1086-092001-MW05* | **17.0** | 1.7 | 0.77 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/21/03 | *1199-102103-004* | **14.2** | 1.59 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/7/04 | *1246-100704-511* | **11.9** | 1.64 | 1.27 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/27/06 | *1295-042706-023* | **8.77** | 1.77 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 2/20/09 | *1437-022009-112* | **7.11** | 2.12 | 3.24 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/26/11 | *1566-072611-MW07* | 4.73 | 2.28 | 4.05 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |

TABLE 4
HISTORY OF VOC CONCENTRATIONS IN MONITORING WELLS
(all concentrations in µg/L)

| Well Number | Well Screen Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis*-1,2-Dichloroethene (cDCE) | *trans*-1,2-Dichloroethene (tDCE) | 1,1,1-Trichloroethane (TCA) | Chloroethane | 1,1-Dichloroethane | 1,2-Dichloroethane | Tetrachloroethene | 1,1-Dichloroethene | Bromomethane | Chloromethane | Methylene Chloride (Dichloromethane) | Chloroform | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | *n*-Butylbenzene | 1,2-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADEC Table C Groundwater-Cleanup Level | | | | 5 | 70 | 100 | 200 | 290 | 7,300 | 5 | 5 | 7 | 51 | 66 | 5 | 140 | 5 | 1,000 | 700 | 10,000 | 730 | 370 | 600 |
| MW-6 | 20-30 | 11/22/94 | *667-1122-601* | 2.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.52 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/13/95 | *72903-1013-MW6* | 2.8 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | 0.47 J | <0.50 | <0.50 |
| | | 8/17/96 | *729-81796-MW6* | 2.83 | <0.20 | <0.20 | <0.20 | <1.00 | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 2/28/97 | *729-022897-MW6* | 2.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 7/22/98 | *922-072298-MW6* | 2.1 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 7/22/98 | *922-072298-MW66* (dup) | 2.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/17/99 | *979-081799-MW6-13* | 1.9 | <0.50 | <0.50 | 0.56 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/19/01 | *1086-091901-MW06* | 1.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.2 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/7/02 | *1152-100702-018* | 1.55 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/19/05 | *1295-101905-501* | 1.66 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-7 | 70-80 | 11/22/94 | *667-1122-701* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/13/95 | *72903-1013-MW7* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.30 J | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/17/96 | *729-81796-MW7* | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 2/28/97 | *729-022897-MW7* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 7/22/98 | *922-072298-MW7* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/17/99 | *979-081799-MW7-12* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.56 B | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| MW-8 | 70-80 | 12/20/94 | *667-1220-801* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/13/95 | *72903-1013-MW8* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/17/96 | *729-81796-MW8* | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 7/22/98 | *922-072298-MW8* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/16/99 | *979-081699-MW8-09* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| MW-9 | 20-30 | 12/20/94 | *667-1220-901* | **7.4** | 0.58 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 12/20/94 | *667-1220-902* (dup) | **7.2** | 0.59 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | 1.8 | <1.0 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/13/95 | *72903-1013-MW9* | **7.7** | 0.80 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/13/95 | *72903-1013-MW11* (dup) | **7.3** | 0.76 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/17/96 | *729-81796-MW9* | **5.62** | 0.65 | <0.20 | <0.20 | <1.00 | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 7/22/98 | *922-072298-MW9* | 3.7 | 0.53 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/16/99 | *979-081699-MW9-10* | 3.0 | 0.53 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/19/01 | *1086-091901-MW09* | 2.1 | 0.55 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/26/02 | *1152-092602-019* | 1.5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <0.50 | <1.0 | <1.0 | <3.0 | <5.0 | <1.0 | <1.0 |
| MW-10 | 20-30 | 11/28/94 | *667-1128-1001* | 1.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/13/95 | *72903-1013-MW10* | 1.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/17/96 | *729-81796-MW10* | 1.18 | 0.29 | <0.20 | <0.20 | <1.00 | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 8/17/96 | *729-81796-MWC* (dup) | 1.26 | 0.32 | <0.20 | <0.20 | <1.00 | <0.20 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 7/22/98 | *922-072298-MW10* | 0.73 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/20/99 | *979-082099-MW10-20* | 0.57 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/19/01 | *1086-091901-MW10* | 0.73 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.96 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |

TABLE 4
HISTORY OF VOC CONCENTRATIONS IN MONITORING WELLS
(all concentrations in µg/L)

| Well Number | Well Screen Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis* -1,2-Dichloroethene (cDCE) | *trans* -1,2-Dichloroethene (tDCE) | 1,1,1-Trichloroethane (TCA) | Chloroethane | 1,1-Dichloroethane | 1,2-Dichloroethane | Tetrachloroethene | 1,1-Dichloroethene | Bromomethane | Chloromethane | Methylene Chloride (Dichloromethane) | Chloroform | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | *n* -Butylbenzene | 1,2-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADEC Table C Groundwater-Cleanup Level | | | | 5 | 70 | 100 | 200 | 290 | 7,300 | 5 | 5 | 7 | 51 | 66 | 5 | 140 | 5 | 1,000 | 700 | 10,000 | 730 | 370 | 600 |
| MW-11 | 70-80 | 11/3/95 | *729-1103-MW11* | 1.2 | <0.50 | <0.50 | 0.76 | <0.50 | 0.59 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 5/22/97 | *729-052297-MW11* | 1.6 | 0.41 J | <0.50 | 0.61 | <0.50 | 0.70 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.45 J | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/23/97 | *864-102397-MW11* | 1.28 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 |
| | | 7/23/98 | *922-072398-MW11* | 1.5 | <0.50 | <0.50 | <0.50 | <0.50 | 0.62 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/23/99 | *979-082399-MW11-21* | 1.3 | <0.50 | <0.50 | <0.50 | <0.50 | 0.55 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.6 B | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/23/99 | *979-082399-MW11-22* (dup) | 1.3 | <0.50 | <0.50 | <0.50 | <0.50 | 0.55 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/23/00 | *1037-082300-MW11* | 1.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/28/01 | *1086-092801-MW11* | 1.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/3/02 | *1152-100302-017* | 1.07 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/29/03 | *1199-102903-024* | 1.07 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | 2.04 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/14/04 | *1246-101404-528* | 1.20 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| decommissioned | | 4/27/06 | *1295-042706-018* | 1.09 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-12 | 20-30 | 11/8/95 | *729-1108-MW12* | 0.38 J | 0.63 | <0.50 | <0.50 | <0.50 | 1.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.2 | <0.50 | **7.2** | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | 0.64 |
| | | 5/22/97 | *729-062297-MW12* | 1.0 | 0.88 | <0.50 | <0.50 | <0.50 | 1.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | **17.0** | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | 0.67 |
| | | 10/23/97 | *864-102397-MW12* | 0.83 | <1.0 | <1.0 | <1.0 | <1.0 | 1.9 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | **17.1** | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 |
| | | 7/23/98 | *922-072398-MW12* | 1.1 | 0.81 | <0.50 | <0.50 | <0.50 | 1.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.63 | **14.0** | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | 0.56 |
| | | 8/19/99 | *979-081999-MW12-19* | 1.2 | 0.81 | <0.50 | <0.50 | <0.50 | 1.4 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | **8.8** | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/23/00 | *1037-082300-MW12* | 1.0 | 0.67 | <0.50 | <0.50 | <0.50 | 0.98 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 4.7 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/28/01 | *1086-092801-MW12* | 1.2 | 1.0 | <0.50 | <0.50 | <0.50 | 1.1 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.3 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | 0.62 |
| decommissioned | | 9/26/02 | *1152-092602-014* | 1.1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | 2.2 | <1.0 | <1.0 | <3.0 | <5.0 | <1.0 | <1.0 |
| MW-13 | 40-50 | 11/8/95 | *729-1108-MW13* | 1.7 | 0.61 | <0.50 | 0.77 | <0.50 | 0.95 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.7 | <0.50 | **31 D** | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/19/96 | *729-81996-MW13* | 3.67 | 1.07 | 0.32 | 1.35 | <1.00 | 1.71 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | **63.3** | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 8/19/96 | *729-81996-MWD* (dup) | 3.84 | 1.10 | 0.31 | 1.38 | <1.00 | 1.8 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | **67.2** | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 11/19/96 | *729-111996-MW13* | 3.24 | 0.96 | 0.3 | 1.3 | <1.00 | 1.7 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | **57.6 B** | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 11/19/96 | *729-111996-MW19* (dup) | 3.55 | 1.08 | 0.31 | 1.37 | <1.00 | 1.83 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | **60.6 B** | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 5/15/97 | *729-051597-MW13* | 4.6 | 1.2 | 0.45 J | 0.14 | <0.50 | 2.3 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | **43.0** | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/1/97 | *864-100197-MW13* | 4.03 | 0.96 J | <1.0 | 1.09 | <1.0 | 2.08 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | **35.5** | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 |
| | | 7/24/98 | *922-072498-MW13* | 4.2 | 1.1 | <0.50 | 1.1 | <0.50 | 2.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | **15.0** | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/13/99 | *979-081399-MW13-07* | **5.1** | 1.1 | 0.56 | 0.7 | <0.50 | 1.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.69 B | <0.50 | 4.9 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/8/00 | *1037-090800-MW13* | **5.3** | 1.1 | 0.59 | <0.50 | <0.50 | 1.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.8 B | <0.50 | 2.0 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/24/01 | *1086-092401-MW13* | **5.6** | 1.3 | 0.77 | <0.50 | <0.50 | 1.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.1 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/26/02 | *1152-092602-015* | **5.2** | 1.2 | <1.0 | <1.0 | <1.0 | 1.4 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | 0.77 | <1.0 | <1.0 | <3.0 | <5.0 | <1.0 | <1.0 |
| | | 10/23/03 | *1199-102303-015* | **5.52** | 1.25 | 1.09 | <1.00 | <1.00 | 1.15 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | 0.45 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/14/04 | *1246-101404-529* | **5.19** | 1.15 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/14/04 | *1246-101404-530* (dup) | **5.63** | 1.28 | 1.00 | <1.00 | <1.00 | 1.01 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/13/06 | *1295-041306-010* | 4.84 | 1.00 | 1.14 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/13/06 | *1295-041306-011* (dup) | **5.18** | 1.05 | 1.25 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/20/07 | *1368-082007-020* | 3.20 | 1.10 | 1.40 | <1.0 | <5.0 | 0.48 J | <1.0 | <1.0 | 0.13 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 |
| | | 1/26/09 | *1437-012609-100* | 3.08 | 1.00 | 1.40 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <0.500 |
| | | 7/28/11 | *1566-072811-MW21* | 1.87 | 1.22 | 4.12 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/3/12 | *1566-080312-MW23* | 1.72 | 1.07 | 1.89 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |

TABLE 4
HISTORY OF VOC CONCENTRATIONS IN MONITORING WELLS
(all concentrations in µg/L)

| Well Number | Well Screen Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis* -1,2-Dichloroethene (cDCE) | *trans* -1,2-Dichloroethene (tDCE) | 1,1,1-Trichloroethane (TCA) | Chloroethane | 1,1-Dichloroethane | 1,2-Dichloroethane | Tetrachloroethene | 1,1-Dichloroethene | Bromomethane | Chloromethane | Methylene Chloride (Dichloromethane) | Chloroform | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | *n* -Butylbenzene | 1,2-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADEC Table C Groundwater-Cleanup Level | | | | 5 | 70 | 100 | 200 | 290 | 7,300 | 5 | 5 | 7 | 51 | 66 | 5 | 140 | 5 | 1,000 | 700 | 10,000 | 730 | 370 | 600 |
| MW-14 | 20-30 | 11/8/95 | *729-1108-MW14* | 4.8 | 1.4 | 0.40 J | 1.1 | <0.50 | 2.0 | <0.50 | <0.50 | 0.40 J | <0.50 | <0.50 | <0.50 | <0.50 | **110 D** | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/19/96 | *729-81996-MW14* | **6.45** | 1.43 | 0.51 | 1.49 | <1.00 | 2.37 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | **99.7** | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 11/19/96 | *729-111996-MW14* | **6.69** | 1.39 | 0.53 | 1.39 | <1.00 | 2.56 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | **92.9 B** | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 5/15/97 | *729-051597-MW14* | **6.2** | 1.5 | 0.64 | 1.3 | <0.50 | 2.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.62 | **48** | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/1/97 | *864-100197-MW14* | **5.66** | 1.27 | <1.0 | 0.86 J | <1.0 | 2.35 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | **55.6** | 1.06 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 |
| | | 7/24/98 | *922-072498-MW14* | **6.4** | 1.4 | 0.66 | 0.79 | <0.50 | 2.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | **21** | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/13/99 | *979-081399-MW14-08* | **6.2** | 1.3 | 0.7 | <0.50 | <0.50 | 2.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.62 B | <0.50 | **7.4** | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/8/00 | *1037-090800-MW14* | **6.0** | 1.3 | 0.76 | <0.50 | <0.50 | 1.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.9 B | <0.50 | 2.5 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/24/01 | *1086-092401-MW14* | **5.5** | 1.5 | 0.93 | <0.50 | <0.50 | 1.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.2 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/26/02 | *1152-092602-016* | 4.8 | 1.3 | 1 | <1.0 | <1.0 | 1.3 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | 0.86 | <1.0 | <1.0 | <3.0 | <5.0 | <1.0 | <1.0 |
| | | 10/23/03 | *1199-102303-016* | 4.41 | 1.46 | 1.6 | <1.00 | <1.00 | 1.2 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | 0.56 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/15/04 | *1246-101504-531* | 3.68 | 1.15 | 1.43 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | 0.420 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/13/06 | *1295-041306-009* | 3.53 | 1.38 | 2.07 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-15 | 63-73 | 11/21/95 | *729-1121-MW15* | **12** | 1.1 | 0.43 J | 6.8 | <0.50 | 2.3 | <0.50 | <0.50 | 3.3 | <0.50 | <0.50 | 0.36 J | <0.50 | 0.33 J | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 11/21/95 | *729-1121-MW30* (dup) | **12** | 1.1 | 0.45 J | 7.0 | <0.50 | 2.4 | <0.50 | <0.50 | 3.7 | <0.50 | <0.50 | 0.52 | <0.50 | 0.33 J | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 5/15/97 | *729-051597-MW15* | **12** | 1.1 | <0.50 | 3.8 | <0.50 | 1.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 7/24/98 | *922-072498-MW15* | **14** | 1.2 | <0.50 | 2.5 | <0.50 | 2.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/17/99 | *979-081799-MW15-11* | **15** | 1.1 | <0.50 | 1.7 | <0.50 | 2.4 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.6 B | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/25/00 | *1037-082500-MW15* | **14** | 1.1 | <0.50 | 1.3 | <0.50 | 2.1 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/21/01 | *1086-092101-MW15* | **14** | 1.3 | <0.50 | 1.1 | <0.50 | 1.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/25/02 | *1152-092502-011* | **11.7** | 1.21 | <1.00 | <1.00 | <1.00 | 1.32 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 9/25/02 | *1152-092502-012* (dup) | **11.5** | 1.05 | <1.00 | <1.00 | <1.00 | 1.28 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/24/03 | *1199-102403-019* | **10.2** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/12/04 | *1246-101204-524* | **9.58** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| decommissioned | | 8/29/06 | *1330-082906-501* | **9.08** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-15A | 70-75 | 8/20/07 | *1368-082007-017* | 2.70 | 0.40 J | 0.15 J | <1.0 | <5.0 | 0.11 J | <1.0 | <1.0 | <1.0 | <1.0 | 0.18 J | <1.0 | <1.0 | <1.0 | 0.097 J | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 |
| | | 1/27/09 | *1437-012709-109* | 3.14 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/27/11 | *1566-072711-MW10* | 2.74 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-16 | 10-20 | 11/21/95 | *729-1121-MW-16* | **16** | 1.8 | 0.96 | 8.9 | <0.50 | 3.5 | <0.50 | <0.50 | 4.3 | <0.50 | <0.50 | 1.3 | <0.50 | 0.68 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/19/96 | *729-81996-MW16* | **18.6** | 1.69 | 0.74 | 6.98 | <1.00 | 2.94 | <0.20 | <0.20 | 0.27 | <1.00 | <0.50 | <0.50 | <0.30 | 0.74 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 11/21/96 | *729-112196-MW16* | **20.8** | 1.86 | 0.87 | 6.76 | <1.00 | 3.09 | <0.20 | <0.20 | 0.3 | <1.00 | <0.50 | <0.50 | <0.30 | 0.43 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 5/15/97 | *729-051597-MW16* | **18** | 1.8 | 0.84 | 5.8 | <0.50 | 3.1 | <0.50 | <0.50 | 0.48 J | <0.50 | <0.50 | <0.50 | <0.50 | 0.42 J | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 7/24/98 | *922-072498-MW16* | **17** | 1.6 | 0.68 | 3.4 | <0.50 | 2.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/18/99 | *979-081899-MW16-15* | **16** | 1.4 | 0.67 | 1.9 | <0.50 | 2.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/7/00 | *1037-090700-MW16* | **16** | 1.3 | 0.59 | 1.4 | <0.50 | 2.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/21/01 | *1086-092101-MW16* | **13** | 1.4 | 0.64 | 1.1 | <0.50 | 1.9 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/25/02 | *1152-092502-013* | **11.5** | 1.18 | <1.00 | <1.00 | <1.00 | 1.57 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/12/04 | *1246-101204-523* | **10.8** | 1.25 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| decommissioned | | 4/13/06 | *1295-041306-012* | **9.99** | 1.22 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-16A | 10-20 | 8/20/07 | *1368-082007-018* | **5.3** | 0.78 J | 0.33 J | 0.12 J | <5.0 | 0.54 J | <1.0 | <1.0 | 0.11 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 |
| | | 1/27/09 | *1437-012709-110* | 4.65 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/27/11 | *1566-072711-MW09* | 4.30 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |

TABLE 4
HISTORY OF VOC CONCENTRATIONS IN MONITORING WELLS
(all concentrations in µg/L)

| Well Number | Well Screen Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis*-1,2-Dichloroethene (cDCE) | *trans*-1,2-Dichloroethene (tDCE) | 1,1,1-Trichloroethane (TCA) | Chloroethane | 1,1-Dichloroethane | 1,2-Dichloroethane | Tetrachloroethene | 1,1-Dichloroethene | Bromomethane | Chloromethane | Methylene Chloride (Dichloromethane) | Chloroform | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | *n*-Butylbenzene | 1,2-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADEC Table C Groundwater-Cleanup Level | | | | 5 | 70 | 100 | 200 | 290 | 7,300 | 5 | 5 | 7 | 51 | 66 | 5 | 140 | 5 | 1,000 | 700 | 10,000 | 730 | 370 | 600 |
| MW-17 | 20-30 | 2/16/96 | *7296-0216-MW17* | **66 D** | 4.2 | 0.88 | 48 D | <0.50 | 12.0 | <0.50 | <0.50 | 5.9 | <0.50 | 0.85 | <0.50 | <0.50 | 1.1 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/13/96 | *729-81396-MW17* | **55.6** | 3.79 | 0.82 | 35.3 | <1.00 | 11.9 | <0.20 | <0.20 | 1.17 | <1.00 | <0.50 | <0.50 | <0.30 | 1.10 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 11/20/96 | *729-112096-MW17* | **58.2** | 3.94 | 0.71 | 32.1 | <1.00 | 11.5 | <0.20 | <0.20 | 1.11 | <1.00 | <0.50 | <0.50 | <0.30 | 1.09 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 3/4/97 | *729-030497-MW17* | **61.0** | 3.6 | 0.73 | 35 | <0.50 | 9.2 | <0.50 | <0.50 | 2.5 | <0.50 | <0.50 | <0.50 | <0.50 | 0.91 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 7/28/98 | *922-072898-MW17* | **46.0** | 3.1 | 0.56 | 17 | <0.50 | 12.0 | <0.50 | <0.50 | 1.3 | <0.50 | <0.50 | <0.50 | <0.50 | 0.70 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/4/99 | *979-080499-MW17-01* | **41.0** | 2.9 | 0.56 | 12 | <0.50 | 11.0 | <0.50 | <0.50 | 1.2 | <0.50 | <0.50 | <0.50 | <0.50 | 0.59 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/30/00 | *1037-083000-MW17* | **37.0** | 2.8 | <0.50 | 9.6 | <0.50 | 7.5 | <0.50 | <0.50 | 0.95 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/30/00 | *1037-083000-001* (dup) | **38.0** | 2.9 | <0.50 | 10 | <0.50 | 8.0 | <0.50 | <0.50 | 0.99 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/25/01 | *1086-092501-MW17* | **30.0** | 3.0 | 0.53 | 6.3 | <0.50 | 4.8 | <0.50 | <0.50 | 0.65 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/25/01 | *1086-092501-MW117* (dup) | **30.0** | 3.1 | 0.54 | 6.4 | <0.50 | 4.8 | <0.50 | <0.50 | 0.67 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/20/03 | *1199-102003-002* | **32.0** | 2.46 | <1.00 | 2.10 | <1.00 | 2.50 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/20/03 | *1199-102003-003* (dup) | **32.2** | 2.35 | <1.00 | 2.02 | <1.00 | 2.29 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/27/06 | *1295-042706-021* | **24.1** | 2.57 | <1.00 | <1.00 | <1.00 | 2.29 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 1/27/09 | *1437-012709-105* | **18.3** | 2.50 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 1/27/09 | *1437-012709-106* (dup) | **18.2** | 2.53 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/25/11 | *1566-072511-MW01* | **16.6** | 3.03 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/25/11 | *1566-072511-MW02* (dup) | **15.4** | 2.92 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-18 | 20-30 | 2/16/96 | *7296-0216-MW18* | **31 D** | 1.9 | 0.46 J | 30 D | <0.50 | 6.6 | <0.50 | <0.50 | 3.2 | <0.50 | <0.50 | <0.50 | <0.50 | 0.87 | 0.60 | <0.50 | 0.39 J | <0.50 | <0.50 | <0.50 |
| | | 8/13/96 | *729-81396-MW18* | **29.6** | 2.20 | 0.46 | 28.9 | <1.00 | 6.37 | <0.20 | <0.20 | 0.71 | <1.00 | <0.50 | <0.50 | <0.30 | 0.65 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 11/20/96 | *729-112096-MW18* | **30.0** | 1.99 | 0.45 | 22.7 | <1.00 | 5.62 | <0.20 | <0.20 | 0.64 | <1.00 | <0.50 | <0.50 | <0.30 | 0.60 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 3/4/97 | *729-030497-MW18* | **28.0** | 1.7 | 0.40 J | 17 | <0.50 | 4.8 | <0.50 | <0.50 | 1.3 | <0.50 | <0.50 | <0.50 | <0.50 | 0.48 J | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 7/28/98 | *922-072898-MW18* | **21.0** | 1.6 | <0.50 | 8.9 | <0.50 | 6.0 | <0.50 | <0.50 | 0.65 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 7/28/98 | *922-072898-MW88* (dup) | **20.0** | 1.6 | <0.50 | 9.0 | <0.50 | 6.1 | <0.50 | <0.50 | 0.65 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/4/99 | *979-080499-MW18-02* | **19.0** | 1.4 | <0.50 | 6.9 | <0.50 | 5.0 | <0.50 | <0.50 | 0.67 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/5/00 | *1037-090500-MW18* | **19.0** | 1.4 | <0.50 | 5.9 | <0.50 | 3.4 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/27/01 | *1086-092701-MW18* | **16.0** | 1.5 | <0.50 | 3.1 | <0.50 | 2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/22/03 | *1199-102203-011* | **16.4** | 1.53 | <1.00 | 1.09 | <1.00 | 1.10 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/27/06 | *1295-042706-022* | **9.21** | 1.04 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 2/20/09 | *1437-022009-111* | **8.43** | 1.19 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/26/11 | *1566-072611-MW06* | **6.42** | 1.29 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-19 | 69-79 | 2/16/96 | *7296-0216-MW19* | **9.1** | 0.51 | <0.50 | 3.9 | <0.50 | 1.1 | <0.50 | <0.50 | 0.41 J | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/13/96 | *729-81396-MW19* | **12.7** | 0.69 | <0.20 | 4.62 | <1.00 | 1.27 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | 0.25 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 11/20/96 | *729-112096-MW19* | **10.7** | 0.58 | <0.20 | 3.95 | <1.00 | 1.25 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | 0.22 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 8/12/99 | *979-081299-MW19-04* | **8.8** | 0.55 | <0.20 | 1.2 | <1.00 | 1.3 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | 0.59 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 8/25/00 | *1037-082500-MW19* | **9.9** | 0.54 | <0.50 | 1.1 | <0.50 | 1.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/26/01 | *1086-092601-MW19* | **8.7** | 0.58 | <0.50 | 0.65 | <0.50 | 0.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/24/02 | *1152-092402-010* | **7.45** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/6/04 | *1246-100604-507* | **7.91** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/27/06 | *1295-042706-019* | **6.28** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/27/06 | *1295-042706-020* (dup) | **5.99** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 1/27/09 | *1437-012709-107* | 4.43 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/25/11 | *1566-072511-MW03* | 4.05 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |

TABLE 4
HISTORY OF VOC CONCENTRATIONS IN MONITORING WELLS
(all concentrations in µg/L)

| Well Number | Well Screen Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis* -1,2-Dichloroethene (cDCE) | *trans* -1,2-Dichloroethene (tDCE) | 1,1,1-Trichloroethane (TCA) | Chloroethane | 1,1-Dichloroethane | 1,2-Dichloroethane | Tetrachloroethene | 1,1-Dichloroethene | Bromomethane | Chloromethane | Methylene Chloride (Dichloromethane) | Chloroform | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | *n* -Butylbenzene | 1,2-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADEC Table C Groundwater-Cleanup Level | | | | 5 | 70 | 100 | 200 | 290 | 7,300 | 5 | 5 | 7 | 51 | 66 | 5 | 140 | 5 | 1,000 | 700 | 10,000 | 730 | 370 | 600 |
| MW-20 | 20-30 | 2/16/96 | *7296-0216-MW20* | 3.5 | 1.1 | 0.97 | 2.7 | <0.50 | 2.0 | <0.50 | <0.50 | 0.33 J | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 2/16/96 | *7296-0216-MW21* (dup) | 3.5 | 1.1 | 1.0 | 2.7 | <0.50 | 2.0 | <0.50 | <0.50 | 0.34 J | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/13/96 | *729-81396-MW20* | 4.17 | 1.47 | 1.10 | 2.47 | <1.00 | 2.18 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 8/13/96 | *729-81396-MWB* (dup) | 3.43 | 1.25 | 0.97 | 2.05 | <1.00 | 2.01 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 11/20/96 | *729-112096-MW20* | 3.2 | 1.17 | 0.9 | 1.53 | <1.00 | 1.82 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 8/5/99 | *979-080599-MW20-03* | 2.8 | 0.89 | 0.68 | <0.50 | <1.00 | 0.81 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | <0.30 | <0.20 | <0.40 | <0.20 | <0.20 | <0.20 |
| | | 8/30/00 | *1037-083000-MW20* | 2.8 | 0.80 | 0.71 | <0.50 | <0.50 | 0.94 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/26/01 | *1086-092601-MW20* | 2.6 | 0.92 | 0.71 | <0.50 | <0.50 | 0.71 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/4/04 | *1246-100404-506* | 1.72 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.50 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-21 | 18-28 | 10/17/96 | *729-1017-102* | <0.20 | <0.20 | <0.20 | 12.0 | <1.00 | 1.34 | <0.20 | <0.20 | <0.20 | <1.00 | <0.50 | <0.50 | <0.30 | <0.20 | 1.23 | 0.5 | 1.97 | 0.26 | <0.20 | <0.50 |
| | | 2/27/97 | *729-022797-MW21* | <0.50 | <0.50 | <0.50 | 3.8 | <0.50 | 1.5 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 7/28/98 | *922-072898-MW21* | <0.50 | <0.50 | <0.50 | 11 | <0.50 | 2.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/19/99 | *979-081999-MW21-17* | <0.50 | <0.50 | <0.50 | 13 | <0.50 | 3.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| MW-23 | 4-14 | 8/19/99 | *979-081999-MW23-18* | <0.50 | <0.50 | <0.50 | 26 | <0.50 | 6.2 | <0.50 | <0.50 | 0.69 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/23/00 | *1037-082300-MW23* | <0.50 | <0.50 | <0.50 | 31 | <0.50 | 7.6 | <0.50 | <0.50 | 0.86 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| MW-24 | 20-30 | 8/19/99 | *979-081999-MW24-16* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 8/31/00 | *1037-083100-MW24* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/1/01 | *1086-100101-MW24* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/18/02 | *1152-091802-001* | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-25 | 60-70 | 9/26/01 | *1086-092601-MW25* | 3.2 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/3/02 | *1152-100302-016* | 2.61 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/21/03 | *1199-102103-008* | 3 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/4/04 | *1246-100404-504* | 2.49 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/14/06 | *1295-041406-013* | 2.70 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-26 | 20-30 | 9/26/01 | *1086-092601-MW26* | **11.0** | 6.1 | 1.8 | <0.50 | <0.50 | 5.6 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.79 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/18/02 | *1152-091802-003* | **18.4** | 4.17 | 1.94 | <1.00 | <1.00 | 4.45 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <5.00 | <1.00 | 0.520 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 9/18/02 | *1152-091802-004* (dup) | **18.5** | 4.12 | 1.87 | <1.00 | <1.00 | 4.36 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <5.00 | <1.00 | 0.520 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/21/03 | *1199-102103-009* | **14.9** | 2.82 | 1.43 | <1.00 | <1.00 | 3.28 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/4/04 | *1246-100404-505* | **12.3** | 3.77 | 1.64 | <1.00 | <1.00 | 2.85 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/14/06 | *1295-041406-014* | **13.8** | 4.93 | 2.03 | <1.00 | <1.00 | 2.50 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | 0.410 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/19/07 | *1368-081907-013* | **8.20** | 2.8 | 1.7 | <1.0 | <5.0 | 0.68 J | <1.0 | <1.0 | 0.21 J | <1.0 | <1.0 | <1.0 | <1.0 | 0.35 J | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 |
| | | 8/19/07 | *1368-081907-014* (dup) | **8.30** | 2.5 | 1.6 | <1.0 | <5.0 | 0.56 J | <1.0 | <1.0 | 0.21 J | <1.0 | <1.0 | <1.0 | <1.0 | 0.38 J | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 |
| | | 1/27/09 | *1437-012709-108* | **7.31** | 5.42 | 3.15 | <1.00 | <1.00 | 1.10 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/26/11 | *1566-072611-MW04* | 4.19 | 4.89 | 4.42 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/3/12 | *1566-080312-MW22* | 3.20 | 4.89 | 4.89 | <0.620 | <0.620 | <0.620 | <0.300 | <0.620 | <0.620 | <1.88 | <0.620 | <2.00 | <0.600 | <0.240 | <0.620 | <0.620 | <1.88 | <1.24 | <0.620 | <0.620 |
| MW-27 | 60-70 | 9/25/01 | *1086-092501-MW27* | 3.4 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/23/02 | *1152-092302-008* | 2.69 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/20/03 | *1199-102003-001* | 2.85 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/4/04 | *1246-100404-502* | 1.76 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/4/04 | *1246-100404-503* (dup) | 1.84 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-28 | 60-70 | 9/25/01 | *1086-092501-MW28* | 1.90 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/23/02 | *1152-092302-009* | 2.52 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/22/03 | *1199-102203-010* | 2.05 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/4/04 | *1246-100404-501* | 1.58 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-29 | 60-70 | 9/27/01 | *1086-092701-MW29* | 1.10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/23/02 | *1152-092302-007* | 1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/21/03 | *1199-102103-006* | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/7/04 | *1246-100704-512* | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |

TABLE 4
HISTORY OF VOC CONCENTRATIONS IN MONITORING WELLS
(all concentrations in µg/L)

| Well Number | Well Screen Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis* -1,2-Dichloroethene (cDCE) | *trans* -1,2-Dichloroethene (tDCE) | 1,1,1-Trichloroethane (TCA) | Chloroethane | 1,1-Dichloroethane | 1,2-Dichloroethane | Tetrachloroethene | 1,1-Dichloroethene | Bromomethane | Chloromethane | Methylene Chloride (Dichloromethane) | Chloroform | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | *n* -Butylbenzene | 1,2-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADEC Table C Groundwater-Cleanup Level | | | | 5 | 70 | 100 | 200 | 290 | 7,300 | 5 | 5 | 7 | 51 | 66 | 5 | 140 | 5 | 1,000 | 700 | 10,000 | 730 | 370 | 600 |
| MW-30 | 20-30 | 9/27/01 | *1086-092701-MW30* | **8.80** | 1.0 | <0.50 | 1.4 | <0.50 | 0.96 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/18/02 | *1152-091802-002* | **7.48** | <1.00 | <1.00 | 2.09 | <1.00 | 1.13 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/21/03 | *1199-102103-007* | **10.0** | 1.07 | <1.00 | 3.4 | <1.00 | 1.41 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/7/04 | *1246-100704-513* | **7.18** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/14/06 | *1295-041406-015* | **7.97** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/19/07 | *1368-081907-015* | **6.90** | 1.2 | 0.80 J | <1.0 | <5.0 | 0.34 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | 0.080 J |
| | | 1/27/09 | *1437-012709-104* | **5.31** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/26/11 | *1566-072611-MW05* | **5.43** | 1.36 | 1.18 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-31 | 60-70 | 9/20/01 | *1086-092001-MW31* | **7.10** | 0.57 | <0.50 | 2.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/19/02 | *1152-091902-006* | **7.31** | <1.00 | <1.00 | 1.1 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/23/03 | *1199-102303-017* | **5.80** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/11/04 | *1246-101104-520* | **5.22** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/19/05 | *1295-101905-502* | 4.77 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/19/05 | *1295-101905-503* (dup) | 4.60 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/27/06 | *1295-042706-024* | 4.55 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-32 | 20-30 | 9/20/01 | *1086-092001-MW32* | **360** | **77** | 5.5 | 47 | <0.50 | 14 | <0.50 | 0.78 | 2.8 | <0.50 | <0.50 | <0.50 | <0.50 | 1.1 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/20/01 | *1086-092001-MW132* (dup) | **380** | **77** | 5.5 | 52 | <0.50 | 14 | <0.50 | 0.78 | 2.8 | <0.50 | <0.50 | <0.50 | <0.50 | 1.1 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/19/02 | *1152-091902-005* | **320** | **87.5** | 4.82 | 32.7 | <1.00 | 10.5 | <1.00 | <1.00 | 2.12 | <1.00 | <1.00 | <5.00 | <1.00 | 0.79 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/21/03 | *1199-102103-005* | **230** | 59.5 | 3.28 | 13.2 | <1.00 | 5.63 | <1.00 | <1.00 | 1.22 | <3.00 | <1.00 | <5.00 | <1.00 | 0.52 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/11/04 | *1246-101104-521* | **225** | 69.6 | 3.53 | 5.40 | <1.00 | 3.01 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/19/05 | *1295-101905-504* | **204** | 62.3 | 3.15 | 3.14 | <1.00 | 2.76 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/27/06 | *1295-042706-025* | **163** | 63.4 | 2.25 | 1.91 | <1.00 | 1.54 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 2/20/09 | *1437-022009-113* | **59.6** | **99.9** | 2.16 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/26/11 | *1566-072611-MW08* | **27.0** | **61.4** | 1.39 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-33 | 20-30 | 9/19/01 | *1086-091901-MW33* | 2.60 | 0.760 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 2.10 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/3/02 | *1152-100302-015* | 2.63 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/24/03 | *1199-102403-018* | 2.35 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/11/04 | *1246-101104-522* | 2.35 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/11/06 | *1295-041106-003* | 1.93 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-34 | 69-78 | 10/29/03 | *1199-102903-023* | **8.02** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | 3.38 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/8/04 | *1246-100804-517* | **6.72** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/12/06 | *1295-041206-008* | **6.96** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/29/06 | *1330-082906-502* | **6.37** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/29/06 | *1330-082906-503* (dup) | **6.40** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/20/07 | *1368-082007-019* | **5.20** | 0.68 J | 0.28 J | <1.0 | <5.0 | 0.27 J | <1.0 | <1.0 | 0.10 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 |
| | | 2/23/09 | *1437-022309-114* | **5.55** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/28/11 | *1566-072811-MW16* | 4.69 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-35 | 29-38 | 10/29/03 | *1199-102903-022* | **9.20** | <1.00 | <1.00 | <1.00 | <1.00 | 1.07 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/8/04 | *1246-100804-518* | **8.59** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/8/04 | *1246-100804-519* (dup) | **8.64** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/12/06 | *1295-041206-007* | **10.2** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/29/06 | *1330-082906-504* | **9.06** | 1.03 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/20/07 | *1368-082007-020* | **7.70** | 1.1 | 0.46 J | <1.0 | <5.0 | 0.43 J | <1.0 | <1.0 | 0.16 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 |
| | | 2/23/09 | *1437-022309-115* | **7.10** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/28/11 | *1566-072811-MW17* | **5.43** | 1.11 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/8/12 | *1566-080812-MW24* | **5.40** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |

TABLE 4
HISTORY OF VOC CONCENTRATIONS IN MONITORING WELLS
(all concentrations in µg/L)

| Well Number | Well Screen Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis* -1,2-Dichloroethene (cDCE) | *trans* -1,2-Dichloroethene (tDCE) | 1,1,1-Trichloroethane (TCA) | Chloroethane | 1,1-Dichloroethane | 1,2-Dichloroethane | Tetrachloroethene | 1,1-Dichloroethene | Bromomethane | Chloromethane | Methylene Chloride (Dichloromethane) | Chloroform | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | *n* -Butylbenzene | 1,2-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADEC Table C Groundwater-Cleanup Level | | | | 5 | 70 | 100 | 200 | 290 | 7,300 | 5 | 5 | 7 | 51 | 66 | 5 | 140 | 5 | 1,000 | 700 | 10,000 | 730 | 370 | 600 |
| MW-36 | 69-79 | 10/29/03 | *1199-102903-021* | 2.45 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | 17.2 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/6/04 | *1246-100604-508* | 2.60 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/14/06 | *1295-041406-016* | 2.31 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| destroyed | | 8/30/06 | *1330-083006-506* | 2.08 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-37 | 30-40 | 10/29/03 | *1199-102903-020* | **11.0** | 1.32 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/6/04 | *1246-100604-509* | **10.8** | 1.51 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/14/06 | *1295-041406-017* | **9.97** | 1.10 | 1.04 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| destroyed | | 8/30/06 | *1330-083006-505* | **9.79** | 1.22 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-38 | 31-41 | 10/14/04 | *1246-101404-526* | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/11/06 | *1295-041106-001* | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/30/06 | *1330-083006-508* | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/17/07 | *1368-081707-010* | 1.20 | 0.91 J | 0.63 J | <1.0 | <5.0 | 0.64 J | <1.0 | 0.11 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.14 J | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | 0.32 J |
| | | 7/27/11 | *1566-072711-MW14* | 1.40 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-39 | 20-30 | 10/14/04 | *1246-101404-525* | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | 1.5 |
| | | 4/11/06 | *1295-041106-002* | 1.16 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/30/06 | *1330-083006-507* | 1.31 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/17/07 | *1368-081707-011* | 0.92 J | 0.96 J | 0.28 J | <1.0 | <5.0 | 0.58 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 0.14 J | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | 0.39 J |
| | | 7/27/11 | *1566-072711-MW15* | 1.31 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-103 | 5-10 | 10/24/97 | (sample number not known) | 4.03 | 2.09 | <1.0 | <1.0 | <1.0 | 2.75 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | **185.0** | <1.0 | 4.77 | <1.0 | <1.0 | <1.0 | <1.0 |
| | | 6/23/98 | *864-062398-MW103-002-W* | **5.00** | 2.60 | <1.0 | <1.0 | <1.0 | 2.40 | 7.00 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | **210.0** | <1.0 | 3.7 | <1.0 | <1.0 | <1.0 | <1.0 |
| | | 8/11/99 | (sample number not known) | 4.03 | 2.04 | <1.0 | <1.0 | <1.0 | 1.96 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | **40.5** | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | | 8/24/00 | *1037-082400-MW103* | 3.20 | 1.30 | <0.50 | <0.50 | <0.50 | 1.40 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | **7.4** | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/19/01 | *1086-091901-MW103* | 4.20 | 1.8 | 0.93 | <0.50 | <0.50 | 1.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 3.2 | <0.50 | 4.2 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/26/02 | *1152-092602-018* | 3.60 | 1.4 | <1.0 | <1.0 | <1.0 | 1.5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | 1.7 | <1.0 | <1.0 | <3.0 | <5.0 | <1.0 | <1.0 |
| | | 10/8/04 | *1246-100804-514* | 3.25 | 1.38 | 1.43 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | 0.800 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/28/11 | *1566-072811-MW19* | 1.32 | 1.07 | 3.07 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | 0.560 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-104 | 15-20 | 8/6/97 | (sample number not known) | **9.06** | 1.39 | <1.0 | 1.63 | <1.0 | 2.17 | 1.66 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | **82.2** | <1.0 | 11.2 | 8.35 | <1.0 | <1.0 | <1.0 |
| | | 9/25/97 | (sample number not known) | **9.44** | 1.53 | <1.0 | 1.49 | <1.0 | 2.26 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | **76.8** | <1.0 | 18.2 | 11.3 | <1.0 | <1.0 | <1.0 |
| | | 10/24/97 | (sample number not known) | **8.63** | 1.45 | <1.0 | 1.36 | <1.0 | 2.56 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | **62.3** | <1.0 | 18.2 | <1.0 | <1.0 | <1.0 | <1.0 |
| | | 10/24/97 | (dup) | **8.60** | 1.48 | <1.0 | 1.39 | <1.0 | 2.68 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | **61.5** | <1.0 | 18.2 | 9.23 | <1.0 | <1.0 | <1.0 |
| | | 6/23/98 | *864-062398-MW104-003-W* | **9.70** | 1.60 | 0.65 | 1.30 | <1.0 | <1.0 | 1.50 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | **25.0** | <1.0 | 16.0 | 9.82 | <1.0 | <1.0 | <1.0 |
| | | 8/11/99 | (sample number not known) | **7.42** | 1.22 | <1.0 | <1.0 | <1.0 | 1.61 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 3.32 | <1.0 | 4.68 | 3.93 | <1.0 | <1.0 | <1.0 |
| | | 8/24/00 | *1037-082400-MW104* | **6.60** | 1.10 | 0.84 | <0.50 | <0.50 | 1.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.56 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/19/01 | *1086-091901-MW104* | **6.40** | 1.50 | 1.20 | <0.50 | <0.50 | 1.60 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.52 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/8/04 | *1246-100804-515* | 3.63 | 1.11 | 1.39 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/28/11 | *1566-072811-MW18* | 1.32 | 1.20 | 3.41 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-105 | 25-30 | 10/24/97 | (sample number not known) | **7.69** | 1.14 | <1.0 | 1.68 | <1.0 | 1.95 | <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 | <1.0 |
| | | 6/23/98 | *864-062398-MW105-004-W* | **8.80** | 1.20 | 0.62 | 1.70 | <1.0 | 1.60 | 1.60 | <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 |
| | | 8/11/99 | (sample number not known) | **6.69** | 1.05 | <1.0 | <1.0 | <1.0 | 1.28 | <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 |
| | | 8/24/00 | *1037-082400-MW105* | **5.90** | 0.94 | 0.71 | <0.50 | <0.50 | 1.20 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/19/01 | *1086-091901-MW105* | **5.20** | 1.10 | 0.97 | 0.5 | <0.50 | 1.30 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.7 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/8/04 | *1246-100804-516* | 3.04 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/28/11 | *1566-072811-MW20* | 1.59 | <1.00 | 1.70 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |

TABLE 4
HISTORY OF VOC CONCENTRATIONS IN MONITORING WELLS
(all concentrations in µg/L)

| Well Number | Well Screen Depth (feet) | Sample Date | Sample Number | Trichloroethene (TCE) | *cis* -1,2-Dichloroethene (cDCE) | *trans* -1,2-Dichloroethene (tDCE) | 1,1,1-Trichloroethane (TCA) | Chloroethane | 1,1-Dichloroethane | 1,2-Dichloroethane | Tetrachloroethene | 1,1-Dichloroethene | Bromomethane | Chloromethane | Methylene Chloride (Dichloromethane) | Chloroform | Benzene | Toluene | Ethylbenzene | Total Xylenes | Naphthalene | *n* -Butylbenzene | 1,2-Dichlorobenzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADEC Table C Groundwater-Cleanup Level | | | | 5 | 70 | 100 | 200 | 290 | 7,300 | 5 | 5 | 7 | 51 | 66 | 5 | 140 | 5 | 1,000 | 700 | 10,000 | 730 | 370 | 600 |
| MW-106 | 20-25 | 10/23/97 | (sample number not known) | **7.55** | 1.35 | <1.0 | 1.37 | <1.0 | 2.39 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | **31.3** | <1.0 | 4.73 | 0.81 J | <1.0 | <1.0 | <1.0 |
| | | 6/24/98 | *864-062498-MW106-007-W* | **9.20** | 1.50 | 0.73 | 1.30 | <1.0 | 2.30 | 1.10 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | **16.0** | <1.0 | 6.0 | 0.73 | <1.0 | <1.0 | <1.0 |
| | | 8/11/99 | (sample number not known) | **7.23** | 1.26 | <1.0 | <1.0 | <1.0 | 1.71 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.81 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | | 9/6/00 | *1037-090600-MW106* | **7.40** | 1.40 | 1.10 | <0.50 | <0.50 | 1.80 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.76 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/21/01 | *1086-092101-MW106* | **6.40** | 1.40 | 1.30 | <0.50 | <0.50 | 1.60 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/22/03 | *1199-102203-012* | 4.36 | 1.42 | 2.09 | <1.00 | <1.00 | 1.20 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/12/06 | *1295-041206-006* | 2.22 | 1.43 | 1.96 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-107 | 30-35 | 10/23/97 | (sample number not known) | **6.28** | 1.23 | <1.0 | 1.60 | <1.0 | 2.45 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | **8.55** | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | | 6/24/98 | *864-062498-MW107-009-W* | **8.90** | 1.40 | 0.54 | 1.90 | <1.0 | 2.50 | 0.52 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | **6.5** | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | | 8/11/99 | (sample number not known) | **7.83** | 1.19 | <1.0 | <1.0 | <1.0 | 1.95 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.13 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | | 9/7/00 | *1037-090700-MW107* | **8.50** | 1.20 | 0.74 | 0.59 | <0.50 | 2.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/21/01 | *1086-092101-MW107* | **7.50** | 1.30 | 0.90 | <0.50 | <0.50 | 1.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 10/22/03 | *1199-102203-013* | **6.75** | 1.19 | 1.19 | <1.00 | <1.00 | 1.06 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 10/22/03 | *1199-102203-014* (dup) | **6.69** | 1.35 | 1.37 | <1.00 | <1.00 | 1.17 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/12/06 | *1295-041206-005* | **6.88** | 1.06 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 8/17/07 | *1368-081707-012* | **5.20** | 1.1 | 0.71 J | <1.0 | <5.0 | 0.52 J | <1.0 | <1.0 | 0.18 J | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <2.0 | <1.0 | <1.0 | <1.0 |
| | | 1/26/09 | *1437-012609-103* | 4.60 | 1.03 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/27/11 | *1566-072711-MW13* | 3.85 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| MW-108 | 40-45 | 10/23/97 | (sample number not known) | **7.64** | 1.25 | <1.0 | 2.30 | <1.0 | 2.57 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | **5.09** | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | | 6/24/98 | *864-062498-MW108-005-W* | **10.0** | 1.40 | <1.0 | 2.40 | <1.0 | 2.40 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 2.8 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| | | 8/11/99 | (sample number not known) | **9.12** | 1.17 | <1.0 | 1.22 | <1.0 | 1.96 | <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 |
| | | 8/11/99 | (dup) | **8.78** | 1.11 | <1.0 | 1.19 | <1.0 | 1.79 | <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 |
| | | 9/6/00 | *1037-090600-MW108* | **10.0** | 1.20 | <0.50 | 0.84 | <0.50 | 2.10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/6/00 | *1037-090600-MW200* (dup) | **10.0** | 1.10 | <0.50 | 0.88 | <0.50 | 2.10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/28/01 | *1086-092801-MW108* | **8.70** | 1.3 | 0.56 | 0.66 | <0.50 | 1.8 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/28/01 | *1086-092801-MW118* (dup) | **8.60** | 1.3 | 0.52 | 0.64 | <0.50 | 1.7 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/26/02 | *1152-092602-017* | **8.00** | 1.1 | <1.0 | <1.0 | <1.0 | 1.5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <5.0 | <1.0 | <0.50 | <1.0 | <1.0 | <3.0 | <5.0 | <1.0 | <1.0 |
| | | 10/14/04 | *1246-101404-527* | **6.38** | <1.00 | <1.00 | <1.00 | <1.00 | 1.03 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 4/12/06 | *1295-041206-004* | **7.00** | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 1/26/09 | *1437-012609-101* | 4.81 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 1/26/09 | *1437-012609-102* (dup) | 4.83 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/27/11 | *1566-072711-MW11* | 4.59 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| | | 7/27/11 | *1566-072711-MW12* (dup) | 4.52 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | <0.500 | <1.00 | <1.00 | <3.00 | <1.00 | <5.00 | <1.00 | <0.400 | <1.00 | <1.00 | <3.00 | <2.00 | <1.00 | <1.00 |
| USGS 505 | 15 | 8/18/99 | *979-081899-USGS505-14* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |
| | | 9/11/00 | *1037-091100-USGS505* | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | 1.7 B | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | <0.50 | <0.50 | <0.50 |

Notes: Only those analytes detected above their limit of quantitation (LOQ) are listed.
– Analyte not quantitated.
**Bold** Concentration exceeds the ADEC Table C Groundwater-Cleanup Level for that analyte.
< Analyte not reported above given LOQ.
B Analyte also reported in laboratory blank or trip blank.
J Estimated concentration. Result was below LOQ.
D Secondary dilution required for result to fall within instrument calibration range.
(dup) Field duplicate of preceding sample

TABLE 5
TCE CONCENTRATIONS AND TRENDS DETERMINED IN 2012

| Location | Well Screen Depth (feet) | 2012 TCE Concentration (µg/L) | Sample Date | Long-term Trend | Comments |
|---|---|---|---|---|---|
| MW-13 | 40-50 | 1.72 | 8/3/12 | No trend | TCE generally increased from 1995 through 2001, then decreased, but there is no overall trend. TCE concentration has decreased from 5.18 µg/L in 2006. The highest TCE concentration was 5.63 µg/L in 2004. |
| MW-26 | 20-30 | 3.20 | 8/3/12 | Decreasing | The TCE concentration has decreased from its high of 18.5 µg/L in 2002 to less than the MCL. |
| MW-35 | 29-38 | **5.40** | 8/8/12 | Decreasing | The TCE concentration was 9.2 µg/L when this well was first sampled in 2003, and reached a high concentration of 10.2 µg/L in April 2006. |
| 1410 Richardson Highway (old well) | 60 | 3.10 | 8/18/12 | Decreasing | TCE continues to decrease from its high concentration (12 µg/L) in 1999 and is now less than the MCL. |
| 1430 Richardson Highway | 60 | 2.90 | 8/3/12 | Decreasing | TCE has decreased from its high concentration (14.1 µg/L) in 1995, and is now below its low concentration (3.7 µg/L) in 2003. |
| 1357 Sloan Street | Unknown | 3.53 and 3.57 (duplicates) | 8/13/12 | Decreasing | TCE has decreased from its high concentration (10.6 µg/L) in 1995 and is now less than the MCL. |
| 1366 Sloan Street | 40 | 1.35 | 8/8/12 | Decreasing | TCE has decreased from its high concentration (10.1 µg/L) in 1995 and is now less than the MCL. |
| 1369 Sloan Street | Unknown | 3.06 | 8/8/12 | No trend | TCE was at its lowest concentration (2.7 µg/L) in 1995, and reached a high concentration (6.2 µg/L) in 2004. The 2011 TCE concentration is lower than the 2009 level (4.78/4.66 µg/L). |

Note:
**Bold** Concentration exceeds the EPA Maximum Contaminant Level (MCL)/ADEC groundwater-cleanup level.

TABLE 6
ESTIMATED TCE HALF-LIVES AND TIMES TO ACHIEVE MCL

| Location | Estimated rate constant, k ($years^{-1}$) | Rate Constant 95% Confidence Interval (lower, upper) | Estimated TCE Half-life (years) | Half-life, 95% Confidence Interval (upper, lower) | Last Measured TCE Concentration (µg/L) | Date Measured | Estimated Time from Last Measurement to Achieve MCL (5 µg/L) (years) |
|---|---|---|---|---|---|---|---|
| MW-13 | does not converge | | | | 1.72 | 8/3/12 | 0 |
| MW-26 | 0.152 | (0.119, 0.184) | 4.6 | (5.8, 3.8) | 3.20 | 8/3/12 | 0 |
| MW-35 | 0.050 | (0.027, 0.073) | 13.9 | (26, 9.5) | **5.40** | 8/8/12 | 1.5 |
| 1410 Richardson Highway | 0.109 | (0.089, 0.129) | 6.4 | (7.8, 5.4) | 3.10 | 8/18/12 | 0 |
| 1430 Richardson Highway | 0.145 | (0.115, 0.175) | 4.8 | (6.0, 4.0) | 2.90 | 8/3/12 | 0 |
| 1357 Sloan Street | 0.068 | (0.059, 0.077) | 10.2 | (11.7, 9.0) | 3.53 and 3.57 | 8/13/12 | 0 |
| 1366 Sloan Street | 0.108 | (0.087, 0.128) | 6.4 | (12.6, 8.0) | 1.35 | 8/8/12 | 0 |
| 1369 Sloan Street | does not converge | | | | 3.06 | 8/8/12 | 0 |

Note:
**Bold** Value exceeds the EPA Maximum Contaminant Level (MCL)/ADEC Groundwater-Cleanup Level.

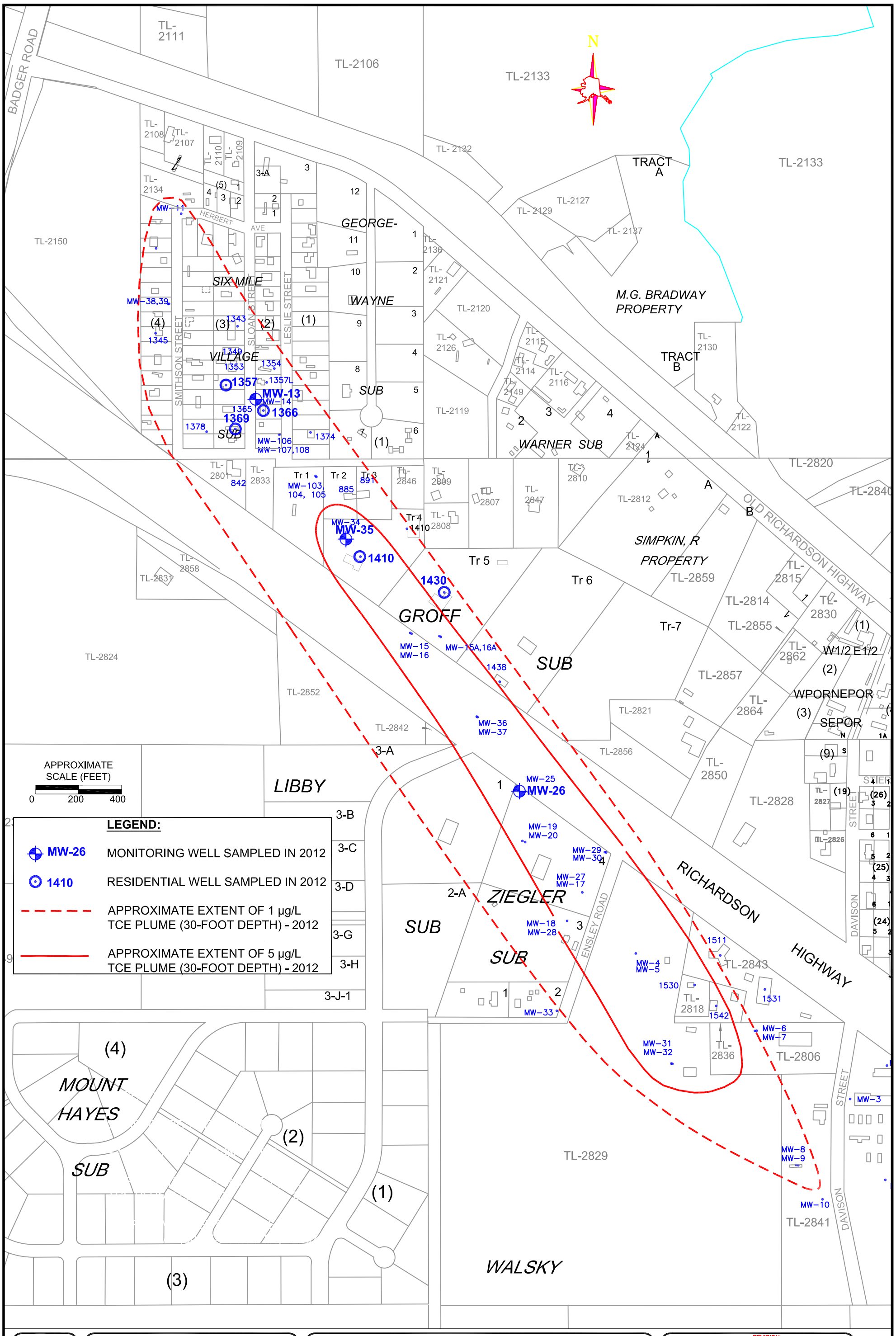



FIGURE 1

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

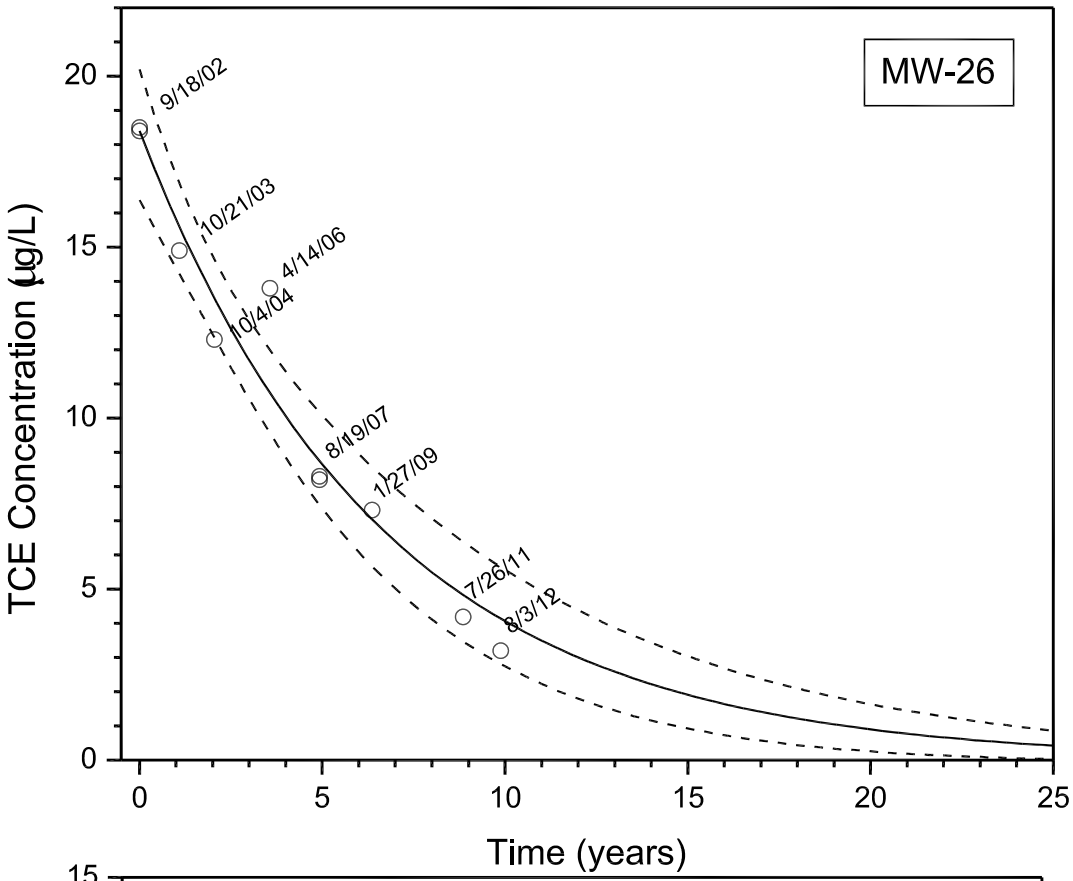
| | | | |
|---|---|---|---|
| DATE: | December 2012 | PROJECT: | 31-1-11566-006 |
| DRAWN: | JAK | FILE: | 1566 Mon Rpt Figure.dwg |
| CHECKED: | JEL | SCALE: | 1 in = 400 ft |

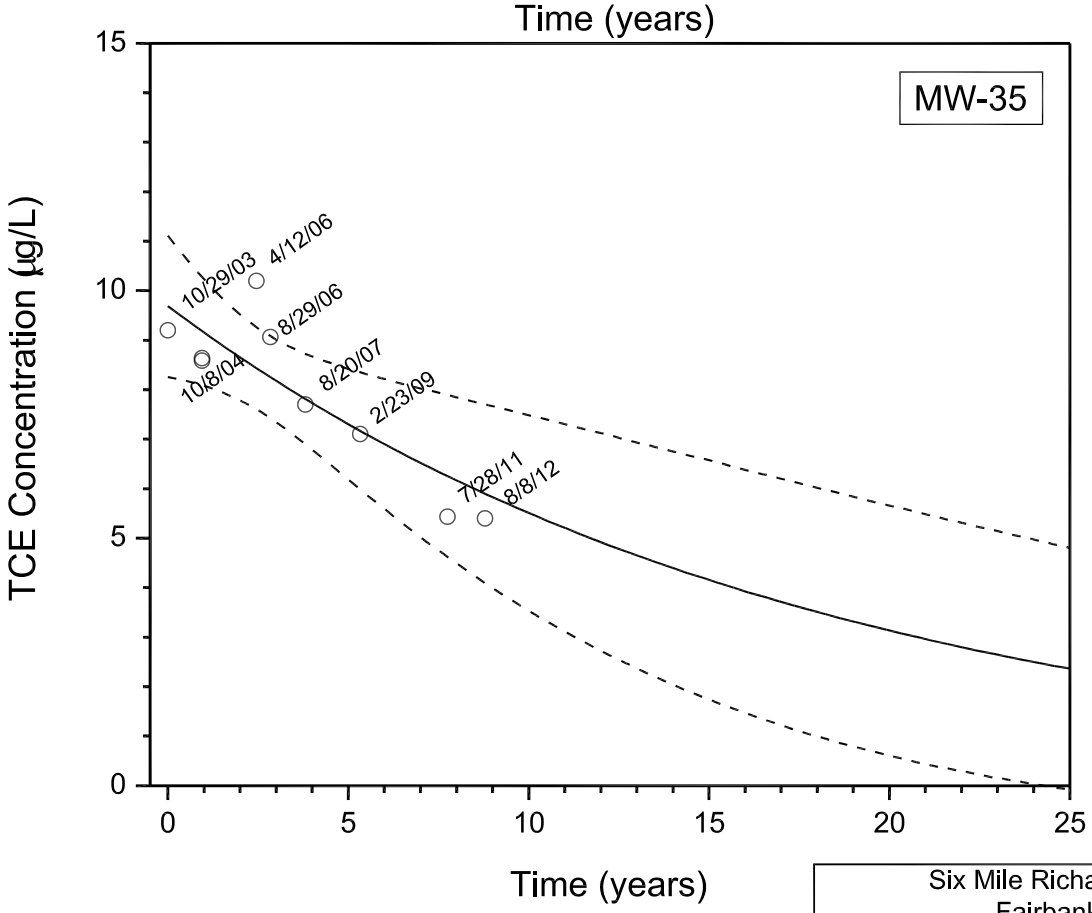
TITLE: MONITORING AND RESIDENTIAL WELLS SAMPLED AND APPROXIMATE EXTENT OF 2012 TCE PLUME AT 30-FOOT DEPTH

LOCATION: SIX MILE RICHARDSON HIGHWAY FAIRBANKS, ALASKA

REVISION

| NO.: | DATE: | | BY: |
|---|---|---|---|
| | | | |



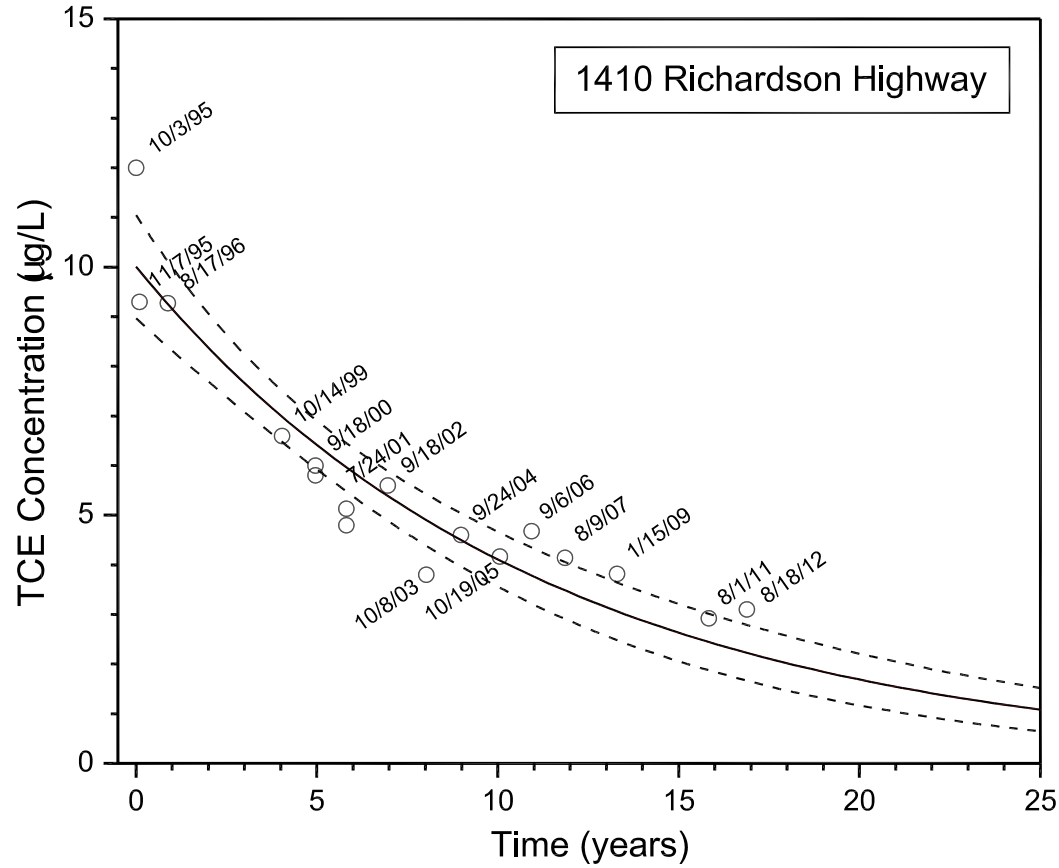

Six Mile Richardson Highway
Fairbanks, Alaska

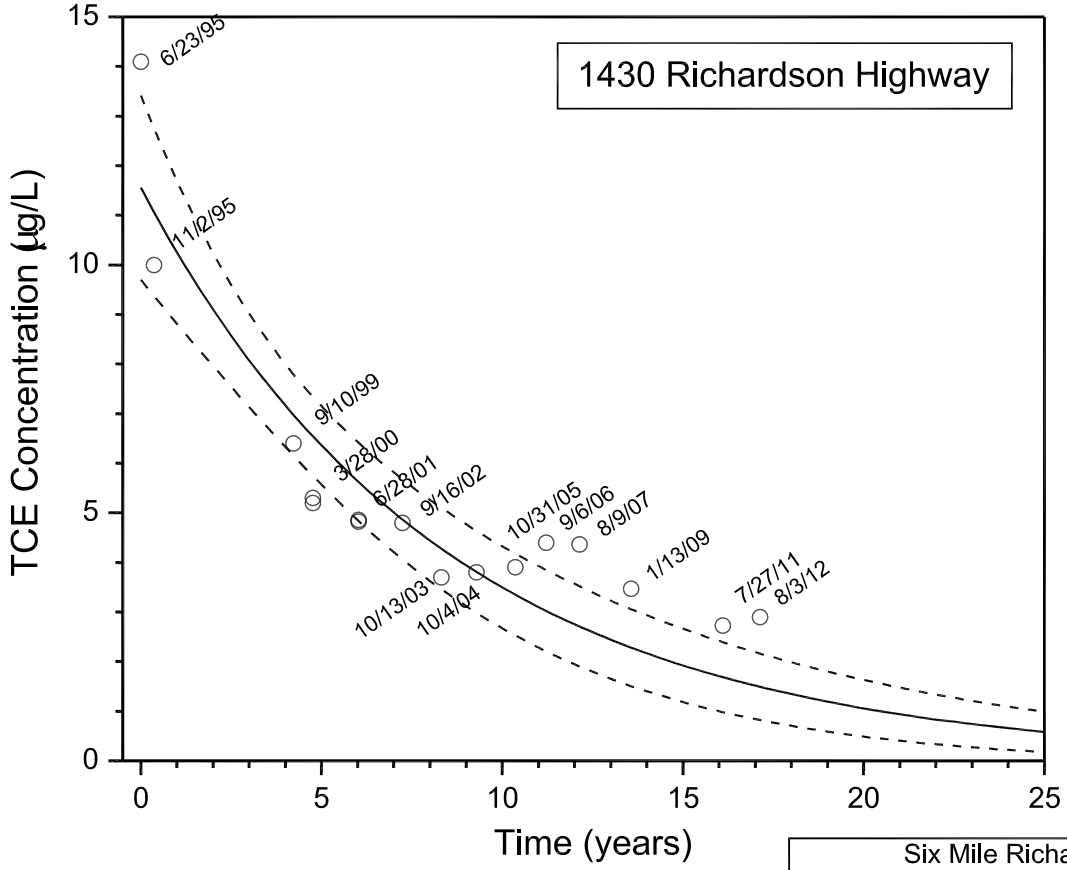
TCE CONCENTRATIONS VERSUS TIME AND NONLINEAR REGRESSION RESULTS, MW-26 AND MW-35

December 2012 31-1-11566-006

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

**FIG. 2**



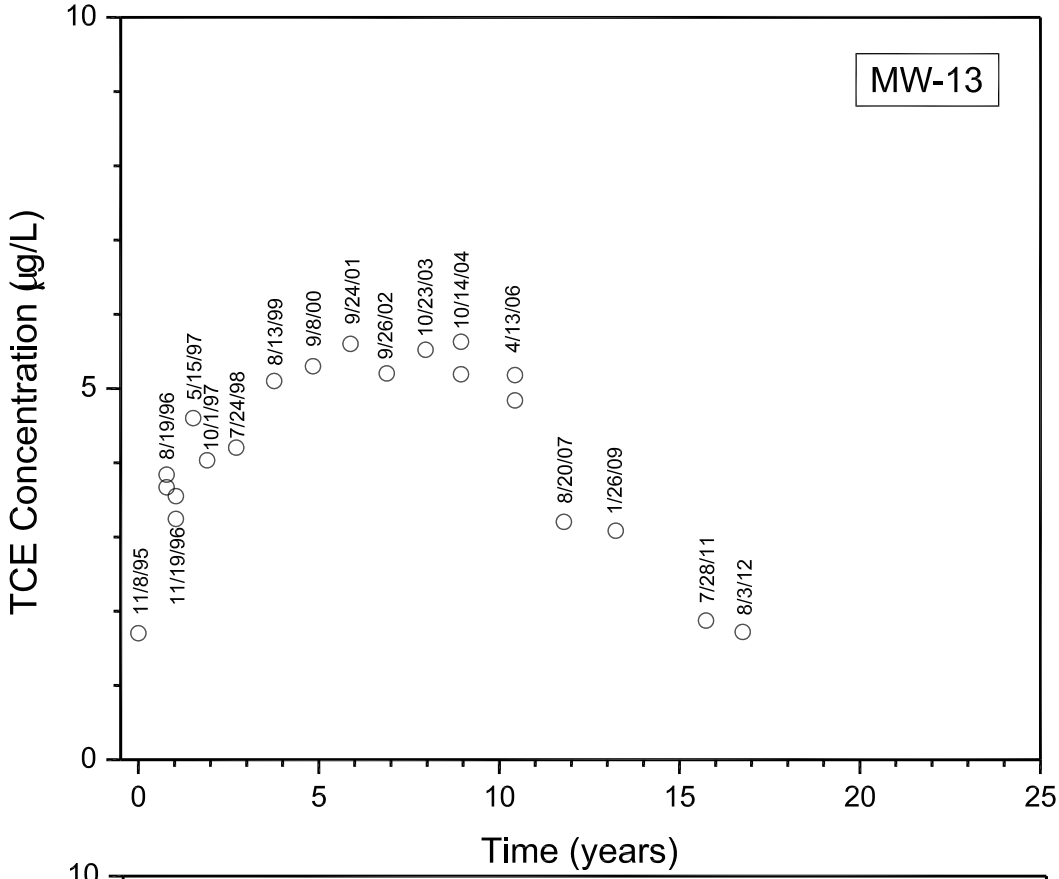

Six Mile Richardson Highway
Fairbanks, Alaska

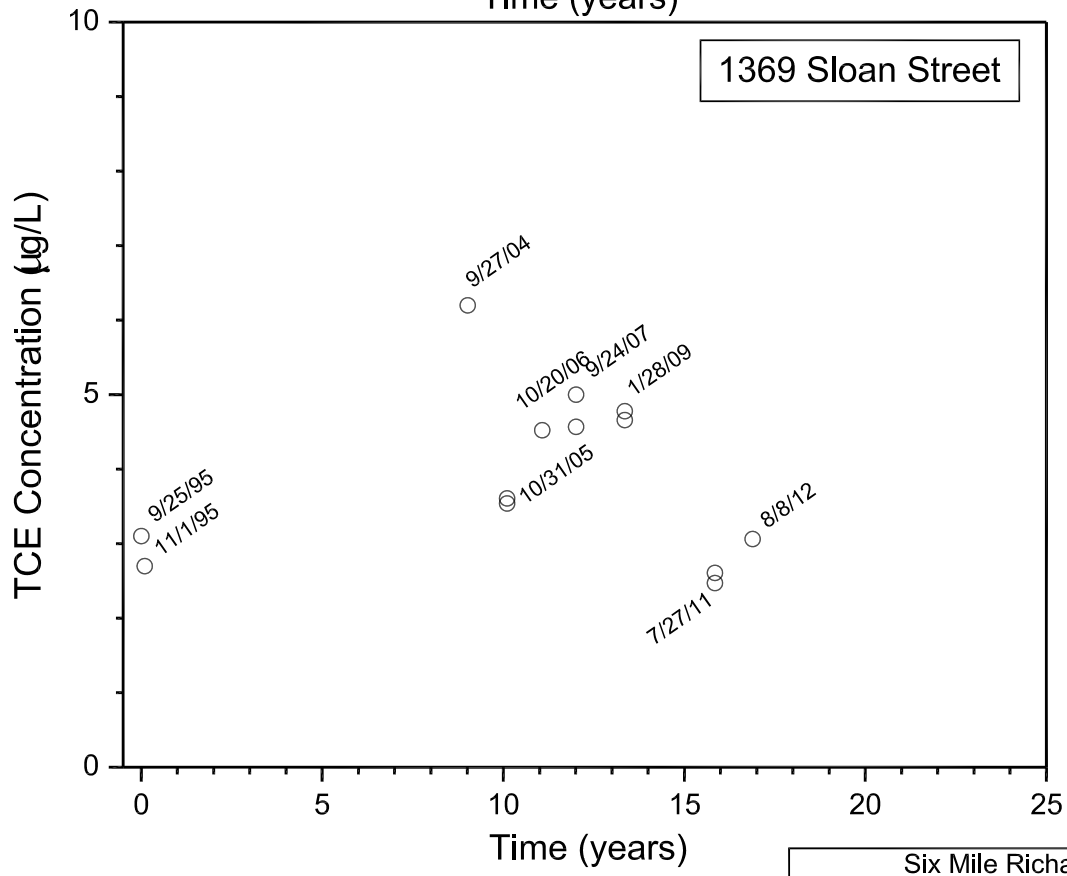
TCE CONCENTRATIONS VERSUS TIME AND NONLINEAR REGRESSION RESULTS, 1410 AND 1430 RICHARDSON HIGHWAY

December 2012 31-1-11566-006

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIG. 3



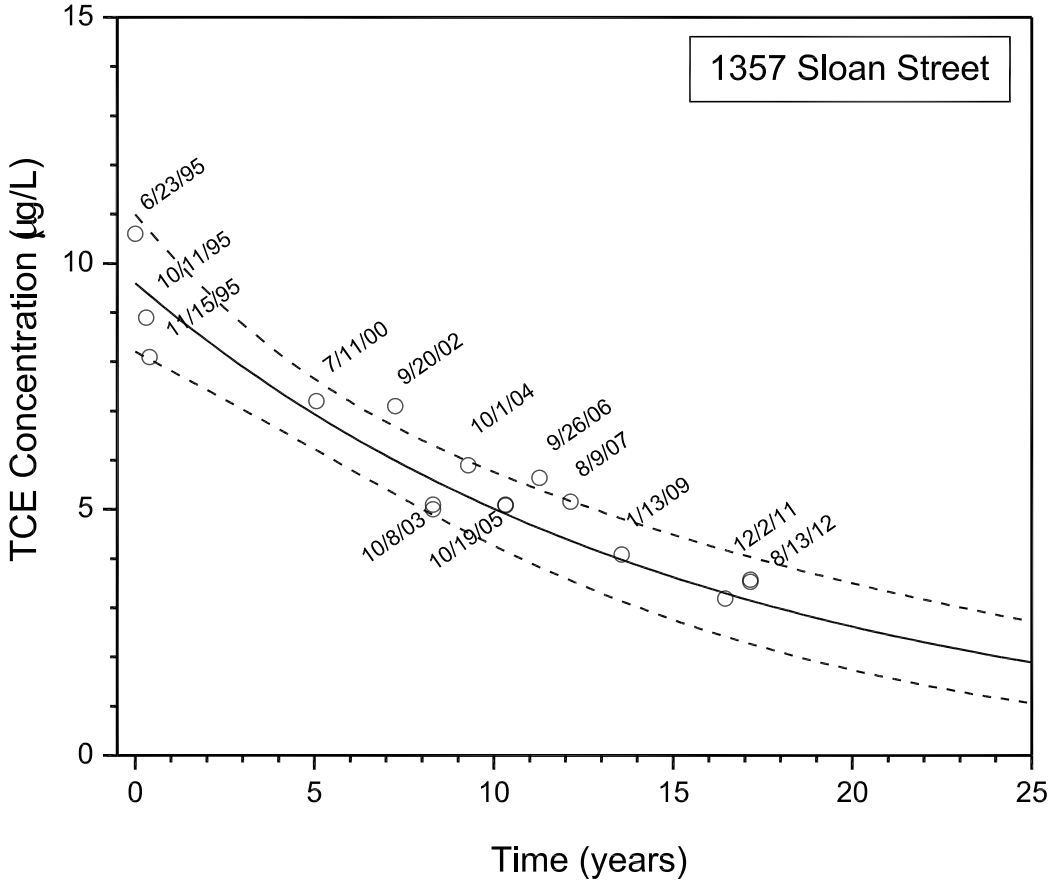

Six Mile Richardson Highway
Fairbanks, Alaska

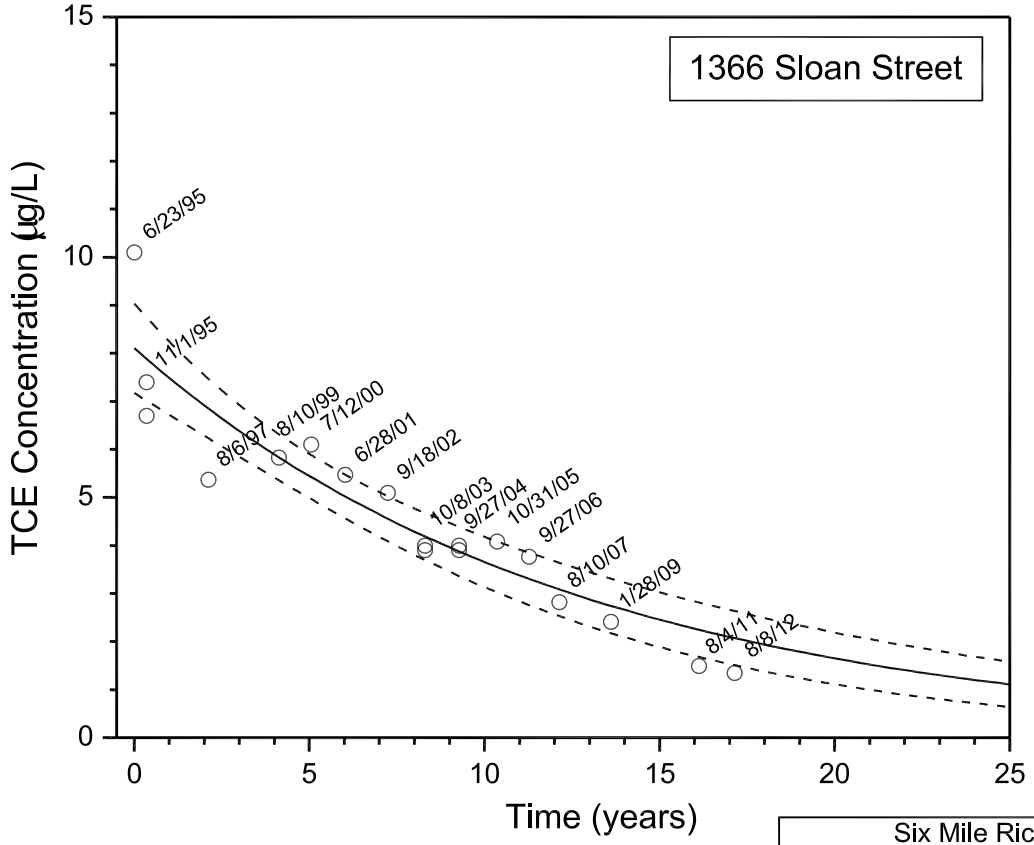
TCE CONCENTRATIONS VERSUS TIME,
MW-13 AND 1369 SLOAN STREET

December 2012 31-1-11566-006

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

**FIG. 4**




Six Mile Richardson Highway
Fairbanks, Alaska

TCE CONCENTRATIONS VERSUS TIME AND NONLINEAR REGRESSION RESULTS, 1357 AND 1366 SLOAN STREET

December 2012 31-1-11566-006

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIG. 5

# APPENDIX A

# COPY OF FIELD NOTES

1128367

**SHANNON & WILSON, INC.**
Geotechnical and Environmental Consultants

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

2355 Hill Road
Fairbanks, AK 99709
(907) 479-0600

2255 S.W. Canyon Road
Portland, OR 97201-2498
(503) 223-6147

2043 Westport Center Drive
St. Louis, MO 63146-3564
(314) 699-9660

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

1200 17th Street, Suite 1024
Denver, Co 80202
(303) 825-3800

303 Wellsian Way
Richland, WA 99352
(509) 946-6309

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Laboratory SGS
Attn:

**Analysis Parameters/Sample Container Description**
(include preservative if used)

| Sample Identity | Lab No. | Time | Date Sampled | Comp. | Grab | VOC (EPA 524.2) | | | | | | Total Number of Containers | Remarks/Matrix |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1566-081312-RW20 | | 12:18 | 8-13-12 | | X | 3 | | | | | | 3 | DW |
| 1566-081312-RW21 | | 12:00 | 8-13-12 | | X | 3 | | | | | | 3 | DW |
| Trip Blank | | | | | | X | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| Project Information | | Sample Receipt | |
|---|---|---|---|
| Project Number: 1566-002 | | Total Number of Containers | 6 |
| Project Name: 6 Mile Rds. | | COC Seals/Intact? Y/N/NA | |
| Contact: JAK | | Received Good Cond./Cold | |
| Ongoing Project? Yes ☑ No ☐ | | Delivery Method: Hand | |
| Sampler: HRZ | | (attach shipping bill, if any) | |

**Instructions**

Requested Turnaround Time: Standard

Special Instructions:
Bill to Shannon & Wilson

| Relinquished By: 1. | Relinquished By: 2. | Relinquished By: 3. |
|---|---|---|
| Signature: Time: 13:15 | Signature: Time: | Signature: Time: |
| Printed Name: Heather Zuecky Date: 8-13-12 | Printed Name: Date: | Printed Name: Date: |
| Company: SWI | Company: | Company: |

| Received By: 1. | Received By: 2. | Received By: 3. |
|---|---|---|
| Signature: Time: 1315 | Signature: Time: | Signature: Time: |
| Printed Name: Kendra Frey Date: 8/13/12 | Printed Name: Date: | Printed Name: Date: |
| Company: SGS | Company: | Company: |

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

TB=1.0°C
ID71

No. 31289

## RESIDENTIAL WELL SAMPLING LOG

Address 1357 Sloan
Owner/Occupant Audrey (occupant)
Mailing address 1357 Sloan
Telephone (home) 488-2597

Project Number 31-1-11566-002
Project Name 6-Mile Residential
Date 8-13-12
Time 12:00 – 12:40
Sampling Personnel HRZ

Sample Location Occupant let me know that the place to sample from is only able to be turned on from inside the house and there is a hose running outside I could use. She wouldn't let me in the house so I had to take parameters and sample directly from the garden hose the occupant provided.

Sample Number 1566-081312-RW20 Time 12:18
Duplicate 1566-081312-RW21 Time 12:00

Analysis VOC (EPA 524.2) Lab SGS

Purge Time 12:07 – 12:20 Well Depth unknown

**PARAMETERS** [stabilization criteria]

| Time | Temp. (°C) [± 0.5] | Conductivity (µS/cm) [± 3%] | pH (std. units) [± 0.1] | Water Clarity (visual) |
|---|---|---|---|---|
| 12:08 | 3.4 | 229.6 | 7.25 | Clear |
| 12:11 | 3.4 | 233.6 | 7.05 | ↓ |
| 12:14 | 3.4 | 233.9 | 7.07 | ↓ |
| 12:17 | 3.4 | 233.9 | 7.15 | ↓ |
| 12:18 | Sample | | | |
| 12:00 | Duplicate | | | |
| | | | | |
| | | | | |

Notes: ~~8/13~~ Originally sampled from spigot on right side of house (last week) and was informed by last year's sampler (KRF) that the spigot I used was going through filter system. Those samples were canceled and these samples were turned in instead.

1128347

**SHANNON & WILSON, INC.**
Geotechnical and Environmental Consultants

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Seattle, WA 98103
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Denver, Co 80202
(303) 825-3800

303 Wellsian Way
Richland, WA 99352
(509) 946-6309

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Laboratory: STS
Attn:

**Analysis Parameters/Sample Container Description**
(include preservative if used)

| Sample Identity | Lab No. | Time | Date Sampled | Comp. | Grab | VOC (EPA 524.2) | VOC (EPA SW8260B) | | | | | Total Number of Containers | Remarks/Matrix |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1566-080812-RW19 | | ~~13:39~~ 15:39 | 8-8-12 | | X | 3 | | | | | | 3 | DW |
| 1566-080812-RW18 | | 13:38 | 8-8-12 | | X | 3 | | | | | | 3 | DW |
| 1566-080812-MW24 | | 12:29 | 8-8-12 | | X | ~~3~~ 3 | 3 | | | | | 3 | GW |
| 1566-080812-RW17 | | 11:22 | 8-8-12 | | X | 3 | | | | | | 3 | DW |
| 1566-080912-RW20 | | 12:20 | 8-9-12 | | X | 3 | | | | | | 3 | DW |
| 1566-080912-RW21 | | 12:00 | 8-9-12 | | X | 3 | | | | | | 3 | DW |
| TRIPBLANK 1 | | | | | | ✓ | | | | | | 1 | |
| TRIP BLANK 2 | | | | | | | ✓ | | | | | 1 | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| Project Information | Sample Receipt | |
|---|---|---|
| Project Number: 1566 | Total Number of Containers | 18 |
| Project Name: 6-Mile | COC Seals/Intact? Y/N/NA | |
| Contact: JAK | Received Good Cond./Cold | |
| Ongoing Project? Yes ☑ No ☐ | Delivery Method: Hand | |
| Sampler: HRZ | (attach shipping bill, if any) | |

| Relinquished By: 1. | Relinquished By: 2. | Relinquished By: 3. |
|---|---|---|
| Signature: Time: 12:50 | Signature: Time: | Signature: Time: |
| Printed Name: Heather Zrucky Date: 8-9-12 | Printed Name: Date: | Printed Name: Date: |
| Company: SWI | Company: | Company: |

| Received By: 1. | Received By: 2. | Received By: 3. |
|---|---|---|
| Signature: Time: 1250 | Signature: Time: | Signature: Time: |
| Printed Name: Date: 8-9-12 | Printed Name: Date: | Printed Name: Date: |
| Company: | Company: | Company: |

| Instructions | |
|---|---|
| Requested Turnaround Time: | Standard |
| Special Instructions: | Bill to Shannon & Wilson |

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

No. 31290

TB = 3.5°C ID 204

# RESIDENTIAL WELL SAMPLING LOG

Address 1357 Shan
Owner/Occupant Audrey
Mailing address
Telephone

Project Number 31-1-11566-002
Project Name 6-Mile Residential
Date 8-9-12
Time 11:55
Sampling Personnel HRZ

Sample Location Spigot on right side of house (looking at house from street) - occupant reluctant to let us in house. Purged water through spigot, then took sample.

Sample Number 15666-080912-RW20
Duplicate 15666-080912-RW21

Time ~~12:18~~ 12:20
Time 12:00

Analysis VOC (EPA 524.2)

Lab SGS

Purge Time 12:05-

Well Depth

**PARAMETERS** [stabilization criteria]

| Time | Temp. (°C) [± 0.5] | Conductivity (µS/cm) [± 3%] | pH (std. units) [± 0.1] | Water Clarity (visual) |
|---|---|---|---|---|
| 12:08 | 7.3 | 223.3 | 6.93 | Clear |
| ~~12:0~~ 12:11 | 7.3 | 224.2 | 6.98 | " |
| 12:14 | 6.0 | 214.1 | 7.02 | " |
| 12:17 | 4.7 | 205.9 | 7.04 | " |
| ~~12:18~~ | ~~Sample~~ | | | |
| 12:19 | 4.7 | 205.7 | 7.04 | |
| 12:20 | Sample | | | |
| | | | | |

Notes:

# FIELD ACTIVITIES DAILY LOG

Date 8-8-12
Sheet 1 of
Project No. 1566

Project Name: Le-mile 1566
Field activity subject: Le-mile MW & RW sampling.
Description of daily activities and events:

9:00 Began loading equipment
10:00 Left SWL to pick up sample bottles from SGS
10:30 Arrived at 1369 Sloan, got equipment organized and ready. Notified owner we had arrived early.
11:00 Entered residence, Mark (occupant) was taking filter off and instructed us to take parameters from garden hose outside.
11:15 Began taking samples from inside house, through filter casing after filter was removed. Mark was very willing to help.

11:30 Finished at 1369 Sloan. Called Paul (owner) at 1410 Richardson Highway to let him know we finished previous sample early. He told us he was home and to come by to sample.

11:45 Arrived at 1410 Richardson Hwy. Knocked on door and young boy told us Paul (owner) wasn't around that he knew of. Called Paul's cell, no answer. Began sampling MW-35 (behind residence).

11:50 Began sampling at MW-35 (behind residence at 1410 Richardson Hwy) Finished at 12:45 and called owner Paul again with no answer.

1:00 Still waiting ~~for~~ to get a hold of Paul. Called cell, home & work with no answer.

~~Visitors on site:~~

Changes from plans/specifications and other special orders and important decisions:
Finished 1369 Sloan early and arrived at 1410 Richardson 1 hour early as OKed by owner. →

Weather conditions: Overcast 100°

Important telephone calls:

Personnel on site: HRZ / SKR
Signature: [signature] Date: 8-8-12

# RESIDENTIAL WELL SAMPLING LOG

Address: 13666 Sloan
Owner/Occupant: Mitch Gentleman
Mailing address: 13666 Sloan
Telephone: (cell) 388-0120

Project Number: 31-1-11566-002
Project Name: 6-Mile Residential
Date: 8-8-12
Time: 15:15 - 15:45
Sampling Personnel: HRZ

Sample Location: Outside spigot - from front of deck. Purging water to ground, ran flow-through in bucket. Purged through garden hose, took sample directly from spigot.

Sample Number: 15666-080812-RW19
Duplicate: —

Time: ~~13:39~~ 15:39
Time: —

Analysis: VOC (EPA 524.2)

Lab: SGS

Purge Time: 15:29 - 13:40

Well Depth: ~40

**PARAMETERS** [stabilization criteria]

| Time | Temp. (°C) [± 0.5] | Conductivity (µS/cm) [± 3%] | pH (std. units) [± 0.1] | Water Clarity (visual) |
|---|---|---|---|---|
| 15:29 | 3.4 | 224.1 | 7.05 | Clear |
| 15:32 | 3.5 | 226.5 | 6.97 | " |
| 15:35 | 3.6 | 227.3 | 6.97 | " |
| 15:38 | 3.6 | 227.8 | 6.99 | " |
| 15:39 | Sample | | | |
| | | | | |
| | | | | |
| | | | | |

Notes: Mitch not home but OK'ed over phone that we could go ahead and start sampling

# RESIDENTIAL WELL SAMPLING LOG

Address 1410 Richardson Hwy
Owner/Occupant Paul Koop
Mailing address 1410 Richardson Hwy
Telephone (cell): 388-6019 (office): 488-1233

Project Number 31-1-11566-002
Project Name 6-Mile Residential
Date 8-8-12
Time 12:45-
Sampling Personnel HRZ

Sample Location Purging water from outside spigot until parameters stabilized. ~~Spigot~~ Sample taken from green spigot inside garage. Let water run for 1/2 minutes before taking sample.

Sample Number 1566-080812-~~AA~~ RW 1B
Duplicate —

Time 13:38
Time —

Analysis VOC (EPA 524.2)

Lab SGS

Purge Time 13:22 – 13:37

Well Depth 60 ft

**PARAMETERS** [stabilization criteria]

| Time | Temp. (°C) [± 0.5] | Conductivity (µS/cm) [± 3%] | pH (std. units) [± 0.1] | Water Clarity (visual) |
|---|---|---|---|---|
| 1324 | 4.1 | 221.9 | 6.97 | Clear |
| 1327 | 4.4 | 224.1 | 6.96 | " |
| 1330 | 4.5 | 225.0 | 6.97 | " |
| 1333 | 4.6 | 225.2 | 7.00 | " |
| 1337 | 4.7 | 225.8 | 7.11 | " |
| 1338 | Sample | | | |
| | | | | |
| | | | | |

Notes: Both outside spigots purged, only parameters from garden spigots (near garden) taken

# MONITORING WELL SAMPLING LOG

Owner/Client: ADEC
Location: Six Mile Richardson Highway
Sampling Personnel: HRZ
Weather Conditions: Overcast  Air Temp. (°F): 60°

Project No.: 31-1-11566-003
Date: 8-8-12
Well: MW-35
Time started: 11:50
Time completed: 12:45

Sample No.: 1566-080812-MW24  Time: 12:29
Duplicate: —  Time: —  Depth to Water (ft.): 4.42

Purging Method: ~~[illegible]~~ pump
Pumping Start: 12:11
Purge Rate (gal./min.): ~~[illegible]~~ ~1
Pumping End: 12:32

Pump Set Depth Below MP (ft.): ~35
Tubing (ft.): 115 + 10

Diameter and Type of Casing: 2" PVC
Approximate Total Depth of Well Below MP (ft.): ~38
Measured Total Depth of Well Below MP (ft.): 38.64
Depth to Water Below MP (ft.): 4.42
Depth to Ice (if frozen) Below MP (ft.): —
Feet of Water in Well: 34.22
Gallons per foot: 0.17
Gallons in Well: 5.82
Purge Water Volume (gal.): ~21
Purge Water Disposal: treatment

Monument Condition: Good, but well MW-34 (next to this one) has crumbled concrete and monument cap is broken off.
Casing Condition: Good

Measuring Point (MP): Top of Casing (TOC)  Monument type: Stickup / Flushmount

Top-of-casing to monument (ft.): ~0.5
Monument to ground surface (ft.): —

- [x] Lock present and operational?
- [ ] Well name legible on outside of well? — written on inside of well
- [ ] Evidence of frost-jacking? no

Notes: MW-34 (the well right next to this one) was severely broken.

**WELL CASING VOLUMES**

| Diameter of Well [ID-inches] | 1¼ | 2 | 3 | 4 | 6 | 8 |
|---|---|---|---|---|---|---|
| Gallons per lineal foot | 0.08 | 0.17 | 0.38 | 0.66 | 1.5 | 2.6 |



Well No.

## RESIDENTIAL WELL SAMPLING LOG

Address 1369 Sloan
Owner/Occupant Mark
Mailing address
Telephone 489-4328

Project Number 31-1-11566-002
Project Name 6-Mile Residential
Date 8-8-12
Time 11:00 – 11:30
Sampling Personnel HRZ

Sample Location Purged & took parameters from outside garden hose. Sample taken from filter casing after filter was removed in utility room.

Sample Number 1566-080812-RW17
Duplicate —

Time 11:22
Time —

Analysis VOC (EPA 524.2)

Lab SGS

Purge Time 11:07 – 11:22

Well Depth Unknown

**PARAMETERS** [stabilization criteria]

| Time | Temp. (°C) [± 0.5] | Conductivity (µS/cm) [± 3%] | pH (std. units) [± 0.1] | Water Clarity (visual) |
|---|---|---|---|---|
| 11:09 | 7.6 | 232.2 | 6.86 | Clear |
| 11:12 | 4.0 | 214.4 | 6.90 | " |
| 11:15 | 4.0 | 214.3 | 6.91 | " |
| 11:18 | 4.0 | 214.2 | 6.92 | " |
| 11:21 | 4.0 | 213.9 | 6.94 | " |
| 11:22 | Sample | | | |
| | | | | |
| | | | | |

Notes: Initial water had sediment, but cleared after one minute. Pump ran majority of time.

purging start at 11:07 – 11:22. Purged to ground.

1128320

**SHANNON & WILSON, INC.**
Geotechnical and Environmental Consultants

# CHAIN OF CUSTODY RECORD

Page 1 of 1

Laboratory: SGS
Attn:

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

2043 Westport Center Drive
St. Louis, MO 63146-3564
(314) 699-9660

303 Wellsian Way
Richland, WA 99352
(509) 946-6309

2355 Hill Road
Fairbanks, AK 99709
(907) 479-0600

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

2255 S.W. Canyon Road
Portland, OR 97201-2498
(503) 223-6147

1200 17th Street, Suite 1024
Denver, Co 80202
(303) 825-3800

**Analysis Parameters/Sample Container Description**
(include preservative if used)

| Sample Identity | Lab No. | Time | Date Sampled | Comp. | Grab | VOC (EPA SW8260B) | VOC (EPA 524.2) | | | | | Total Number of Containers | Remarks/Matrix |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1566-080312-MW22 | | 12:13 | 8-3-12 | | X | X | | | | | | 3 | GW |
| 1566-080312-RW16 | | 15:41 | 8-3-12 | | X | | X | | | | | 3 | DW |
| 1566-080312-MW23 | | 14:47 | 8-3-12 | | X | X | | | | | | 3 | GW |
| TRIP BLANK | | | | | | | | | | | | 1 | |

| Project Information | | Sample Receipt | |
|---|---|---|---|
| Project Number: | 1566-003 | Total Number of Containers | 10 |
| Project Name: | 6-Mile | COC Seals/Intact? Y/N/NA | |
| Contact: | JAK | Received Good Cond./Cold | |
| Ongoing Project? | Yes ☑ No ☐ | Delivery Method: | Hand |
| Sampler: | HRZ | (attach shipping bill, if any) | |

**Instructions**

Requested Turnaround Time: Standard

Special Instructions:
Bill to SWI

| Relinquished By: 1. | Relinquished By: 2. | Relinquished By: 3. |
|---|---|---|
| Signature: Time: 16:55 | Signature: Time: 10:15 | Signature: Time: |
| Printed Name: Heather Zrucky Date: 8-3-12 | Printed Name: Mike Storey Date: 8/6/12 | Printed Name: Date: |
| Company: SWI | Company: SWI | Company: |

| Received By: 1. | Received By: 2. | Received By: 3. |
|---|---|---|
| Signature: Time: 10:15 | Signature: Time: 10:15 | Signature: Time: |
| Printed Name: Mike Storey Date: 8/6/12 | Printed Name: Jim Davis Date: 8/6/12 | Printed Name: Date: |
| Company: SWI | Company: | Company: |

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

TB = 6.0° C ID 100

No. 31291

# MONITORING WELL SAMPLING LOG

Owner/Client *ADEC*
Location *Six Mile Richardson Highway*
Sampling Personnel HRZ
Weather Conditions Overcast Air Temp. (°F) 60°

Project No. *31-1-11566-003*
Date 8-3-12
Well MW-13
Time started 14:15
Time completed 15:00

Sample No. 1566-080312-MW23 Time 14:47
Duplicate — Time —
Depth to Water (ft.) 6.90

Purging Method Monsoon
Pumping Start 14:32
Purge Rate (gal./min.) ~1
Pumping End 14:49

Pump Set Depth Below MP (ft.) 47
Tubing (ft.) 55

Diameter and Type of Casing 2" PVC
Approximate Total Depth of Well Below MP (ft.) ~50
Measured Total Depth of Well Below MP (ft.) 49.92
Depth to Water Below MP (ft.) 6.90
Depth to Ice (if frozen) Below MP (ft.) —
Feet of Water in Well 43.02
Gallons per foot 0.17
Gallons in Well 7.31
Purge Water Volume (gal.) ~17
Purge Water Disposal treatment

Monument Condition Good, one bolt hole is broken

Casing Condition Off center

Measuring Point (MP) *Top of Casing (TOC)* Monument type: *Stickup* / *Flushmount*

Top-of-casing to monument (ft.) ~0.5
Monument to ground surface (ft.) —

☑ Lock present and operational? rusty
☐ Well name legible on outside of well? -no, need metal detector to find.
☐ Evidence of frost-jacking? no

Notes Purged through treatment.

**WELL CASING VOLUMES**

| Diameter of Well [ID-inches] | 1¼ | 2 | 3 | 4 | 6 | 8 |
|---|---|---|---|---|---|---|
| Gallons per lineal foot | 0.08 | 0.17 | 0.38 | 0.66 | 1.5 | 2.6 |



Well No. MW-13

## RESIDENTIAL WELL SAMPLING LOG

Address: 1430 Richardson Hwy
Owner/Occupant: Lee Greime (Lee present)
Mailing address:
Telephone: (home) 488-1956

Project Number: 31-1-11566-002
Project Name: 6-Mile Residential
Date: 8-3-12
Time: 15:30 – 15:50
Sampling Personnel: HRZ

Sample Location: spigot on west side of front door. Used garden hose to purge until parameters stabilized. Took sample from spigot directly.

Sample Number: 1566-080312-RW16
Time: 15:41
Duplicate:
Time:

Analysis: VOC (EPA 524.2)
Lab: SGS

Purge Time: 15:30 - 15:44
Well Depth: ~60'

**PARAMETERS** [stabilization criteria]

| Time | Temp. (°C) [± 0.5] | Conductivity (µS/cm) [± 3%] | pH (std. units) [± 0.1] | Water Clarity (visual) |
|---|---|---|---|---|
| 15:31 | 3.6 | 213.0 | 7.38 | Clear |
| 15:34 | 3.5 | 212.8 | 7.24 | " |
| 15:37 | 3.7 | 213.7 | 7.41 | " |
| 15:40 | 4.5 | 219.3 | 7.42 | " |
| 15:41 | Sample | | | |
| | | | | |
| | | | | |
| | | | | |

Notes: Lee was present during sampling.

Water started at 15:30 and ended at ~~14:39~~ 15:44.

1430 Richardson

# MONITORING WELL SAMPLING LOG

Owner/Client: ADEC
Location: Six Mile Richardson Highway
Sampling Personnel: HRZ / SRR
Weather Conditions: Overcast  Air Temp. (°F): 60°

Project No.: 31-1-11566-003
Date: 8/3/12
Well: MW-26
Time started: 11:45
Time completed: 12:30

Sample No.: 1566-080312-MW22  Time: 12:13
Duplicate: —  Time: —  Depth to Water (ft.): 9.70

Purging Method: Monsoon
Pumping Start: 11:59
Purge Rate (gal./min.): ~1
Pumping End: 12:14

Pump Set Depth Below MP (ft.): ~31
Tubing (ft.): 35 + 40'

Diameter and Type of Casing: 2" PVC
Approximate Total Depth of Well Below MP (ft.): ~32
Measured Total Depth of Well Below MP (ft.): 32.51 ±
Depth to Water Below MP (ft.): 9.70
Depth to Ice (if frozen) Below MP (ft.): —
Feet of Water in Well: 22.81
Gallons per foot: 0.17
Gallons in Well: 3.87
Purge Water Volume (gal.): ~15
Purge Water Disposal: Treatment

Monument Condition: Good

Casing Condition: Good

Measuring Point (MP): Top of Casing (TOC)  Monument type: Stickup / Flushmount

Top-of-casing to monument (ft.): 0.37
Monument to ground surface (ft.): ~~2.43~~ 3.20

- [x] Lock present and operational? rusty lock
- [x] Well name legible on outside of well?
- [ ] Evidence of frost-jacking? no

Notes: Sampled well as planned, but accessed from road instead of through front property gate. Purged through treatment.

**WELL CASING VOLUMES**

| Diameter of Well [ID-inches] | 1¼ | 2 | 3 | 4 | 6 | 8 |
|---|---|---|---|---|---|---|
| Gallons per lineal foot | 0.08 | 0.17 | 0.38 | 0.66 | 1.5 | 2.6 |



Well No. MW-26

# MONITORING WELL SAMPLING LOG

Field Parameter Instrument *YSI Pro Plus* Circle one: Parameters stabilized or >3 well volumes purged

Sample Observations

Notes

**FIELD PARAMETERS** [stabilization criteria]

| Time | Temp. (°C) | Conductivity (µS/cm) [± 3%] | Dissolved Oxygen (mg/L) [± 10%] | pH [± 0.1] | ORP (mV) [± 10mV] | Water Clarity (visual) |
|---|---|---|---|---|---|---|
| 12:02 | 3.2 | 233.8 | | 6.78 | | Sl. Turbid |
| 12:05 | 3.2 | 233.6 | | 6.81 | | clear |
| 12:09 | 3.2 | 233.7 | | 6.84 | | " |
| 12:12 | 3.2 | 233.8 | | 6.87 | | |
| 12:13 | Sample | | | | | |

Laboratory *SGS*

| | Analysis | Sample Containers | Preservatives |
|---|---|---|---|
| ☑ | *VOC* | *3x 40-mL amber VOA vials* | *HCl* |
| ☐ | | | |
| ☐ | | | |
| ☐ | | | |
| ☐ | | | |
| ☐ | | | |



Well No.

# MONITORING WELL SAMPLING LOG

Field Parameter Instrument *YSI Pro Plus* Circle one: Parameters stabilized or >3 well volumes purged

Sample Observations

Notes

**FIELD PARAMETERS** [stabilization criteria]

| Time | Temp. (°C) | Conductivity (µS/cm) [± 3%] | Dissolved Oxygen (mg/L) [± 10%] | pH [± 0.1] | ORP (mV) [± 10mV] | Water Clarity (visual) |
|---|---|---|---|---|---|---|
| 14:33 | 3.2 | 205.1 | | 7.03 | | turbid |
| 14:36 | 3.2 | 212.9 | | 6.97 | | clear |
| 14:40 | 3.1 | 213.6 | | 6.97 | | " |
| 14:43 | 3.1 | 213.7 | | 7.03 | | " |
| 14:46 | 3.2 | 214.2 | | 7.00 | | |
| 14:47 | Sample | | | | | |

Laboratory *SGS*

| | Analysis | Sample Containers | Preservatives |
|---|---|---|---|
| ☑ | *VOC* | *3x 40-mL amber VOA vials* | *HCl* |
| ☐ | | | |
| ☐ | | | |
| ☐ | | | |
| ☐ | | | |
| ☐ | | | |



Well No. MW-13

# MONITORING WELL SAMPLING LOG

Field Parameter Instrument *YSI Pro Plus* Circle one: Parameters stabilized or >3 well volumes purged

Sample Observations

Notes

**FIELD PARAMETERS** [stabilization criteria]

| Time | Temp. (°C) | Conductivity (µS/cm) [± 3%] | Dissolved Oxygen (mg/L) [± 10%] | pH [± 0.1] | ORP (mV) [± 10mV] | Water Clarity (visual) |
|---|---|---|---|---|---|---|
| 12:13 | 3.5 | 210.2 | 2.63 | 7.06 | | Set. turbid |
| 12:16 | 3.5 | 210.5 | 0.40 | 6.99 | | " |
| 12:20 | 3.5 | 210.1 | 0.15 | 7.00 | | Clear |
| 12:23 | 3.4 | 209.7 | 0.12 | 7.02 | | " |
| 12:25 | 3.4 | 209.5 | 0.10 | 7.04 | | " |
| 12:28 | 3.4 | 209.90 | 0.08 | 7.13 | | " |
| 12:29 | Sample | | | | | |

Laboratory *SGS*

| | Analysis | Sample Containers | Preservatives |
|---|---|---|---|
| ☑ | *VOC* | *3x 40-mL amber VOA vials* | *HCl* |
| ☐ | | | |
| ☐ | | | |
| ☐ | | | |
| ☐ | | | |
| ☐ | | | |



Well No. MW-35

13:15 Paul was home, according to Bright Electric employee. let us into garage and sampled according to plan.

13:50 Headed back to SWI to unload unnecessary equip. (decon, etc) used for MW before 15:00 appointment.

15:15 Arrived at Bob Sloan. ~~Owners~~ Occupant not home. Waited 10 minutes, then called. Mitch (occupant) told us to go ahead and sample since it was on outside spigot.

16:00 Arrived at SWI and unloaded rest of equipment.

# APPENDIX B

## ANALYTICAL LABORATORY REPORTS &
## LABORATORY REVIEW CHECKLISTS
## FOR 2012 SAMPLES COLLECTED FOR LONG-TERM MONITORING
## RESIDENTIAL WELL SAMPLES
## MONITORING WELL SAMPLES

**SGS North America Inc.**
**Alaska Division**
**Level II Laboratory Data Report**

| | |
|---|---|
| Project: | 6 -mile 1566-003 |
| Client: | Shannon & Wilson-Fairbanks |
| SGS Work Order: | 1128320 |

Released by: Stephen C. Ede

Alaska Division Technical Director

Stephen Ede
2012.08.21
10:43:04
-08'00'

**Contents:**

**Client Name: Shannon & Wilson-Fairbanks**
**Project Name: 6 -mile 1566-003**
**Workorder No.: 1128320**

## Sample Comments

Refer to the sample receipt form for information on sample condition.

| Lab Sample ID | Sample Type | Client Sample ID |
|---|---|---|
| 1128320001 | PS | 1566-080312-MW22 |
| | Revised Report: J Flagging turned off per client request. | |
| 1128320002 | PS | 1566-080312-RW16 |
| | Revised Report: J Flagging turned off per client request. | |
| 1128320003 | PS | 1566-080312-MW23 |
| | Revised Report: J Flagging turned off per client request. | |
| 1128320004 | * TB | TRIP BLANK |
| | Revised Report: J Flagging turned off per client request. | |
| 1105168 | * LCS | LCS for HBN 1364362 [VXX/23842 |
| | 524.2 - LCS recoveries for multiple analytes do not meet QC criteria (biased high). These analytes were not detected above the LOQ in the associated samples. | |
| 1105169 | * LCSD | LCSD for HBN 1364362 [VXX/2384 |
| | 524.2 - LCSD recoveries for multiple analytes do not meet QC criteria (biased high). These analytes were not detected above the LOQ in the associated samples. | |
| 1105171 | * CCV | CCV for HBN 1364363 [VMS/13018 |
| | 524.2 - CCV recoveries for multiple analytes do not meet QC criteria (biased high). These analytes were not detected above the LOQ in the associated samples. | |
| 1106236 | * LCSD | LCSD for HBN 1367360 [VXX/2386 |
| | 8260B - LCS/LCSD RPD for vinyl acetate does not meet QC criteria. This analyte was not detected above the LOQ in the assocaited samples. | |
| 1106246 | * CCV | CCV for HBN 1367363 [VMS/13032 |
| | 8260B - CCV recovery for methyl iodide and vinyl acetate does not meet QC criteria (biased high). These analytes were not detected above the LOQ in the associated samples. | |

* QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.


SGS North America Inc. | Environmental Division 200 West Potter Drive Anchorage AK 99518 t(907)562.2343 f(907)561.5301
www.us.sgs.com Member of SGS Group

# Laboratory Analytical Report

Client: **Shannon & Wilson-Fairbanks**
2355 Hill Rd
Fairbanks, AK 99709

Attn: **Julie Keener**
T: (907)479-0600 F:(907)479-5691
jak@shanwil.com

Project: **6 -mile 1566-003**

Workorder No.: **1128320**

Certification:

This data package is in compliance with the terms and conditions of the contract, both technically and for completeness, unless otherwise noted on the sample data sheet(s) and/or case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory. If you have any questions regarding this report, or if we can be of further assistance, please contact your SGS Project Manager.

Jennifer Dawkins

Project Manager

**Contents (Bookmarked in PDF):**





SGS Laboratories North America Inc. | Environmental Division 200 West Potter Drive Anchorage AK 99518 t(907)562.2343 f(907)561.5301
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Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (<http://www.sgs.com/terms_and_conditions.htm>), unless other written agreements have been accepted by both parties.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO 17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

| | |
|---|---|
| * | The analyte has exceeded allowable regulatory or control limits. |
| ! | Surrogate out of control limits. |
| B | Indicates the analyte is found in a blank associated with the sample. |
| CCV | Continuing Calibration Verification |
| CL | Control Limit |
| D | The analyte concentration is the result of a dilution. |
| DF | Dilution Factor |
| DL | Detection Limit (i.e., maximum method detection limit) |
| E | The analyte result is above the calibrated range. |
| F | Indicates value that is greater than or equal to the DL |
| GT | Greater Than |
| ICV | Initial Calibration Verification |
| J | The quantitation is an estimation. |
| JL | The analyte was positively identified, but the quantitation is a low estimation. |
| LCS(D) | Laboratory Control Spike (Duplicate) |
| LOD | Limit of Detection (i.e., 2xDL) |
| LOQ | Limit of Quantitation (i.e., reporting or practical quantitation limit) |
| LT | Less Than |
| M | A matrix effect was present. |
| MB | Method Blank |
| MS(D) | Matrix Spike (Duplicate) |
| ND | Indicates the analyte is not detected. |
| Q | QC parameter out of acceptance range. |
| R | Rejected |
| RL | Reporting Limit |
| RPD | Relative Percent Difference |
| U | Indicates the analyte was analyzed for but not detected. |

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content.
All DRO/RRO analyses are integrated per SOP.


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# SAMPLE SUMMARY

Print Date: 8/21/2012 8:37 am

**Client Name: Shannon & Wilson-Fairbanks**
**Project Name: 6 -mile 1566-003**
**Workorder No.: 1128320**

## Analytical Methods

| Method Description | Analytical Method |
|---|---|
| Volatile Organic Compounds (W) FULL | SW8260B |
| Volatile Organics by 524.2 (DW) | EPA 524.2 |

## Sample ID Cross Reference

| Lab Sample ID | Client Sample ID |
|---|---|
| 1128320001 | 1566-080312-MW22 |
| 1128320002 | 1566-080312-RW16 |
| 1128320003 | 1566-080312-MW23 |
| 1128320004 | TRIP BLANK |


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## Detectable Results Summary

Print Date: 8/21/2012 8:37 am

Client Sample ID: **1566-080312-MW22**

SGS Ref. #: 1128320001

| Parameter | Result | Units |
|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | |
| cis-1,2-Dichloroethene | 4.89 | ug/L |
| Trichloroethene | 3.20 | ug/L |
| trans-1,2-Dichloroethene | 4.89 | ug/L |

Client Sample ID: **1566-080312-RW16**

SGS Ref. #: 1128320002

| Parameter | Result | Units |
|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | |
| cis-1,2-Dichloroethene | 0.570 | ug/L |
| Trichloroethene | 2.90 | ug/L |

Client Sample ID: **1566-080312-MW23**

SGS Ref. #: 1128320003

| Parameter | Result | Units |
|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | |
| cis-1,2-Dichloroethene | 1.07 | ug/L |
| Trichloroethene | 1.72 | ug/L |
| trans-1,2-Dichloroethene | 1.89 | ug/L |

Client Sample ID: **1566-080312-MW22**
SGS Ref. #: 1128320001
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 12:13
Receipt Date/Time: 08/07/12 09:20

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1,1-Trichloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1,2,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1,2-Trichloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1-Dichloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1-Dichloroethene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1-Dichloropropene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2,3-Trichlorobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2,3-Trichloropropane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2,4-Trichlorobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2,4-Trimethylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dibromo-3-chloropropane | 2.00 U | 2.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dibromoethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dichlorobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dichloropropane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,3,5-Trimethylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,3-Dichlorobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,3-Dichloropropane | 0.400 U | 0.400 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,4-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| 2,2-Dichloropropane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 2-Butanone (MEK) | 10.0 U | 10.0 | ug/L | 1 | VMS13032 | VXX23864 | |
| 2-Chlorotoluene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 2-Hexanone | 10.0 U | 10.0 | ug/L | 1 | VMS13032 | VXX23864 | |
| 4-Chlorotoluene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 4-Isopropyltoluene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 4-Methyl-2-pentanone (MIBK) | 10.0 U | 10.0 | ug/L | 1 | VMS13032 | VXX23864 | |
| Benzene | 0.400 U | 0.400 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromochloromethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromodichloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromoform | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromomethane | 3.00 U | 3.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Carbon disulfide | 2.00 U | 2.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Carbon tetrachloride | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Chlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |

Client Sample ID: **1566-080312-MW22**
SGS Ref. #: 1128320001
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 12:13
Receipt Date/Time: 08/07/12 09:20

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| Chloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Chloroform | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Chloromethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| cis-1,2-Dichloroethene | 4.89 | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| cis-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| Dibromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| Dibromomethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Dichlorodifluoromethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Ethylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Hexachlorobutadiene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Isopropylbenzene (Cumene) | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Methylene chloride | 5.00 U | 5.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Methyl-t-butyl ether | 5.00 U | 5.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Naphthalene | 2.00 U | 2.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| n-Butylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| n-Propylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| o-Xylene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| P & M -Xylene | 2.00 U | 2.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| sec-Butylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Styrene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| tert-Butylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Tetrachloroethene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Toluene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| trans-1,2-Dichloroethene | 4.89 | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| trans-1,3-Dichloropropene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Trichloroethene | 3.20 | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Trichlorofluoromethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Vinyl chloride | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Xylenes (total) | 3.00 U | 3.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dichloroethane-D4 <surr> | 101 | 70-120 | % | 1 | VMS13032 | VXX23864 | |
| 4-Bromofluorobenzene <surr> | 102 | 75-120 | % | 1 | VMS13032 | VXX23864 | |
| Toluene-d8 <surr> | 101 | 85-120 | % | 1 | VMS13032 | VXX23864 | |

Client Sample ID: **1566-080312-MW22**
SGS Ref. #: 1128320001
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 12:13
Receipt Date/Time: 08/07/12 09:20

## Volatile Gas Chromatography/Mass Spectroscopy

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|

**Batch Information**

Analytical Batch: VMS13032
Analytical Method: SW8260B
Analysis Date/Time: 08/13/12 14:51
Dilution Factor: 1

Prep Batch: VXX23864
Prep Method: SW5030B
Prep Date/Time: 08/13/12 09:25

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128320001-A
Analyst: JPI

Client Sample ID: **1566-080312-RW16**
SGS Ref. #: 1128320002
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 15:41
Receipt Date/Time: 08/07/12 09:20

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,1,1-Trichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,1,2,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,1,2-Trichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,1-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,1-Dichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,1-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2,3-Trichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2,3-Trichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2,4-Trichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2,4-Trimethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2-Dibromo-3-chloropropane | 2.00 U | 2.00 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2-Dibromoethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,3,5-Trimethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,3-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,3-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,4-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 2,2-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 2-Chlorotoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 4-Chlorotoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 4-Isopropyltoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Benzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Bromobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Bromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Bromodichloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Bromoform | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Bromomethane | 2.00 U | 2.00 | ug/L | 1 | VMS13028 | VXX23856 | |
| Carbon tetrachloride | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Chlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Chloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13028 | VXX23856 | |
| Chloroform | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Chloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| cis-1,2-Dichloroethene | 0.570 | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |

Client Sample ID: **1566-080312-RW16**
SGS Ref. #: 1128320002
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 15:41
Receipt Date/Time: 08/07/12 09:20

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Dibromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Dibromomethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Dichlorodifluoromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Ethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Hexachlorobutadiene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Isopropylbenzene (Cumene) | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Methylene chloride | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Methyl-t-butyl ether | 1.00 U | 1.00 | ug/L | 1 | VMS13028 | VXX23856 | |
| Naphthalene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| n-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| n-Propylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| o-Xylene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| P & M -Xylene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| sec-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Styrene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| tert-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Tetrachloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Toluene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Total Trihalomethanes | 2.00 U | 2.00 | ug/L | 1 | VMS13028 | VXX23856 | |
| trans-1,2-Dichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| trans-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Trichloroethene | 2.90 | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Trichlorofluoromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Vinyl chloride | 0.400 U | 0.400 | ug/L | 1 | VMS13028 | VXX23856 | |
| Xylenes (total) | 1.00 U | 1.00 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2-Dichloroethane-D4 <surr> | 117 | 70-130 | % | 1 | VMS13028 | VXX23856 | |
| 4-Bromofluorobenzene <surr> | 103 | 70-130 | % | 1 | VMS13028 | VXX23856 | |
| Toluene-d8 <surr> | 96.3 | 70-130 | % | 1 | VMS13028 | VXX23856 | |

**Batch Information**

Analytical Batch: VMS13028
Analytical Method: EPA 524.2
Analysis Date/Time: 08/07/12 19:41
Dilution Factor: 1

Prep Batch: VXX23856
Prep Method: SW5030B
Prep Date/Time: 08/07/12 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128320002-A
Analyst: JDH

Client Sample ID: **1566-080312-MW23**
SGS Ref. #: 1128320003
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 14:47
Receipt Date/Time: 08/07/12 09:20

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1,1-Trichloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1,2,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1,2-Trichloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1-Dichloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1-Dichloroethene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1-Dichloropropene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2,3-Trichlorobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2,3-Trichloropropane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2,4-Trichlorobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2,4-Trimethylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dibromo-3-chloropropane | 2.00 U | 2.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dibromoethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dichlorobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dichloropropane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,3,5-Trimethylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,3-Dichlorobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,3-Dichloropropane | 0.400 U | 0.400 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,4-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| 2,2-Dichloropropane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 2-Butanone (MEK) | 10.0 U | 10.0 | ug/L | 1 | VMS13032 | VXX23864 | |
| 2-Chlorotoluene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 2-Hexanone | 10.0 U | 10.0 | ug/L | 1 | VMS13032 | VXX23864 | |
| 4-Chlorotoluene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 4-Isopropyltoluene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 4-Methyl-2-pentanone (MIBK) | 10.0 U | 10.0 | ug/L | 1 | VMS13032 | VXX23864 | |
| Benzene | 0.400 U | 0.400 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromochloromethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromodichloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromoform | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromomethane | 3.00 U | 3.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Carbon disulfide | 2.00 U | 2.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Carbon tetrachloride | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Chlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |

Client Sample ID: **1566-080312-MW23**
SGS Ref. #: 1128320003
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 14:47
Receipt Date/Time: 08/07/12 09:20

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| Chloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Chloroform | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Chloromethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| cis-1,2-Dichloroethene | 1.07 | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| cis-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| Dibromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| Dibromomethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Dichlorodifluoromethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Ethylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Hexachlorobutadiene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Isopropylbenzene (Cumene) | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Methylene chloride | 5.00 U | 5.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Methyl-t-butyl ether | 5.00 U | 5.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Naphthalene | 2.00 U | 2.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| n-Butylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| n-Propylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| o-Xylene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| P & M -Xylene | 2.00 U | 2.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| sec-Butylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Styrene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| tert-Butylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Tetrachloroethene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Toluene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| trans-1,2-Dichloroethene | 1.89 | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| trans-1,3-Dichloropropene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Trichloroethene | 1.72 | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Trichlorofluoromethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Vinyl chloride | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Xylenes (total) | 3.00 U | 3.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dichloroethane-D4 <surr> | 104 | 70-120 | % | 1 | VMS13032 | VXX23864 | |
| 4-Bromofluorobenzene <surr> | 107 | 75-120 | % | 1 | VMS13032 | VXX23864 | |
| Toluene-d8 <surr> | 103 | 85-120 | % | 1 | VMS13032 | VXX23864 | |

Client Sample ID: **1566-080312-MW23**
SGS Ref. #: 1128320003
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 14:47
Receipt Date/Time: 08/07/12 09:20

## Volatile Gas Chromatography/Mass Spectroscopy

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|

**Batch Information**

Analytical Batch: VMS13032
Analytical Method: SW8260B
Analysis Date/Time: 08/13/12 15:18
Dilution Factor: 1

Prep Batch: VXX23864
Prep Method: SW5030B
Prep Date/Time: 08/13/12 09:25

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128320003-A
Analyst: JPI

Client Sample ID: **TRIP BLANK**
SGS Ref. #: 1128320004
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 12:13
Receipt Date/Time: 08/07/12 09:20

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1,1-Trichloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1,2,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1,2-Trichloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1-Dichloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1-Dichloroethene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,1-Dichloropropene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2,3-Trichlorobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2,3-Trichloropropane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2,4-Trichlorobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2,4-Trimethylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dibromo-3-chloropropane | 2.00 U | 2.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dibromoethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dichlorobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dichloropropane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,3,5-Trimethylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,3-Dichlorobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,3-Dichloropropane | 0.400 U | 0.400 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,4-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| 2,2-Dichloropropane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 2-Butanone (MEK) | 10.0 U | 10.0 | ug/L | 1 | VMS13032 | VXX23864 | |
| 2-Chlorotoluene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 2-Hexanone | 10.0 U | 10.0 | ug/L | 1 | VMS13032 | VXX23864 | |
| 4-Chlorotoluene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 4-Isopropyltoluene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 4-Methyl-2-pentanone (MIBK) | 10.0 U | 10.0 | ug/L | 1 | VMS13032 | VXX23864 | |
| Benzene | 0.400 U | 0.400 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromobenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromochloromethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromodichloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromoform | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Bromomethane | 3.00 U | 3.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Carbon disulfide | 2.00 U | 2.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Carbon tetrachloride | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Chlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |

Client Sample ID: **TRIP BLANK**
SGS Ref. #: 1128320004
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 12:13
Receipt Date/Time: 08/07/12 09:20

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| Chloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Chloroform | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Chloromethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| cis-1,2-Dichloroethene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| cis-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| Dibromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13032 | VXX23864 | |
| Dibromomethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Dichlorodifluoromethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Ethylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Hexachlorobutadiene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Isopropylbenzene (Cumene) | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Methylene chloride | 5.00 U | 5.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Methyl-t-butyl ether | 5.00 U | 5.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Naphthalene | 2.00 U | 2.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| n-Butylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| n-Propylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| o-Xylene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| P & M -Xylene | 2.00 U | 2.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| sec-Butylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Styrene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| tert-Butylbenzene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Tetrachloroethene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Toluene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| trans-1,2-Dichloroethene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| trans-1,3-Dichloropropene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Trichloroethene | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Trichlorofluoromethane | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Vinyl chloride | 1.00 U | 1.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| Xylenes (total) | 3.00 U | 3.00 | ug/L | 1 | VMS13032 | VXX23864 | |
| 1,2-Dichloroethane-D4 <surr> | 97.7 | 70-120 | % | 1 | VMS13032 | VXX23864 | |
| 4-Bromofluorobenzene <surr> | 101 | 75-120 | % | 1 | VMS13032 | VXX23864 | |
| Toluene-d8 <surr> | 103 | 85-120 | % | 1 | VMS13032 | VXX23864 | |

Client Sample ID: **TRIP BLANK**
SGS Ref. #: 1128320004
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 12:13
Receipt Date/Time: 08/07/12 09:20

## Volatile Gas Chromatography/Mass Spectroscopy

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|

**Batch Information**

Analytical Batch: VMS13032
Analytical Method: SW8260B
Analysis Date/Time: 08/13/12 14:24
Dilution Factor: 1

Prep Batch: VXX23864
Prep Method: SW5030B
Prep Date/Time: 08/13/12 09:25

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128320004-B
Analyst: JPI

Client Sample ID: **TRIP BLANK**
SGS Ref. #: 1128320004
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 12:13
Receipt Date/Time: 08/07/12 09:20

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,1,1-Trichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,1,2,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,1,2-Trichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,1-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,1-Dichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,1-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2,3-Trichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2,3-Trichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2,4-Trichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2,4-Trimethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2-Dibromo-3-chloropropane | 2.00 U | 2.00 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2-Dibromoethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,3,5-Trimethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,3-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,3-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,4-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 2,2-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 2-Chlorotoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 4-Chlorotoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| 4-Isopropyltoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Benzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Bromobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Bromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Bromodichloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Bromoform | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Bromomethane | 2.00 U | 2.00 | ug/L | 1 | VMS13028 | VXX23856 | |
| Carbon tetrachloride | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Chlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Chloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13028 | VXX23856 | |
| Chloroform | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Chloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| cis-1,2-Dichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |

Client Sample ID: **TRIP BLANK**
SGS Ref. #: 1128320004
Project ID: 6 -mile 1566-003
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/03/12 12:13
Receipt Date/Time: 08/07/12 09:20

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Dibromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Dibromomethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Dichlorodifluoromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Ethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Hexachlorobutadiene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Isopropylbenzene (Cumene) | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Methylene chloride | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Methyl-t-butyl ether | 1.00 U | 1.00 | ug/L | 1 | VMS13028 | VXX23856 | |
| Naphthalene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| n-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| n-Propylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| o-Xylene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| P & M -Xylene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| sec-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Styrene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| tert-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Tetrachloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Toluene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Total Trihalomethanes | 2.00 U | 2.00 | ug/L | 1 | VMS13028 | VXX23856 | |
| trans-1,2-Dichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| trans-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Trichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Trichlorofluoromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13028 | VXX23856 | |
| Vinyl chloride | 0.400 U | 0.400 | ug/L | 1 | VMS13028 | VXX23856 | |
| Xylenes (total) | 1.00 U | 1.00 | ug/L | 1 | VMS13028 | VXX23856 | |
| 1,2-Dichloroethane-D4 <surr> | 112 | 70-130 | % | 1 | VMS13028 | VXX23856 | |
| 4-Bromofluorobenzene <surr> | 101 | 70-130 | % | 1 | VMS13028 | VXX23856 | |
| Toluene-d8 <surr> | 98 | 70-130 | % | 1 | VMS13028 | VXX23856 | |

**Batch Information**

Analytical Batch: VMS13028
Analytical Method: EPA 524.2
Analysis Date/Time: 08/07/12 13:57
Dilution Factor: 1

Prep Batch: VXX23856
Prep Method: SW5030B
Prep Date/Time: 08/07/12 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128320004-A
Analyst: JDH

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1105167 Method Blank | **Printed Date/Time** | 08/21/2012 8:37 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Prep** | **Batch** | VXX23856 |
| **Project Name/#** | 6 -mile 1566-003 | | **Method** | SW5030B |
| **Matrix** | Drinking Water | | **Date** | 08/07/2012 |

QC results affect the following production samples:

1128320002, 1128320004

| Parameter | Results | LOQ/CL | DL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,1,1-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,1,2,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,1,2-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,1-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,1-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,1-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,2,3-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,2,3-Trichloropropane | 0.360 U | 0.500 | 0.180 | ug/L | 08/07/12 |
| 1,2,4-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,2,4-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,2-Dibromo-3-chloropropane | 1.24 U | 2.00 | 0.620 | ug/L | 08/07/12 |
| 1,2-Dibromoethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,2-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,2-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,3,5-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,3-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,3-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 1,4-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 2,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 2-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 4-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| 4-Isopropyltoluene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Benzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Bromobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Bromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Bromodichloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Bromoform | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Bromomethane | 1.24 U | 2.00 | 0.620 | ug/L | 08/07/12 |
| Carbon tetrachloride | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Chlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Chloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/07/12 |
| Chloroform | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Chloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| cis-1,2-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1105167 Method Blank | **Printed Date/Time** | 08/21/2012 8:37 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Prep** | **Batch** | VXX23856 |
| **Project Name/#** | 6 -mile 1566-003 | | **Method** | SW5030B |
| **Matrix** | Drinking Water | | **Date** | 08/07/2012 |

| Parameter | Results | LOQ/CL | DL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| cis-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Dibromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Dibromomethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Dichlorodifluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Ethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Hexachlorobutadiene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Isopropylbenzene (Cumene) | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Methylene chloride | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Methyl-t-butyl ether | 1.00 U | 1.00 | 0.500 | ug/L | 08/07/12 |
| Naphthalene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| n-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| n-Propylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| o-Xylene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| P & M -Xylene | 0.360 U | 0.500 | 0.180 | ug/L | 08/07/12 |
| sec-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Styrene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| tert-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Tetrachloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Toluene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| trans-1,2-Dichloroethene | 0.190J | 0.500 | 0.150 | ug/L | 08/07/12 |
| trans-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Trichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Trichlorofluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/07/12 |
| Vinyl chloride | 0.240 U | 0.400 | 0.120 | ug/L | 08/07/12 |
| **Surrogates** | | | | | |
| 1,2-Dichloroethane-D4 <surr> | 109 | 70-130 | | % | 08/07/12 |
| 4-Bromofluorobenzene <surr> | 102 | 70-130 | | % | 08/07/12 |
| Toluene-d8 <surr> | 98.5 | 70-130 | | % | 08/07/12 |

| | |
|---|---|
| **Batch** | VMS13028 |
| **Method** | EPA 524.2 |
| **Instrument** | Agilent 7890-75MS |

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|---|---|---|---|---|---|
| **SGS Ref.#** | 1106234 | Method Blank | **Printed Date/Time** | | 08/21/2012 8:37 |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Prep** | **Batch** | VXX23864 |
| **Project Name/#** | 6 -mile 1566-003 | | | **Method** | SW5030B |
| **Matrix** | Water (Surface, Eff., Ground) | | | **Date** | 08/13/2012 |

QC results affect the following production samples:

1128320001, 1128320003, 1128320004

| Parameter | Results | LOQ/CL | DL | Units | Analysis Date |
|---|---|---|---|---|---|

**Volatile Gas Chromatography/Mass Spectroscopy**

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1106234 Method Blank | | **Printed Date/Time** | 08/21/2012 8:37 |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Prep Batch** | VXX23864 |
| **Project Name/#** | 6 -mile 1566-003 | | **Method** | SW5030B |
| **Matrix** | Water (Surface, Eff., Ground) | | **Date** | 08/13/2012 |

| Parameter | Results | LOQ/CL | DL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/13/12 |
| 1,1,1-Trichloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,1,2,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/13/12 |
| 1,1,2-Trichloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,1-Dichloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,1-Dichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,1-Dichloropropene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,2,3-Trichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,2,3-Trichloropropane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,2,4-Trichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,2,4-Trimethylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,2-Dibromo-3-chloropropane | 1.24 U | 2.00 | 0.620 | ug/L | 08/13/12 |
| 1,2-Dibromoethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,2-Dichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,2-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/13/12 |
| 1,2-Dichloropropane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,3,5-Trimethylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,3-Dichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 1,3-Dichloropropane | 0.240 U | 0.400 | 0.120 | ug/L | 08/13/12 |
| 1,4-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/13/12 |
| 2,2-Dichloropropane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 2-Butanone (MEK) | 6.20 U | 10.0 | 3.10 | ug/L | 08/13/12 |
| 2-Chlorotoluene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 2-Hexanone | 6.20 U | 10.0 | 3.10 | ug/L | 08/13/12 |
| 4-Chlorotoluene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 4-Isopropyltoluene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| 4-Methyl-2-pentanone (MIBK) | 6.20 U | 10.0 | 3.10 | ug/L | 08/13/12 |
| Benzene | 0.240 U | 0.400 | 0.120 | ug/L | 08/13/12 |
| Bromobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Bromochloromethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Bromodichloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/13/12 |
| Bromoform | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Bromomethane | 1.88 U | 3.00 | 0.940 | ug/L | 08/13/12 |
| Carbon disulfide | 1.24 U | 2.00 | 0.620 | ug/L | 08/13/12 |
| Carbon tetrachloride | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Chlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/13/12 |
| Chloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Chloroform | 0.600 U | 1.00 | 0.300 | ug/L | 08/13/12 |
| Chloromethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |

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|---|---|---|---|---|
| **SGS Ref.#** | 1106234 Method Blank | **Printed Date/Time** | 08/21/2012 8:37 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Prep** | **Batch** | VXX23864 |
| **Project Name/#** | 6 -mile 1566-003 | | **Method** | SW5030B |
| **Matrix** | Water (Surface, Eff., Ground) | | **Date** | 08/13/2012 |

| Parameter | Results | LOQ/CL | DL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| cis-1,2-Dichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| cis-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 08/13/12 |
| Dibromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/13/12 |
| Dibromomethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Dichlorodifluoromethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Ethylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Hexachlorobutadiene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Isopropylbenzene (Cumene) | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Methylene chloride | 2.00 U | 5.00 | 1.00 | ug/L | 08/13/12 |
| Methyl-t-butyl ether | 3.00 U | 5.00 | 1.50 | ug/L | 08/13/12 |
| Naphthalene | 1.24 U | 2.00 | 0.620 | ug/L | 08/13/12 |
| n-Butylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| n-Propylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| o-Xylene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| P & M -Xylene | 1.24 U | 2.00 | 0.620 | ug/L | 08/13/12 |
| sec-Butylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Styrene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| tert-Butylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Tetrachloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Toluene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| trans-1,2-Dichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| trans-1,3-Dichloropropene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Trichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Trichlorofluoromethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Vinyl chloride | 0.620 U | 1.00 | 0.310 | ug/L | 08/13/12 |
| Xylenes (total) | 1.88 U | 3.00 | 0.940 | ug/L | 08/13/12 |
| **Surrogates** | | | | | |
| 1,2-Dichloroethane-D4 <surr> | 97.8 | 70-120 | | % | 08/13/12 |
| 4-Bromofluorobenzene <surr> | 92.8 | 75-120 | | % | 08/13/12 |
| Toluene-d8 <surr> | 103 | 85-120 | | % | 08/13/12 |

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|---|---|
| **Batch** | VMS13032 |
| **Method** | SW8260B |
| **Instrument** | HP 5890 Series II MS1 VJA |

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|---|---|---|---|---|---|
| **SGS Ref.#** | 1105168 | Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:37 |
| | 1105169 | Lab Control Sample Duplicate | **Prep Batch** | VXX23856 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 6 -mile 1566-003 | | **Date** | 08/07/2012 | |
| **Matrix** | Drinking Water | | | | |

QC results affect the following production samples:

1128320002, 1128320004

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | LCS | 34.1 | 114 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 35.0 | 117 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,1,1-Trichloroethane | LCS | 32.9 | 110 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 33.5 | 112 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,1,2,2-Tetrachloroethane | LCS | 32.9 | 110 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 33.7 | 112 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,1,2-Trichloroethane | LCS | 33.2 | 111 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 34.2 | 114 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,1-Dichloroethane | LCS | 32.9 | 110 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 33.5 | 112 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,1-Dichloroethene | LCS | 32.0 | 107 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.7 | 109 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,1-Dichloropropene | LCS | 33.2 | 111 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 33.4 | 111 | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,2,3-Trichlorobenzene | LCS | 32.2 | 107 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.6 | 109 | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,2,3-Trichloropropane | LCS | 31.8 | 106 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.8 | 109 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,2,4-Trichlorobenzene | LCS | 32.4 | 108 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.5 | 108 | | 0 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,2,4-Trimethylbenzene | LCS | 34.0 | 113 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 34.6 | 115 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,2-Dibromo-3-chloropropane | LCS | 34.1 | 114 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 35.5 | 118 | | 4 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,2-Dibromoethane | LCS | 32.5 | 108 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 33.9 | 113 | | 4 | (< 30 ) | 30 ug/L | 08/07/2012 |

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|---|---|---|---|---|---|
| **SGS Ref.#** | 1105168 | Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:37 |
| | 1105169 | Lab Control Sample Duplicate | **Prep Batch** | VXX23856 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 6 -mile 1566-003 | | **Date** | 08/07/2012 | |
| **Matrix** | Drinking Water | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| 1,2-Dichlorobenzene | LCS | 31.5 | 105 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.0 | 107 | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,2-Dichloroethane | LCS | 31.3 | 104 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.8 | 109 | | 5 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,2-Dichloropropane | LCS | 33.2 | 111 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 33.9 | 113 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,3,5-Trimethylbenzene | LCS | 34.2 | 114 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 35.0 | 117 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,3-Dichlorobenzene | LCS | 31.7 | 106 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.9 | 110 | | 4 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,3-Dichloropropane | LCS | 33.4 | 111 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 34.3 | 114 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 1,4-Dichlorobenzene | LCS | 31.4 | 105 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.8 | 109 | | 4 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 2,2-Dichloropropane | LCS | 34.2 | 114 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 34.5 | 115 | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 2-Chlorotoluene | LCS | 32.2 | 107 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 33.4 | 111 | | 4 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 4-Chlorotoluene | LCS | 34.3 | 114 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 33.8 | 113 | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| 4-Isopropyltoluene | LCS | 30.4 | 101 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 31.0 | 103 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Benzene | LCS | 32.4 | 108 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.8 | 109 | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Bromobenzene | LCS | 31.4 | 105 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.0 | 107 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Bromochloromethane | LCS | 29.0 | 97 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 30.0 | 100 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |

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|---|---|---|---|---|---|
| **SGS Ref.#** | 1105168 | Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:37 |
| | 1105169 | Lab Control Sample Duplicate | **Prep Batch** | VXX23856 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 6 -mile 1566-003 | | **Date** | 08/07/2012 | |
| **Matrix** | Drinking Water | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| Bromodichloromethane | LCS | 31.9 | 106 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.9 | 110 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Bromoform | LCS | 34.2 | 114 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 34.7 | 116 | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Bromomethane | LCS | 39.4 | 131 * | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 40.7 | 136 * | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Carbon tetrachloride | LCS | 34.4 | 115 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 34.9 | 116 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Chlorobenzene | LCS | 31.8 | 106 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.4 | 108 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Chloroethane | LCS | 45.8 | 153 * | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 46.2 | 154 * | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Chloroform | LCS | 29.7 | 99 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 30.6 | 102 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Chloromethane | LCS | 86.3 | 288 * | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 88.1 | 294 * | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| cis-1,2-Dichloroethene | LCS | 29.2 | 97 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 29.9 | 100 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| cis-1,3-Dichloropropene | LCS | 31.9 | 106 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.9 | 110 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Dibromochloromethane | LCS | 33.8 | 113 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 34.3 | 114 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Dibromomethane | LCS | 29.7 | 99 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 31.1 | 104 | | 5 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Dichlorodifluoromethane | LCS | 258 | 861 * | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 261 | 869 * | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Ethylbenzene | LCS | 33.8 | 113 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 1105168 | Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:37 |
| | 1105169 | Lab Control Sample Duplicate | **Prep Batch** | VXX23856 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 6 -mile 1566-003 | | **Date** | 08/07/2012 | |
| **Matrix** | Drinking Water | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| | LCSD | 34.2 | 114 | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Hexachlorobutadiene | LCS | 33.8 | 113 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 34.7 | 116 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Isopropylbenzene (Cumene) | LCS | 33.8 | 113 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 33.7 | 112 | | 0 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Methylene chloride | LCS | 28.3 | 94 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 29.6 | 99 | | 4 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Methyl-t-butyl ether | LCS | 47.2 | 105 | ( 70-130 ) | | | 45 ug/L | 08/07/2012 |
| | LCSD | 49.4 | 110 | | 5 | (< 30 ) | 45 ug/L | 08/07/2012 |
| Naphthalene | LCS | 31.8 | 106 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.0 | 107 | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| n-Butylbenzene | LCS | 32.5 | 108 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 33.4 | 111 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| n-Propylbenzene | LCS | 35.1 | 117 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 35.4 | 118 | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| o-Xylene | LCS | 33.0 | 110 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.4 | 108 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| P & M -Xylene | LCS | 66.4 | 111 | ( 70-130 ) | | | 60 ug/L | 08/07/2012 |
| | LCSD | 67.0 | 112 | | 1 | (< 30 ) | 60 ug/L | 08/07/2012 |
| sec-Butylbenzene | LCS | 30.6 | 102 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 31.7 | 106 | | 4 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Styrene | LCS | 33.6 | 112 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 34.1 | 114 | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| tert-Butylbenzene | LCS | 33.8 | 113 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 34.4 | 115 | | 2 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Tetrachloroethene | LCS | 34.7 | 116 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 34.4 | 115 | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 1105168 | Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:37 |
| | 1105169 | Lab Control Sample Duplicate | **Prep Batch** | VXX23856 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 6 -mile 1566-003 | | **Date** | 08/07/2012 | |
| **Matrix** | Drinking Water | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| Toluene | LCS | 32.5 | 108 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 32.5 | 108 | | 0 | (< 30 ) | 30 ug/L | 08/07/2012 |
| trans-1,2-Dichloroethene | LCS | 28.9 | 96 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 30.4 | 101 | | 5 | (< 30 ) | 30 ug/L | 08/07/2012 |
| trans-1,3-Dichloropropene | LCS | 34.5 | 115 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 35.8 | 119 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Trichloroethene | LCS | 30.8 | 103 | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 31.6 | 105 | | 3 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Trichlorofluoromethane | LCS | 41.7 | 139 * | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 42.2 | 141 * | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| Vinyl chloride | LCS | 62.8 | 209 * | ( 70-130 ) | | | 30 ug/L | 08/07/2012 |
| | LCSD | 63.6 | 212 * | | 1 | (< 30 ) | 30 ug/L | 08/07/2012 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 <surr> | LCS | | 97 | ( 70-130 ) | | | | 08/07/2012 |
| | LCSD | | 101 | | 3 | | | 08/07/2012 |
| 4-Bromofluorobenzene <surr> | LCS | | 99 | ( 70-130 ) | | | | 08/07/2012 |
| | LCSD | | 98 | | 1 | | | 08/07/2012 |
| Toluene-d8 <surr> | LCS | | 102 | ( 70-130 ) | | | | 08/07/2012 |
| | LCSD | | 101 | | 1 | | | 08/07/2012 |

| | |
|---|---|
| **Batch** | VMS13028 |
| **Method** | EPA 524.2 |
| **Instrument** | Agilent 7890-75MS |

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 1106235 | Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:37 |
| | 1106236 | Lab Control Sample Duplicate | **Prep** **Batch** | VXX23864 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 6 -mile 1566-003 | | **Date** | 08/13/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

QC results affect the following production samples:

1128320001, 1128320003, 1128320004

| Parameter | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|

**Volatile Gas Chromatography/Mass Spectroscopy**

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1106235 Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:37 |
| | 1106236 Lab Control Sample Duplicate | **Prep Batch** | VXX23864 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 6 -mile 1566-003 | **Date** | 08/13/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | LCS | 32.5 | 108 | ( 80-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 31.6 | 105 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,1,1-Trichloroethane | LCS | 32.7 | 109 | ( 65-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 31.9 | 106 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,1,2,2-Tetrachloroethane | LCS | 26.4 | 88 | ( 65-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 25.4 | 85 | | 4 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,1,2-Trichloroethane | LCS | 30.7 | 102 | ( 75-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 33.3 | 111 | | 8 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,1-Dichloroethane | LCS | 26.8 | 89 | ( 70-135 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 26.6 | 89 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,1-Dichloroethene | LCS | 27.6 | 92 | ( 70-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 26.8 | 89 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,1-Dichloropropene | LCS | 32.2 | 107 | ( 75-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 31.2 | 104 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,2,3-Trichlorobenzene | LCS | 30.9 | 103 | ( 55-140 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 31.5 | 105 | | 2 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,2,3-Trichloropropane | LCS | 28.8 | 96 | ( 75-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 30.3 | 101 | | 5 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,2,4-Trichlorobenzene | LCS | 31.9 | 106 | ( 65-135 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 30.8 | 103 | | 4 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,2,4-Trimethylbenzene | LCS | 28.0 | 93 | ( 75-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 27.3 | 91 | | 2 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,2-Dibromo-3-chloropropane | LCS | 28.7 | 96 | ( 50-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 29.4 | 98 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,2-Dibromoethane | LCS | 33.1 | 110 | ( 80-120 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 32.5 | 108 | | 2 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,2-Dichlorobenzene | LCS | 29.2 | 97 | ( 70-120 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 29.2 | 97 | | 0 | (< 20 ) | 30 ug/L | 08/13/2012 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1106235 Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:37 |
| | 1106236 Lab Control Sample Duplicate | **Prep Batch** | VXX23864 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 6 -mile 1566-003 | **Date** | 08/13/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| 1,2-Dichloroethane | LCS | 28.6 | 95 | ( 70-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 29.3 | 98 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,2-Dichloropropane | LCS | 30.2 | 101 | ( 75-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 30.8 | 103 | | 2 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,3,5-Trimethylbenzene | LCS | 28.1 | 94 | ( 75-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 27.3 | 91 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,3-Dichlorobenzene | LCS | 29.9 | 100 | ( 75-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 30.3 | 101 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,3-Dichloropropane | LCS | 29.1 | 97 | ( 75-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 30.3 | 101 | | 4 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 1,4-Dichlorobenzene | LCS | 29.4 | 98 | ( 75-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 29.6 | 99 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 2,2-Dichloropropane | LCS | 35.0 | 117 | ( 70-135 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 34.3 | 114 | | 2 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 2-Butanone (MEK) | LCS | 97.7 | 109 | ( 30-150 ) | | | 90 ug/L | 08/13/2012 |
| | LCSD | 105 | 117 | | 7 | (< 20 ) | 90 ug/L | 08/13/2012 |
| 2-Chlorotoluene | LCS | 26.3 | 88 | ( 75-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 25.9 | 86 | | 2 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 2-Hexanone | LCS | 88.9 | 99 | ( 55-130 ) | | | 90 ug/L | 08/13/2012 |
| | LCSD | 92.7 | 103 | | 4 | (< 20 ) | 90 ug/L | 08/13/2012 |
| 4-Chlorotoluene | LCS | 27.0 | 90 | ( 75-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 26.0 | 87 | | 4 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 4-Isopropyltoluene | LCS | 29.6 | 99 | ( 75-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 29.3 | 98 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |
| 4-Methyl-2-pentanone (MIBK) | LCS | 99.9 | 111 | ( 60-135 ) | | | 90 ug/L | 08/13/2012 |
| | LCSD | 106 | 118 | | 6 | (< 20 ) | 90 ug/L | 08/13/2012 |
| Benzene | LCS | 31.1 | 104 | ( 80-120 ) | | | 30 ug/L | 08/13/2012 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1106235 Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:37 |
| | 1106236 Lab Control Sample Duplicate | **Prep Batch** | VXX23864 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 6 -mile 1566-003 | **Date** | 08/13/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| | LCSD | 30.8 | 103 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Bromobenzene | LCS | 31.3 | 104 | ( 75-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 30.0 | 100 | | 4 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Bromochloromethane | LCS | 35.6 | 119 | ( 65-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 34.2 | 114 | | 4 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Bromodichloromethane | LCS | 31.0 | 103 | ( 75-120 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 31.1 | 104 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Bromoform | LCS | 34.9 | 116 | ( 70-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 35.1 | 117 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Bromomethane | LCS | 35.5 | 118 | ( 30-145 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 31.9 | 106 | | 11 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Carbon disulfide | LCS | 40.8 | 91 | ( 35-160 ) | | | 45 ug/L | 08/13/2012 |
| | LCSD | 40.2 | 89 | | 2 | (< 20 ) | 45 ug/L | 08/13/2012 |
| Carbon tetrachloride | LCS | 34.5 | 115 | ( 65-140 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 33.1 | 110 | | 4 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Chlorobenzene | LCS | 33.1 | 110 | ( 80-120 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 31.7 | 106 | | 4 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Chloroethane | LCS | 26.5 | 89 | ( 60-135 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 27.6 | 92 | | 4 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Chloroform | LCS | 29.1 | 97 | ( 65-135 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 28.4 | 95 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Chloromethane | LCS | 33.1 | 110 | ( 40-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 34.2 | 114 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| cis-1,2-Dichloroethene | LCS | 32.4 | 108 | ( 70-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 32.3 | 108 | | 0 | (< 20 ) | 30 ug/L | 08/13/2012 |
| cis-1,3-Dichloropropene | LCS | 33.6 | 112 | ( 70-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 33.2 | 111 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1106235 Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:37 |
| | 1106236 Lab Control Sample Duplicate | **Prep Batch** | VXX23864 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 6 -mile 1566-003 | **Date** | 08/13/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| Dibromochloromethane | LCS | 33.0 | 110 | ( 60-135 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 32.6 | 109 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Dibromomethane | LCS | 32.4 | 108 | ( 75-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 32.4 | 108 | | 0 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Dichlorodifluoromethane | LCS | 31.7 | 106 | ( 30-155 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 30.7 | 102 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Ethylbenzene | LCS | 32.7 | 109 | ( 75-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 31.7 | 106 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Hexachlorobutadiene | LCS | 32.0 | 107 | ( 50-140 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 29.3 | 98 | | 9 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Isopropylbenzene (Cumene) | LCS | 32.6 | 109 | ( 75-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 31.9 | 106 | | 2 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Methylene chloride | LCS | 28.6 | 95 | ( 55-140 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 28.7 | 96 | | 0 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Methyl-t-butyl ether | LCS | 41.5 | 92 | ( 65-125 ) | | | 45 ug/L | 08/13/2012 |
| | LCSD | 42.8 | 95 | | 3 | (< 20 ) | 45 ug/L | 08/13/2012 |
| Naphthalene | LCS | 31.8 | 106 | ( 55-140 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 33.4 | 111 | | 5 | (< 20 ) | 30 ug/L | 08/13/2012 |
| n-Butylbenzene | LCS | 28.0 | 93 | ( 70-135 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 27.4 | 91 | | 2 | (< 20 ) | 30 ug/L | 08/13/2012 |
| n-Propylbenzene | LCS | 27.0 | 90 | ( 70-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 26.1 | 87 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| o-Xylene | LCS | 32.9 | 110 | ( 80-120 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 32.6 | 109 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |
| P & M -Xylene | LCS | 65.2 | 109 | ( 75-130 ) | | | 60 ug/L | 08/13/2012 |
| | LCSD | 63.4 | 106 | | 3 | (< 20 ) | 60 ug/L | 08/13/2012 |
| sec-Butylbenzene | LCS | 28.0 | 93 | ( 70-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 27.5 | 92 | | 2 | (< 20 ) | 30 ug/L | 08/13/2012 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1106235 Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:37 |
| | 1106236 Lab Control Sample Duplicate | **Prep Batch** | VXX23864 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 6 -mile 1566-003 | **Date** | 08/13/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| Styrene | LCS | 33.1 | 110 | ( 65-135 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 32.6 | 109 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |
| tert-Butylbenzene | LCS | 29.8 | 99 | ( 70-130 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 28.7 | 96 | | 4 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Tetrachloroethene | LCS | 33.2 | 111 | ( 45-150 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 35.2 | 117 | | 6 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Toluene | LCS | 30.7 | 102 | ( 75-120 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 30.9 | 103 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |
| trans-1,2-Dichloroethene | LCS | 28.3 | 94 | ( 60-140 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 28.1 | 94 | | 1 | (< 20 ) | 30 ug/L | 08/13/2012 |
| trans-1,3-Dichloropropene | LCS | 32.6 | 109 | ( 55-140 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 31.8 | 106 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Trichloroethene | LCS | 32.6 | 109 | ( 70-125 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 33.3 | 111 | | 2 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Trichlorofluoromethane | LCS | 29.9 | 100 | ( 60-145 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 29.1 | 97 | | 3 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Vinyl chloride | LCS | 30.0 | 100 | ( 50-145 ) | | | 30 ug/L | 08/13/2012 |
| | LCSD | 29.4 | 98 | | 2 | (< 20 ) | 30 ug/L | 08/13/2012 |
| Xylenes (total) | LCS | 98.0 | 109 | ( 80-120 ) | | | 90 ug/L | 08/13/2012 |
| | LCSD | 96.0 | 107 | | 2 | (< 20 ) | 90 ug/L | 08/13/2012 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 <surr> | LCS | | 94 | ( 70-120 ) | | | | 08/13/2012 |
| | LCSD | | 96 | | 2 | | | 08/13/2012 |
| 4-Bromofluorobenzene <surr> | LCS | | 90 | ( 75-120 ) | | | | 08/13/2012 |
| | LCSD | | 88 | | 2 | | | 08/13/2012 |
| Toluene-d8 <surr> | LCS | | 103 | ( 85-120 ) | | | | 08/13/2012 |
| | LCSD | | 105 | | 1 | | | 08/13/2012 |

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 1106235 | Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:37 |
| | 1106236 | Lab Control Sample Duplicate | **Prep** **Batch** | VXX23864 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 6 -mile 1566-003 | | **Date** | 08/13/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

| Parameter | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|

**Volatile Gas Chromatography/Mass Spectroscopy**

| | |
|---|---|
| **Batch** | VMS13032 |
| **Method** | SW8260B |
| **Instrument** | HP 5890 Series II MS1 VJA |

1128320

**SHANNON & WILSON, INC.**
Geotechnical and Environmental Consultants

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Laboratory: SGS
Attn:


400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

2043 Westport Center Drive
St. Louis, MO 63146-3564
(314) 699-9660

303 Wellsian Way
Richland, WA 99352
(509) 946-6309

3355 Hill Road
Fairbanks, AK 99709
(907) 479-0600

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

2255 S.W. Canyon Road
Portland, OR 97201-2498
(503) 223-6147

1200 17th Street, Suite 1024
Denver, Co 80202
(303) 825-3800


**Analysis Parameters/Sample Container Description**
(include preservative if used)

| Sample Identity | Lab No. | Time | Date Sampled | Comp. | Grab | VOC (EPA SW8260B) | VOC (EPA 524.2) | | | | | Total Number of Containers | Remarks/Matrix |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1566-080312-MW22 | 1 A-C | 12:13 | 8-3-12 | | X | X | | | | | | 3 | GW |
| 1566-080312-RW16 | 2 A-C | 15:41 | 8-3-12 | | X | | X | | | | | 3 | DW |
| 1566-080312-MW23 | 3 A-C | 14:47 | 8-3-12 | | X | X | | | | | | 3 | GW |
| TRIP BLANK | 4 A-C | | | | | | | | | | | 1 | |

| Project Information | | Sample Receipt | |
|---|---|---|---|
| Project Number: 1566-003 | | Total Number of Containers | 10 |
| Project Name: 6-Mile | | COC Seals/Intact? Y/N/NA | |
| Contact: JAK | | Received Good Cond./Cold | |
| Ongoing Project? Yes ☑ No ☐ | | Delivery Method: Hand | |
| Sampler: HRZ | | (attach shipping bill, if any) | |

**Instructions**

Requested Turnaround Time: Standard

Special Instructions:
Bill to SWI

| Relinquished By: 1. | Relinquished By: 2. | Relinquished By: 3. |
|---|---|---|
| Signature: Time: 16:55 | Signature: Time: 10:15 | Signature: Time: 1550 |
| Printed Name: Heather Znicky Date: 8-3-12 | Printed Name: Mike Storey Date: 8/6/12 | Printed Name: Jen D Date: 8-6-12 |
| Company: SWI | Company: SWI | Company: SGS |

| Received By: 1. | Received By: 2. | Received By: 3. |
|---|---|---|
| Signature: Time: 10:15 | Signature: Time: 1615 | Signature: Time: 0920 |
| Printed Name: Mike Storey Date: 8/6/10 | Printed Name: Jen Dawkins Date: 8-6-12 | Printed Name: Katherine Bauer Date: 8/7/12 |
| Company: SWI | Company: SGS | Company: SGS |

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

TB = 6.0° C  ID 10D

No. 31291

SGS

1128320

# SAMPLE RECEIPT FORM

| Review Criteria: | Condition: | Comments/Action Taken: |
|---|---|---|
| Were **custody seals** intact? Note # & location, if applicable.<br>COC accompanied samples? | Yes No N/A<br>Yes No N/A | |
| **Temperature blank** compliant* (i.e., 0-6°C after correction factor)?<br>* *Note: Exemption permitted for chilled samples collected less than 8 hours ago.*<br>Cooler ID: 1 @ 6.0 w/ Therm.ID: 1017<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>*Note: If non-compliant, use form FS-0029 to document affected samples/analyses.*<br>If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled."<br>**If temperature(s) <0°C, were all sample containers ice free?** | Yes No N/A<br><br><br><br><br><br><br><br><br><br><br>Yes No N/A | |
| Delivery method (specify all that apply): Client<br>USPS Alert Courier Road Runner AK Air<br>Lynden Carlile ERA PenAir<br>FedEx UPS NAC Other:<br>→ *For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?* | Note ABN/ tracking #<br>See Attached or N/A<br>Yes No N/A | |
| → For samples received with payment, note amount ($ ) and cash / check / CC (**circle one**) or note:<br>→ For samples **received in FBKS**, ANCH staff will verify all criteria are reviewed. | | N/A<br>SRF Initiated by: JD N/A |
| Were samples received within hold time?<br>*Note: Refer to form F-083 "Sample Guide" for hold time information.*<br>Do samples **match COC*** (i.e., sample IDs, dates/times collected)?<br>* *Note: Exemption permitted if times differ <1hr; in which case, use times on COC.*<br>Were analyses requested unambiguous? | Yes No N/A<br><br>Yes No N/A<br><br>Yes No N/A | |
| Were samples in **good condition** (no leaks/cracks/breakage)?<br>Packing material used (specify all that apply): Bubble Wrap<br>Separate plastic bags Vermiculite Other: Cobies | Yes No N/A | |
| Were all VOA vials **free of headspace** (i.e., bubbles ≤6 mm)?<br>Were all soil VOAs **field extracted** with MeOH+BFB? | Yes No N/A<br>Yes No N/A | |
| Were **proper containers** (type/mass/volume/preservative*) used?<br>* *Note: Exemption permitted for waters to be analyzed for metals.*<br>Were **Trip Blanks** (i.e., VOAs, LL-Hg) in cooler with samples? | Yes No N/A<br><br>Yes No N/A | |
| For **special handling** (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)? | Yes No N/A | |
| For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was **pH verified and compliant**?<br>If pH was adjusted, were bottles flagged (i.e., stickers)? | Yes No N/A<br>Yes No N/A | |
| For **RUSH/SHORT Hold Time** or **site-specific QC** (e.g., BMS/BMSD/BDUP) samples, were the COC & bottles flagged (e.g., stickers) accordingly? For RUSH/SHORT HT, was email sent? | Yes No N/A | |
| **For any question answered "No,"** has the PM been notified and the problem resolved (or paperwork put in their bin)? | Yes No N/A | SRF Completed by: VMB<br>PM = N/A |
| Was **PEER REVIEW** of ***sample numbering/labeling completed?*** | Yes No N/A | Peer Reviewed by: N/A |

Additional notes (if applicable):

***Note to Client:*** *Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.*

SGS

1128320

## SAMPLE RECEIPT FORM FOR TRANSFERS

**Note: This form is to be completed by Anchorage Sample Receiving staff for all shipments received at SGS-Anchorage from SGS-Fairbanks.**

| | | |
|---|---|---|
| Were samples received numbered with all criteria on Sample Receipt Form F0004 documented by Fairbanks Sample Receiving staff? If "No," ***Anchorage Sample Receiving staff must complete the receiving process & document pH verification, sample condition, etc. on the SRF initiated by Fairbanks staff*** (attached). | Yes (No) N/A | Use space below for additional notes… |
| | | |
| | | |
| | | |
| | | |
| | | |

| Review Criteria: | Condition: | Comments/Action Taken: |
|---|---|---|
| Were **custody seals** intact?<br>Note # & location:<br>COC accompanied samples? | (Yes) No N/A<br><br>(Yes) No N/A | 1FIB |
| **Temperature blank** compliant (i.e., 0-6°C after correction factor)?<br>Cooler ID: 1 @ 0.3 w/ Therm.ID: 92<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>***Note: If non-compliant, use form FS-0029 to document affected samples/analyses.***<br>If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP** will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled."<br>**If temperature(s) <0°C, were all containers ice free?** | (Yes) No N/A<br><br><br><br><br><br><br><br><br>Yes No (N/A) | |
| Delivery method: (Lynden)<br>Other: | | |
| Completed by: Katie Bauer 08/7/12 0920 | | |

# Laboratory Data Review Checklist

Completed by: Heather Zrucky

Title: Geologist  Date: 08/24/2012

CS Report Name: Six Mile Richardson Highway Groundwater Monitoring  Report Date: 08/21/2012

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS  Laboratory Report Number: 1128320

ADEC File Number: 100.38.078  ADEC RecKey Number:

1. Laboratory
   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
      Yes  No  NA (Please explain.)  Comments:

      b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
      Yes  No  NA (Please explain.)  Comments:

      Samples were not transferred to another lab.

2. Chain of Custody (COC)
   a. COC information completed, signed, and dated (including released/received by)?
      Yes  No  NA (Please explain.)  Comments:

      b. Correct analyses requested?
      Yes  No  NA (Please explain.)  Comments:

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      Yes  No  NA (Please explain.)  Comments:

      The samples were hand-delivered in a single cooler to the SGS Fairbanks receiving office and shipped overnight via Lynden Transport to the SGS Anchorage laboratory. The temperature blank was measured within the acceptable range of 0 °C to 6 °C at each location, as specified in EPA publication SW-846 and approved by the ADEC.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No NA (Please explain.) Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No NA (Please explain.) Comments:

Samples were in good condition.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No NA (Please explain.) Comments:

No discrepancies were reported.

e. Data quality or usability affected? (Please explain.)

Comments:

No; the results are unaffected.

4. Case Narrative

a. Present and understandable?

Yes No NA (Please explain.) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

Yes No NA (Please explain.) Comments:

LCS/LCSD recovery and RPD failures were noted by the laboratory; this will be discussed in the QC section below.

The lab also noted recoveries for several analytes in the CCV do not meet QC criteria. The only sample in the same analytical batch was 1566-080312-RW16, and there were no detections for these analytes, so the data quality and usability is not affected.

c. Were all corrective actions documented?

Yes No NA (Please explain.) Comments:

No corrective actions were required.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain.) Comments:

b. All applicable holding times met?

Yes No NA (Please explain.) Comments:

c. All soils reported on a dry weight basis?

Yes No NA (Please explain.) Comments:

No soil samples were submitted.

d. Are the reported PQLs (LOQs) less than the Cleanup Level or the minimum required detection level for the project?

Yes No NA (Please explain.) Comments:

The LOQs of 1,2,3-trichloropropane, 1,2-dibromoethane, and 1,2-dibromo-3-chloropropane are above the cleanup levels of 0.12 µg/L, 0.05 µg/L, and 0.2 µg/L, respectively, in each project sample associated with this work order.

e. Data quality or usability affected?

Comments:

We cannot determine if an analyte exceeds regulated levels where PQLs are elevated above the cleanup levels.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No NA (Please explain.) Comments:

ii. All method blank results less than PQL?

Yes No NA (Please explain.) Comments:

However, trans-1,2-dichloroethene was detected between the LOQ and DL at 0.190 J µg/L. The two samples that had a detection of this analyte are more than five times the detected concentration in the method blank and therefore we consider the results unaffected. One sample had no detections for this analyte, and we consider that result unaffected.

iii. If above PQL, what samples are affected?

Comments:

N/A; see above.

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?
Yes No NA (Please explain.) Comments:

| |
|---|
| No, see explanation above. |

v. Data quality or usability affected? (Please explain.)
Comments:

| |
|---|
| No; see above. |

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
Yes No NA (Please explain.) Comments:

| |
|---|
| |

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
Yes No NA (Please explain.) Comments:

| |
|---|
| No metals/inorganic analyses were conducted. |

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
Yes No NA (Please explain.) Comments:

| |
|---|
| Percent recoveries for bromoethane, chloromethane, chloroethane, trichlorofluoromethane, dichlorodifluoromethane and vinyl chloride were above laboratory control limits. One sample (1566-080312-RW16) was in the same analytical batch as these recovery failures; however, there were no detections for any of these analytes and therefore we consider the results usable and unaffected. |

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
Yes No NA (Please explain.) Comments:

| |
|---|
| The case narrative notes the vinyl chloride LCS/LCSD RPD is outside limits; however, the RPD is reported within limits. |

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments:

| |
|---|
| None; this analyte was not detected above the LOQ in the associated samples. |

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain.) Comments:

| |
|---|
| No; results were non-detect for the associated samples. |

vii. Data quality or usability affected? (Use comment box to explain.)
Comments:

| |
|---|
| No, results were non-detect for the associated samples and therefore unaffected by the above-range LCS/LCSD recoveris. |

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?
Yes No NA (Please explain.) Comments:

| |
|---|
| |

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)
Yes No NA (Please explain.) Comments:

| |
|---|
| |

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?
Yes No NA (Please explain.) Comments:

| |
|---|
| N/A; surrogates were recovered within the acceptable limits. |

iv. Data quality or usability affected? (Use the comment box to explain.)
Comments:

| |
|---|
| No; surrogate recoveries were within QC limits. |

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)
Yes No NA (Please explain.) Comments:

| |
|---|
| Samples were submitted in one cooler. |

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes No NA (Please explain.) Comments:

It is indicated on the sample receipt form.

iii. All results less than PQL?

Yes No NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

v. Data quality or usability affected? (Please explain.)

Comments:

No; results were non-detect for the trip blanks.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No NA (Please explain.) Comments:

Field duplicates were not submitted with this work order; however, they were submitted at a frequency of one for every ten samples taken for this project.

ii. Submitted blind to lab?

Yes No NA (Please explain.) Comments:

N/A; see above.

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where $R_1$ = Sample Concentration
$R_2$ = Field Duplicate Concentration

Yes No NA (Please explain.) Comments:

N/A; see above.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

N/A; see above.

f. Decontamination or Equipment Blank (If not used explain why).

Yes No NA (Please explain.) Comments:

Equipment blanks were not submitted for the project.

i. All results less than PQL?

Yes No NA (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

iii. Data quality or usability affected? (Please explain.)

Comments:

No, see above.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No NA (Please explain.) Comments:

Laboratory flags are defined in the Level II data packet.

**SGS North America Inc.**
**Alaska Division**
**Level II Laboratory Data Report**

| | |
|---|---|
| Project: | 1566 6 Mile |
| Client: | Shannon & Wilson-Fairbanks |
| SGS Work Order: | 1128347 |

Released by:

Stephen C. Ede

Alaska Division Technical Director

Stephen Ede
2012.08.17
15:20:34
-08'00'

**Contents:**

SGS North America Inc.

# Case Narrative

**Customer: SHANFBK** **Shannon & Wilson-Fairbanks**

**Project: 1128347** **1566 6 Mile**

Refer to the sample receipt form for information on sample condition.

**1106844 LCSD** **VXX/2387**

8260B - LCS/LCSD RPD for trichlorofluoromethane and cis-1,2-dichloroethene does not meet QC criteria. These analytes were not detected above the LOQ in the associated samples.

**1106846 CCV** **VMS/13035**

8260B - CCV recovery for cis-1,2-dichloroethene does not meet QC criteria (biased high). This analyte was not detected above the LOQ in the associated samples.

**1107555 MB** **VXX/23888]**

524.2 - Methylene chloride is detected in the MB greater than one-half the LOQ but less than the LOQ.

**1107561 IB** **VMS/13043]**

524.2 - Methylene chloride is detected in the IB greater than one-half the LOQ but less than the LOQ.

* QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to the associated field samples.

# Laboratory Analytical Report

Client: **Shannon & Wilson-Fairbanks**
2355 Hill Rd
Fairbanks, AK 99709

Attn: **Julie Keener**
T: (907)479-0600 F:(907)479-5691
jak@shanwil.com

Project: **1566 6 Mile**

Workorder No.: **1128347**

Certification:

This data package is in compliance with the terms and conditions of the contract, both technically and for completeness, unless otherwise noted on the sample data sheet(s) and/or case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory. If you have any questions regarding this report, or if we can be of further assistance, please contact your SGS Project Manager.

Jennifer Dawkins

Project Manager

**Contents (Bookmarked in PDF):**




SGS North America Inc. | Environmental Division 200 West Potter Drive Anchorage AK 99518 t(907)562.2343 f(907)561.5301
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Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (<http://www.sgs.com/terms_and_conditions.htm>), unless other written agreements have been accepted by both parties.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO 17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

| | |
|---|---|
| * | The analyte has exceeded allowable regulatory or control limits. |
| ! | Surrogate out of control limits. |
| B | Indicates the analyte is found in a blank associated with the sample. |
| CCV | Continuing Calibration Verification |
| CL | Control Limit |
| D | The analyte concentration is the result of a dilution. |
| DF | Dilution Factor |
| DL | Detection Limit (i.e., maximum method detection limit) |
| E | The analyte result is above the calibrated range. |
| F | Indicates value that is greater than or equal to the DL |
| GT | Greater Than |
| ICV | Initial Calibration Verification |
| J | The quantitation is an estimation. |
| JL | The analyte was positively identified, but the quantitation is a low estimation. |
| LCS(D) | Laboratory Control Spike (Duplicate) |
| LOD | Limit of Detection (i.e., 2xDL) |
| LOQ | Limit of Quantitation (i.e., reporting or practical quantitation limit) |
| LT | Less Than |
| M | A matrix effect was present. |
| MB | Method Blank |
| MS(D) | Matrix Spike (Duplicate) |
| ND | Indicates the analyte is not detected. |
| Q | QC parameter out of acceptance range. |
| R | Rejected |
| RL | Reporting Limit |
| RPD | Relative Percent Difference |
| U | Indicates the analyte was analyzed for but not detected. |

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content.
All DRO/RRO analyses are integrated per SOP.


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# SAMPLE SUMMARY

Print Date: 8/17/2012 3:04 pm

**Client Name: Shannon & Wilson-Fairbanks**
**Project Name: 1566 6 Mile**
**Workorder No.: 1128347**

## Analytical Methods

| Method Description | Analytical Method |
|---|---|
| Volatile Organic Compounds (W) FULL | SW8260B |
| Volatile Organics by 524.2 (DW) | EPA 524.2 |

## Sample ID Cross Reference

| Lab Sample ID | Client Sample ID |
|---|---|
| 1128347001 | 1566-080812-RW19 |
| 1128347002 | 1566-080812-RW18 |
| 1128347003 | 1566-080812-RW24 |
| 1128347004 | 1566-080812-RW17 |
| 1128347005 | Trip Blank 1 |
| 1128347006 | Trip Blank 2 |


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## Detectable Results Summary

Print Date: 8/17/2012 3:04 pm

Client Sample ID: **1566-080812-RW19**

SGS Ref. #: 1128347001

| Parameter | Result | Units |
|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | |
| 1,1-Dichloroethane | 0.470J | ug/L |
| Chloromethane | 0.190J | ug/L |
| cis-1,2-Dichloroethene | 1.24 | ug/L |
| trans-1,2-Dichloroethene | 2.24 | ug/L |
| Trichloroethene | 1.35 | ug/L |

Client Sample ID: **1566-080812-RW18**

SGS Ref. #: 1128347002

| Parameter | Result | Units |
|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | |
| 1,1-Dichloroethane | 0.380J | ug/L |
| cis-1,2-Dichloroethene | 0.530 | ug/L |
| Trichloroethene | 3.10 | ug/L |

Client Sample ID: **1566-080812-RW24**

SGS Ref. #: 1128347003

| Parameter | Result | Units |
|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | |
| cis-1,2-Dichloroethene | 0.890J | ug/L |
| Chloromethane | 0.420J | ug/L |
| Trichloroethene | 5.40 | ug/L |
| trans-1,2-Dichloroethene | 0.590J | ug/L |

Client Sample ID: **1566-080812-RW17**

SGS Ref. #: 1128347004

| Parameter | Result | Units |
|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | |
| 1,1-Dichloroethane | 0.310J | ug/L |
| Chloromethane | 0.260J | ug/L |
| cis-1,2-Dichloroethene | 0.960 | ug/L |
| trans-1,2-Dichloroethene | 0.970 | ug/L |
| Trichloroethene | 3.06 | ug/L |

Client Sample ID: **Trip Blank 2**

SGS Ref. #: 1128347006

| Parameter | Result | Units |
|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | |
| Chloromethane | 0.340J | ug/L |

Client Sample ID: **1566-080812-RW19**
SGS Ref. #: 1128347001
Project ID: 1566 6 Mile
Matrix: Drinking Water

Collection Date/Time: 08/08/12 15:39
Receipt Date/Time: 08/10/12 08:41

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,1-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethane | 0.470J | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichloropropane | 0.360 U | 0.500 | 0.180 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromo-3-chloropropane | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromoethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3,5-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,4-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Isopropyltoluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Benzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromodichloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromoform | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromomethane | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13043 | VXX23888 | |
| Carbon tetrachloride | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroform | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloromethane | 0.190J | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| cis-1,2-Dichloroethene | 1.24 | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |

Client Sample ID: **1566-080812-RW19**
SGS Ref. #: 1128347001
Project ID: 1566 6 Mile
Matrix: Drinking Water

Collection Date/Time: 08/08/12 15:39
Receipt Date/Time: 08/10/12 08:41

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromomethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dichlorodifluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Ethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Hexachlorobutadiene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Isopropylbenzene (Cumene) | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methylene chloride | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methyl-t-butyl ether | 1.00 U | 1.00 | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Naphthalene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Propylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| o-Xylene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| P & M -Xylene | 0.360 U | 0.500 | 0.180 | ug/L | 1 | VMS13043 | VXX23888 | |
| sec-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Styrene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| tert-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Tetrachloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Toluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Total Trihalomethanes | 1.20 U | 2.00 | 0.600 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,2-Dichloroethene | 2.24 | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichloroethene | 1.35 | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichlorofluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Vinyl chloride | 0.240 U | 0.400 | 0.120 | ug/L | 1 | VMS13043 | VXX23888 | |
| Xylenes (total) | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane-D4 <surr> | 113 | 70-130 | | % | 1 | VMS13043 | VXX23888 | |
| 4-Bromofluorobenzene <surr> | 99.1 | 70-130 | | % | 1 | VMS13043 | VXX23888 | |
| Toluene-d8 <surr> | 97.2 | 70-130 | | % | 1 | VMS13043 | VXX23888 | |

**Batch Information**

Analytical Batch: VMS13043
Analytical Method: EPA 524.2
Analysis Date/Time: 08/16/12 17:50
Dilution Factor: 1

Prep Batch: VXX23888
Prep Method: SW5030B
Prep Date/Time: 08/16/12 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128347001-A
Analyst: JDH

Client Sample ID: **1566-080812-RW18**
SGS Ref. #: 1128347002
Project ID: 1566 6 Mile
Matrix: Drinking Water

Collection Date/Time: 08/08/12 13:38
Receipt Date/Time: 08/10/12 08:41

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,1-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethane | 0.380J | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichloropropane | 0.360 U | 0.500 | 0.180 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromo-3-chloropropane | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromoethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3,5-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,4-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Isopropyltoluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Benzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromodichloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromoform | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromomethane | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13043 | VXX23888 | |
| Carbon tetrachloride | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroform | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| cis-1,2-Dichloroethene | 0.530 | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |

Client Sample ID: **1566-080812-RW18**
SGS Ref. #: 1128347002
Project ID: 1566 6 Mile
Matrix: Drinking Water

Collection Date/Time: 08/08/12 13:38
Receipt Date/Time: 08/10/12 08:41

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromomethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dichlorodifluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Ethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Hexachlorobutadiene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Isopropylbenzene (Cumene) | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methylene chloride | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methyl-t-butyl ether | 1.00 U | 1.00 | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Naphthalene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Propylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| o-Xylene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| P & M -Xylene | 0.360 U | 0.500 | 0.180 | ug/L | 1 | VMS13043 | VXX23888 | |
| sec-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Styrene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| tert-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Tetrachloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Toluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Total Trihalomethanes | 1.20 U | 2.00 | 0.600 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,2-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichloroethene | 3.10 | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichlorofluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Vinyl chloride | 0.240 U | 0.400 | 0.120 | ug/L | 1 | VMS13043 | VXX23888 | |
| Xylenes (total) | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane-D4 <surr> | 115 | 70-130 | | % | 1 | VMS13043 | VXX23888 | |
| 4-Bromofluorobenzene <surr> | 100 | 70-130 | | % | 1 | VMS13043 | VXX23888 | |
| Toluene-d8 <surr> | 97.8 | 70-130 | | % | 1 | VMS13043 | VXX23888 | |

**Batch Information**

Analytical Batch: VMS13043
Analytical Method: EPA 524.2
Analysis Date/Time: 08/16/12 18:22
Dilution Factor: 1

Prep Batch: VXX23888
Prep Method: SW5030B
Prep Date/Time: 08/16/12 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128347002-A
Analyst: JDH

Client Sample ID: **1566-080812-RW24**
SGS Ref. #: 1128347003
Project ID: 1566 6 Mile
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/08/12 12:29
Receipt Date/Time: 08/10/12 08:41

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,1,1-Trichloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,1,2,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,1,2-Trichloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,1-Dichloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,1-Dichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,1-Dichloropropene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2,3-Trichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2,3-Trichloropropane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2,4-Trichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2,4-Trimethylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2-Dibromo-3-chloropropane | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2-Dibromoethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2-Dichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2-Dichloropropane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,3,5-Trimethylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,3-Dichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,3-Dichloropropane | 0.240 U | 0.400 | 0.120 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,4-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| 2,2-Dichloropropane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 2-Butanone (MEK) | 6.20 U | 10.0 | 3.10 | ug/L | 1 | VMS13035 | VXX23875 | |
| 2-Chlorotoluene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 2-Hexanone | 6.20 U | 10.0 | 3.10 | ug/L | 1 | VMS13035 | VXX23875 | |
| 4-Chlorotoluene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 4-Isopropyltoluene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 4-Methyl-2-pentanone (MIBK) | 6.20 U | 10.0 | 3.10 | ug/L | 1 | VMS13035 | VXX23875 | |
| Benzene | 0.240 U | 0.400 | 0.120 | ug/L | 1 | VMS13035 | VXX23875 | |
| Bromobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Bromochloromethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Bromodichloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| Bromoform | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Bromomethane | 1.88 U | 3.00 | 0.940 | ug/L | 1 | VMS13035 | VXX23875 | |
| Carbon disulfide | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13035 | VXX23875 | |
| Carbon tetrachloride | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Chlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |

Client Sample ID: **1566-080812-RW24**
SGS Ref. #: 1128347003
Project ID: 1566 6 Mile
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/08/12 12:29
Receipt Date/Time: 08/10/12 08:41

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Chloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Chloroform | 0.600 U | 1.00 | 0.300 | ug/L | 1 | VMS13035 | VXX23875 | |
| Chloromethane | 0.420J | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| cis-1,2-Dichloroethene | 0.890J | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| cis-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| Dibromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| Dibromomethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Dichlorodifluoromethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Ethylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Hexachlorobutadiene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Isopropylbenzene (Cumene) | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Methylene chloride | 2.00 U | 5.00 | 1.00 | ug/L | 1 | VMS13035 | VXX23875 | |
| Methyl-t-butyl ether | 3.00 U | 5.00 | 1.50 | ug/L | 1 | VMS13035 | VXX23875 | |
| Naphthalene | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13035 | VXX23875 | |
| n-Butylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| n-Propylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| o-Xylene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| P & M -Xylene | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13035 | VXX23875 | |
| sec-Butylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Styrene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| tert-Butylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Tetrachloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Toluene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| trans-1,2-Dichloroethene | 0.590J | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| trans-1,3-Dichloropropene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Trichloroethene | 5.40 | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Trichlorofluoromethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Vinyl chloride | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Xylenes (total) | 1.88 U | 3.00 | 0.940 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2-Dichloroethane-D4 <surr> | 101 | 70-120 | | % | 1 | VMS13035 | VXX23875 | |
| 4-Bromofluorobenzene <surr> | 96.9 | 75-120 | | % | 1 | VMS13035 | VXX23875 | |
| Toluene-d8 <surr> | 97.8 | 85-120 | | % | 1 | VMS13035 | VXX23875 | |

Client Sample ID: **1566-080812-RW24**
SGS Ref. #: 1128347003
Project ID: 1566 6 Mile
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/08/12 12:29
Receipt Date/Time: 08/10/12 08:41

## Volatile Gas Chromatography/Mass Spectroscopy

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|

**Batch Information**

Analytical Batch: VMS13035
Analytical Method: SW8260B
Analysis Date/Time: 08/14/12 14:06
Dilution Factor: 1

Prep Batch: VXX23875
Prep Method: SW5030B
Prep Date/Time: 08/14/12 10:28

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128347003-A
Analyst: JPI

Client Sample ID: **1566-080812-RW17**
SGS Ref. #: 1128347004
Project ID: 1566 6 Mile
Matrix: Drinking Water

Collection Date/Time: 08/08/12 11:22
Receipt Date/Time: 08/10/12 08:41

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,1-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethane | 0.310J | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichloropropane | 0.360 U | 0.500 | 0.180 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromo-3-chloropropane | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromoethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3,5-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,4-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Isopropyltoluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Benzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromodichloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromoform | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromomethane | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13043 | VXX23888 | |
| Carbon tetrachloride | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroform | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloromethane | 0.260J | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| cis-1,2-Dichloroethene | 0.960 | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |

Client Sample ID: **1566-080812-RW17**
SGS Ref. #: 1128347004
Project ID: 1566 6 Mile
Matrix: Drinking Water

Collection Date/Time: 08/08/12 11:22
Receipt Date/Time: 08/10/12 08:41

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromomethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dichlorodifluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Ethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Hexachlorobutadiene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Isopropylbenzene (Cumene) | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methylene chloride | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methyl-t-butyl ether | 1.00 U | 1.00 | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Naphthalene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Propylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| o-Xylene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| P & M -Xylene | 0.360 U | 0.500 | 0.180 | ug/L | 1 | VMS13043 | VXX23888 | |
| sec-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Styrene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| tert-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Tetrachloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Toluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Total Trihalomethanes | 1.20 U | 2.00 | 0.600 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,2-Dichloroethene | 0.970 | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichloroethene | 3.06 | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichlorofluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Vinyl chloride | 0.240 U | 0.400 | 0.120 | ug/L | 1 | VMS13043 | VXX23888 | |
| Xylenes (total) | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane-D4 <surr> | 113 | 70-130 | | % | 1 | VMS13043 | VXX23888 | |
| 4-Bromofluorobenzene <surr> | 102 | 70-130 | | % | 1 | VMS13043 | VXX23888 | |
| Toluene-d8 <surr> | 97 | 70-130 | | % | 1 | VMS13043 | VXX23888 | |

**Batch Information**

Analytical Batch: VMS13043
Analytical Method: EPA 524.2
Analysis Date/Time: 08/16/12 18:53
Dilution Factor: 1

Prep Batch: VXX23888
Prep Method: SW5030B
Prep Date/Time: 08/16/12 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128347004-A
Analyst: JDH

Client Sample ID: **Trip Blank 1**
SGS Ref. #: 1128347005
Project ID: 1566 6 Mile
Matrix: Drinking Water

Collection Date/Time: 08/08/12 11:22
Receipt Date/Time: 08/10/12 08:41

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,1-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichloropropane | 0.360 U | 0.500 | 0.180 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromo-3-chloropropane | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromoethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3,5-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,4-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Isopropyltoluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Benzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromodichloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromoform | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromomethane | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13043 | VXX23888 | |
| Carbon tetrachloride | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroform | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| cis-1,2-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |

Client Sample ID: **Trip Blank 1**
SGS Ref. #: 1128347005
Project ID: 1566 6 Mile
Matrix: Drinking Water

Collection Date/Time: 08/08/12 11:22
Receipt Date/Time: 08/10/12 08:41

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromomethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dichlorodifluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Ethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Hexachlorobutadiene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Isopropylbenzene (Cumene) | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methylene chloride | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methyl-t-butyl ether | 1.00 U | 1.00 | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Naphthalene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Propylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| o-Xylene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| P & M -Xylene | 0.360 U | 0.500 | 0.180 | ug/L | 1 | VMS13043 | VXX23888 | |
| sec-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Styrene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| tert-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Tetrachloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Toluene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Total Trihalomethanes | 1.20 U | 2.00 | 0.600 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,2-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichlorofluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13043 | VXX23888 | |
| Vinyl chloride | 0.240 U | 0.400 | 0.120 | ug/L | 1 | VMS13043 | VXX23888 | |
| Xylenes (total) | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane-D4 <surr> | 110 | 70-130 | | % | 1 | VMS13043 | VXX23888 | |
| 4-Bromofluorobenzene <surr> | 102 | 70-130 | | % | 1 | VMS13043 | VXX23888 | |
| Toluene-d8 <surr> | 98.7 | 70-130 | | % | 1 | VMS13043 | VXX23888 | |

**Batch Information**

Analytical Batch: VMS13043
Analytical Method: EPA 524.2
Analysis Date/Time: 08/16/12 13:41
Dilution Factor: 1

Prep Batch: VXX23888
Prep Method: SW5030B
Prep Date/Time: 08/16/12 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128347005-A
Analyst: JDH

Client Sample ID: **Trip Blank 2**
SGS Ref. #: 1128347006
Project ID: 1566 6 Mile
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/08/12 11:22
Receipt Date/Time: 08/10/12 08:41

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,1,1-Trichloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,1,2,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,1,2-Trichloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,1-Dichloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,1-Dichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,1-Dichloropropene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2,3-Trichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2,3-Trichloropropane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2,4-Trichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2,4-Trimethylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2-Dibromo-3-chloropropane | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2-Dibromoethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2-Dichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2-Dichloropropane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,3,5-Trimethylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,3-Dichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,3-Dichloropropane | 0.240 U | 0.400 | 0.120 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,4-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| 2,2-Dichloropropane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 2-Butanone (MEK) | 6.20 U | 10.0 | 3.10 | ug/L | 1 | VMS13035 | VXX23875 | |
| 2-Chlorotoluene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 2-Hexanone | 6.20 U | 10.0 | 3.10 | ug/L | 1 | VMS13035 | VXX23875 | |
| 4-Chlorotoluene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 4-Isopropyltoluene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| 4-Methyl-2-pentanone (MIBK) | 6.20 U | 10.0 | 3.10 | ug/L | 1 | VMS13035 | VXX23875 | |
| Benzene | 0.240 U | 0.400 | 0.120 | ug/L | 1 | VMS13035 | VXX23875 | |
| Bromobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Bromochloromethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Bromodichloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| Bromoform | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Bromomethane | 1.88 U | 3.00 | 0.940 | ug/L | 1 | VMS13035 | VXX23875 | |
| Carbon disulfide | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13035 | VXX23875 | |
| Carbon tetrachloride | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Chlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |

Client Sample ID: **Trip Blank 2**
SGS Ref. #: 1128347006
Project ID: 1566 6 Mile
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/08/12 11:22
Receipt Date/Time: 08/10/12 08:41

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|
| Chloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Chloroform | 0.600 U | 1.00 | 0.300 | ug/L | 1 | VMS13035 | VXX23875 | |
| Chloromethane | 0.340J | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| cis-1,2-Dichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| cis-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| Dibromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 1 | VMS13035 | VXX23875 | |
| Dibromomethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Dichlorodifluoromethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Ethylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Hexachlorobutadiene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Isopropylbenzene (Cumene) | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Methylene chloride | 2.00 U | 5.00 | 1.00 | ug/L | 1 | VMS13035 | VXX23875 | |
| Methyl-t-butyl ether | 3.00 U | 5.00 | 1.50 | ug/L | 1 | VMS13035 | VXX23875 | |
| Naphthalene | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13035 | VXX23875 | |
| n-Butylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| n-Propylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| o-Xylene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| P & M -Xylene | 1.24 U | 2.00 | 0.620 | ug/L | 1 | VMS13035 | VXX23875 | |
| sec-Butylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Styrene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| tert-Butylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Tetrachloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Toluene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| trans-1,2-Dichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| trans-1,3-Dichloropropene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Trichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Trichlorofluoromethane | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Vinyl chloride | 0.620 U | 1.00 | 0.310 | ug/L | 1 | VMS13035 | VXX23875 | |
| Xylenes (total) | 1.88 U | 3.00 | 0.940 | ug/L | 1 | VMS13035 | VXX23875 | |
| 1,2-Dichloroethane-D4 <surr> | 101 | 70-120 | | % | 1 | VMS13035 | VXX23875 | |
| 4-Bromofluorobenzene <surr> | 114 | 75-120 | | % | 1 | VMS13035 | VXX23875 | |
| Toluene-d8 <surr> | 103 | 85-120 | | % | 1 | VMS13035 | VXX23875 | |

Client Sample ID: **Trip Blank 2**
SGS Ref. #: 1128347006
Project ID: 1566 6 Mile
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/08/12 11:22
Receipt Date/Time: 08/10/12 08:41

## Volatile Gas Chromatography/Mass Spectroscopy

| Parameter | Result | LOQ/CL | DL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|---|

**Batch Information**

Analytical Batch: VMS13035
Analytical Method: SW8260B
Analysis Date/Time: 08/14/12 13:11
Dilution Factor: 1

Prep Batch: VXX23875
Prep Method: SW5030B
Prep Date/Time: 08/14/12 10:28

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128347006-A
Analyst: JPI

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1106842 Method Blank | | **Printed Date/Time** | 08/17/2012 15:04 |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Prep Batch** | VXX23875 |
| **Project Name/#** | 1566 6 Mile | | **Method** | SW5030B |
| **Matrix** | Water (Surface, Eff., Ground) | | **Date** | 08/14/2012 |

QC results affect the following production samples:

1128347003, 1128347006

| Parameter | Results | LOQ/CL | DL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/14/12 |
| 1,1,1-Trichloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,1,2,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/14/12 |
| 1,1,2-Trichloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,1-Dichloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,1-Dichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,1-Dichloropropene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,2,3-Trichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,2,3-Trichloropropane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,2,4-Trichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,2,4-Trimethylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,2-Dibromo-3-chloropropane | 1.24 U | 2.00 | 0.620 | ug/L | 08/14/12 |
| 1,2-Dibromoethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,2-Dichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,2-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/14/12 |
| 1,2-Dichloropropane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,3,5-Trimethylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,3-Dichlorobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 1,3-Dichloropropane | 0.240 U | 0.400 | 0.120 | ug/L | 08/14/12 |
| 1,4-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/14/12 |
| 2,2-Dichloropropane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 2-Butanone (MEK) | 6.20 U | 10.0 | 3.10 | ug/L | 08/14/12 |
| 2-Chlorotoluene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 2-Hexanone | 6.20 U | 10.0 | 3.10 | ug/L | 08/14/12 |
| 4-Chlorotoluene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 4-Isopropyltoluene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| 4-Methyl-2-pentanone (MIBK) | 6.20 U | 10.0 | 3.10 | ug/L | 08/14/12 |
| Benzene | 0.240 U | 0.400 | 0.120 | ug/L | 08/14/12 |
| Bromobenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Bromochloromethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Bromodichloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/14/12 |
| Bromoform | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Bromomethane | 1.88 U | 3.00 | 0.940 | ug/L | 08/14/12 |
| Carbon disulfide | 1.24 U | 2.00 | 0.620 | ug/L | 08/14/12 |
| Carbon tetrachloride | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Chlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/14/12 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1106842 Method Blank | | **Printed Date/Time** | 08/17/2012 15:04 |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Prep Batch** | VXX23875 |
| **Project Name/#** | 1566 6 Mile | | **Method** | SW5030B |
| **Matrix** | Water (Surface, Eff., Ground) | | **Date** | 08/14/2012 |

| Parameter | Results | LOQ/CL | DL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| Chloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Chloroform | 0.600 U | 1.00 | 0.300 | ug/L | 08/14/12 |
| Chloromethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| cis-1,2-Dichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| cis-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 08/14/12 |
| Dibromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/14/12 |
| Dibromomethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Dichlorodifluoromethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Ethylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Hexachlorobutadiene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Isopropylbenzene (Cumene) | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Methylene chloride | 2.00 U | 5.00 | 1.00 | ug/L | 08/14/12 |
| Methyl-t-butyl ether | 3.00 U | 5.00 | 1.50 | ug/L | 08/14/12 |
| Naphthalene | 1.24 U | 2.00 | 0.620 | ug/L | 08/14/12 |
| n-Butylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| n-Propylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| o-Xylene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| P & M -Xylene | 1.24 U | 2.00 | 0.620 | ug/L | 08/14/12 |
| sec-Butylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Styrene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| tert-Butylbenzene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Tetrachloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Toluene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| trans-1,2-Dichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| trans-1,3-Dichloropropene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Trichloroethene | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Trichlorofluoromethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Vinyl chloride | 0.620 U | 1.00 | 0.310 | ug/L | 08/14/12 |
| Xylenes (total) | 1.88 U | 3.00 | 0.940 | ug/L | 08/14/12 |
| **Surrogates** | | | | | |
| 1,2-Dichloroethane-D4 <surr> | 105 | 70-120 | | % | 08/14/12 |
| 4-Bromofluorobenzene <surr> | 110 | 75-120 | | % | 08/14/12 |
| Toluene-d8 <surr> | 99 | 85-120 | | % | 08/14/12 |

| | |
|---|---|
| **Batch** | VMS13035 |
| **Method** | SW8260B |
| **Instrument** | HP 5890 Series II MS1 VJA |

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 1107555 | Method Blank | **Printed Date/Time** | | 08/17/2012 15:04 |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Prep** | **Batch** | VXX23888 |
| **Project Name/#** | 1566 6 Mile | | | **Method** | SW5030B |
| **Matrix** | Drinking Water | | | **Date** | 08/16/2012 |

QC results affect the following production samples:

1128347001, 1128347002, 1128347004, 1128347005

| Parameter | Results | LOQ/CL | DL | Units | Analysis Date |
|---|---|---|---|---|---|

**Volatile Gas Chromatography/Mass Spectroscopy**

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1107555 | Method Blank | **Printed Date/Time** | 08/17/2012 15:04 |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Prep Batch** | VXX23888 |
| **Project Name/#** | 1566 6 Mile | | **Method** | SW5030B |
| **Matrix** | Drinking Water | | **Date** | 08/16/2012 |

| Parameter | Results | LOQ/CL | DL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,1,1-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,1,2,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,1,2-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,1-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,1-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,1-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2,3-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2,3-Trichloropropane | 0.360 U | 0.500 | 0.180 | ug/L | 08/16/12 |
| 1,2,4-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2,4-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2-Dibromo-3-chloropropane | 1.24 U | 2.00 | 0.620 | ug/L | 08/16/12 |
| 1,2-Dibromoethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,3,5-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,3-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,3-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,4-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 2,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 2-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 4-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 4-Isopropyltoluene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Benzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Bromobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Bromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Bromodichloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Bromoform | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Bromomethane | 1.24 U | 2.00 | 0.620 | ug/L | 08/16/12 |
| Carbon tetrachloride | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Chlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Chloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/16/12 |
| Chloroform | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Chloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| cis-1,2-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| cis-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Dibromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Dibromomethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1107555 | Method Blank | **Printed Date/Time** | 08/17/2012 15:04 |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Prep Batch** | VXX23888 |
| **Project Name/#** | 1566 6 Mile | | **Method** | SW5030B |
| **Matrix** | Drinking Water | | **Date** | 08/16/2012 |

| Parameter | Results | LOQ/CL | DL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| Dichlorodifluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Ethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Hexachlorobutadiene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Isopropylbenzene (Cumene) | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Methylene chloride | 0.260J | 0.500 | 0.150 | ug/L | 08/16/12 |
| Methyl-t-butyl ether | 1.00 U | 1.00 | 0.500 | ug/L | 08/16/12 |
| Naphthalene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| n-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| n-Propylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| o-Xylene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| P & M -Xylene | 0.360 U | 0.500 | 0.180 | ug/L | 08/16/12 |
| sec-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Styrene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| tert-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Tetrachloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Toluene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| trans-1,2-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| trans-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Trichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Trichlorofluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Vinyl chloride | 0.240 U | 0.400 | 0.120 | ug/L | 08/16/12 |
| **Surrogates** | | | | | |
| 1,2-Dichloroethane-D4 <surr> | 106 | 70-130 | | % | 08/16/12 |
| 4-Bromofluorobenzene <surr> | 100 | 70-130 | | % | 08/16/12 |
| Toluene-d8 <surr> | 100 | 70-130 | | % | 08/16/12 |

| | |
|---|---|
| **Batch** | VMS13043 |
| **Method** | EPA 524.2 |
| **Instrument** | Agilent 7890-75MS |

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 1106843 | Lab Control Sample | **Printed Date/Time** | 08/17/2012 | 15:04 |
| | 1106844 | Lab Control Sample Duplicate | **Prep Batch** | VXX23875 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 1566 6 Mile | | **Date** | 08/14/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

QC results affect the following production samples:

1128347003, 1128347006

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | LCS | 30.0 | 100 | ( 80-130 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 30.7 | 102 | | 2 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,1,1-Trichloroethane | LCS | 30.6 | 102 | ( 65-130 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 31.9 | 106 | | 4 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,1,2,2-Tetrachloroethane | LCS | 29.4 | 98 | ( 65-130 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 27.4 | 91 | | 7 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,1,2-Trichloroethane | LCS | 31.9 | 106 | ( 75-125 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 31.7 | 106 | | 1 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,1-Dichloroethane | LCS | 28.1 | 94 | ( 70-135 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 26.7 | 89 | | 5 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,1-Dichloroethene | LCS | 28.3 | 94 | ( 70-130 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 27.3 | 91 | | 4 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,1-Dichloropropene | LCS | 31.6 | 105 | ( 75-130 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 31.7 | 106 | | 0 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,2,3-Trichlorobenzene | LCS | 30.0 | 100 | ( 55-140 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 31.0 | 103 | | 3 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,2,3-Trichloropropane | LCS | 31.4 | 105 | ( 75-125 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 30.6 | 102 | | 3 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,2,4-Trichlorobenzene | LCS | 29.2 | 97 | ( 65-135 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 28.6 | 95 | | 2 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,2,4-Trimethylbenzene | LCS | 29.8 | 99 | ( 75-130 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 28.8 | 96 | | 4 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,2-Dibromo-3-chloropropane | LCS | 32.1 | 107 | ( 50-130 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.5 | 98 | | 9 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,2-Dibromoethane | LCS | 31.8 | 106 | ( 80-120 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 32.7 | 109 | | 3 | (< 20 ) | 30 ug/L | 08/14/2012 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1106843 Lab Control Sample | **Printed Date/Time** | 08/17/2012 | 15:04 |
| | 1106844 Lab Control Sample Duplicate | **Prep Batch** | VXX23875 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 1566 6 Mile | **Date** | 08/14/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| 1,2-Dichlorobenzene | LCS | 29.2 | 98 | ( 70-120 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 28.7 | 96 | | 2 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,2-Dichloroethane | LCS | 29.7 | 99 | ( 70-130 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.4 | 98 | | 1 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,2-Dichloropropane | LCS | 30.2 | 101 | ( 75-125 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.9 | 100 | | 1 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,3,5-Trimethylbenzene | LCS | 30.1 | 100 | ( 75-130 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 28.5 | 95 | | 5 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,3-Dichlorobenzene | LCS | 29.7 | 99 | ( 75-125 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.2 | 97 | | 2 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,3-Dichloropropane | LCS | 29.8 | 99 | ( 75-125 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.5 | 98 | | 1 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 1,4-Dichlorobenzene | LCS | 29.4 | 98 | ( 75-125 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.4 | 98 | | 0 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 2,2-Dichloropropane | LCS | 31.4 | 105 | ( 70-135 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 33.0 | 110 | | 5 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 2-Butanone (MEK) | LCS | 102 | 114 | ( 30-150 ) | | | 90 ug/L | 08/14/2012 |
| | LCSD | 100 | 111 | | 2 | (< 20 ) | 90 ug/L | 08/14/2012 |
| 2-Chlorotoluene | LCS | 28.7 | 96 | ( 75-125 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 27.0 | 90 | | 6 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 2-Hexanone | LCS | 95.5 | 106 | ( 55-130 ) | | | 90 ug/L | 08/14/2012 |
| | LCSD | 87.8 | 98 | | 8 | (< 20 ) | 90 ug/L | 08/14/2012 |
| 4-Chlorotoluene | LCS | 29.4 | 98 | ( 75-130 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 27.5 | 92 | | 7 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 4-Isopropyltoluene | LCS | 31.0 | 103 | ( 75-130 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.7 | 99 | | 4 | (< 20 ) | 30 ug/L | 08/14/2012 |
| 4-Methyl-2-pentanone (MIBK) | LCS | 99.7 | 111 | ( 60-135 ) | | | 90 ug/L | 08/14/2012 |
| | LCSD | 104 | 116 | | 4 | (< 20 ) | 90 ug/L | 08/14/2012 |

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|---|---|---|---|---|
| **SGS Ref.#** | 1106843 Lab Control Sample | **Printed Date/Time** | 08/17/2012 | 15:04 |
| | 1106844 Lab Control Sample Duplicate | **Prep Batch** | VXX23875 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 1566 6 Mile | **Date** | 08/14/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | | |
| Benzene | LCS | 31.1 | 104 | ( 80-120 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 30.3 | 101 | | 2 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Bromobenzene | LCS | 30.2 | 101 | ( 75-125 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.8 | 99 | | 1 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Bromochloromethane | LCS | 28.8 | 96 | ( 65-130 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 33.2 | 111 | | 14 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Bromodichloromethane | LCS | 29.9 | 100 | ( 75-120 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.4 | 98 | | 2 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Bromoform | LCS | 31.4 | 105 | ( 70-130 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 31.5 | 105 | | 0 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Bromomethane | LCS | 31.1 | 104 | ( 30-145 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 32.1 | 107 | | 3 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Carbon disulfide | LCS | 42.2 | 94 | ( 35-160 ) | | | | 45 ug/L | 08/14/2012 |
| | LCSD | 40.8 | 91 | | 3 | | (< 20 ) | 45 ug/L | 08/14/2012 |
| Carbon tetrachloride | LCS | 30.2 | 101 | ( 65-140 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 33.2 | 111 | | 9 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Chlorobenzene | LCS | 29.7 | 99 | ( 80-120 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 31.2 | 104 | | 5 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Chloroethane | LCS | 31.7 | 106 | ( 60-135 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 30.5 | 102 | | 4 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Chloroform | LCS | 27.6 | 92 | ( 65-135 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.1 | 97 | | 5 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Chloromethane | LCS | 31.6 | 105 | ( 40-125 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 32.9 | 110 | | 4 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| cis-1,2-Dichloroethene | LCS | 36.7 | 122 | ( 70-125 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 28.5 | 95 | | 25 | * | (< 20 ) | 30 ug/L | 08/14/2012 |
| cis-1,3-Dichloropropene | LCS | 33.5 | 112 | ( 70-130 ) | | | | 30 ug/L | 08/14/2012 |

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|---|---|---|---|---|
| **SGS Ref.#** | 1106843 Lab Control Sample | **Printed Date/Time** | 08/17/2012 | 15:04 |
| | 1106844 Lab Control Sample Duplicate | **Prep Batch** | VXX23875 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 1566 6 Mile | **Date** | 08/14/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| | LCSD | 33.1 | 110 | | 1 | (< 20 ) | 30 ug/L | 08/14/2012 |
| Dibromochloromethane | LCS | 31.6 | 105 | ( 60-135 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 32.4 | 108 | | 3 | (< 20 ) | 30 ug/L | 08/14/2012 |
| Dibromomethane | LCS | 31.0 | 103 | ( 75-125 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 31.8 | 106 | | 3 | (< 20 ) | 30 ug/L | 08/14/2012 |
| Dichlorodifluoromethane | LCS | 30.2 | 101 | ( 30-155 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.2 | 98 | | 3 | (< 20 ) | 30 ug/L | 08/14/2012 |
| Ethylbenzene | LCS | 30.6 | 102 | ( 75-125 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 30.5 | 102 | | 0 | (< 20 ) | 30 ug/L | 08/14/2012 |
| Hexachlorobutadiene | LCS | 27.8 | 93 | ( 50-140 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 26.8 | 89 | | 4 | (< 20 ) | 30 ug/L | 08/14/2012 |
| Isopropylbenzene (Cumene) | LCS | 30.3 | 101 | ( 75-125 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 31.1 | 104 | | 3 | (< 20 ) | 30 ug/L | 08/14/2012 |
| Methylene chloride | LCS | 30.3 | 101 | ( 55-140 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.0 | 97 | | 4 | (< 20 ) | 30 ug/L | 08/14/2012 |
| Methyl-t-butyl ether | LCS | 44.6 | 99 | ( 65-125 ) | | | 45 ug/L | 08/14/2012 |
| | LCSD | 42.7 | 95 | | 4 | (< 20 ) | 45 ug/L | 08/14/2012 |
| Naphthalene | LCS | 33.5 | 112 | ( 55-140 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 32.0 | 107 | | 5 | (< 20 ) | 30 ug/L | 08/14/2012 |
| n-Butylbenzene | LCS | 31.2 | 104 | ( 70-135 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 28.7 | 96 | | 8 | (< 20 ) | 30 ug/L | 08/14/2012 |
| n-Propylbenzene | LCS | 30.1 | 100 | ( 70-130 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 27.6 | 92 | | 9 | (< 20 ) | 30 ug/L | 08/14/2012 |
| o-Xylene | LCS | 30.3 | 101 | ( 80-120 ) | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.9 | 100 | | 1 | (< 20 ) | 30 ug/L | 08/14/2012 |
| P & M -Xylene | LCS | 61.8 | 103 | ( 75-130 ) | | | 60 ug/L | 08/14/2012 |
| | LCSD | 62.4 | 104 | | 1 | (< 20 ) | 60 ug/L | 08/14/2012 |

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|---|---|---|---|---|
| **SGS Ref.#** | 1106843 Lab Control Sample | **Printed Date/Time** | 08/17/2012 | 15:04 |
| | 1106844 Lab Control Sample Duplicate | **Prep Batch** | VXX23875 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 1566 6 Mile | **Date** | 08/14/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | | |
| sec-Butylbenzene | LCS | 30.0 | 100 | ( 70-125 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 28.1 | 94 | | 7 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Styrene | LCS | 30.9 | 103 | ( 65-135 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 31.1 | 104 | | 1 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| tert-Butylbenzene | LCS | 30.1 | 100 | ( 70-130 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 29.7 | 99 | | 1 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Tetrachloroethene | LCS | 29.7 | 99 | ( 45-150 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 30.8 | 103 | | 4 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Toluene | LCS | 29.9 | 100 | ( 75-120 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 30.0 | 100 | | 0 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| trans-1,2-Dichloroethene | LCS | 29.0 | 97 | ( 60-140 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 27.5 | 92 | | 5 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| trans-1,3-Dichloropropene | LCS | 31.4 | 105 | ( 55-140 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 30.9 | 103 | | 2 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Trichloroethene | LCS | 29.5 | 98 | ( 70-125 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 32.8 | 109 | | 11 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Trichlorofluoromethane | LCS | 25.0 | 83 | ( 60-145 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 32.2 | 107 | | 25 | * | (< 20 ) | 30 ug/L | 08/14/2012 |
| Vinyl chloride | LCS | 32.6 | 109 | ( 50-145 ) | | | | 30 ug/L | 08/14/2012 |
| | LCSD | 31.2 | 104 | | 4 | | (< 20 ) | 30 ug/L | 08/14/2012 |
| Xylenes (total) | LCS | 92.0 | 102 | ( 80-120 ) | | | | 90 ug/L | 08/14/2012 |
| | LCSD | 92.2 | 102 | | 0 | | (< 20 ) | 90 ug/L | 08/14/2012 |
| **Surrogates** | | | | | | | | | |
| 1,2-Dichloroethane-D4 <surr> | LCS | | 99 | ( 70-120 ) | | | | | 08/14/2012 |
| | LCSD | | 97 | | 3 | | | | 08/14/2012 |
| 4-Bromofluorobenzene <surr> | LCS | | 98 | ( 75-120 ) | | | | | 08/14/2012 |
| | LCSD | | 91 | | 7 | | | | 08/14/2012 |
| Toluene-d8 <surr> | LCS | | 101 | ( 85-120 ) | | | | | 08/14/2012 |

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|---|---|---|---|---|---|
| **SGS Ref.#** | 1106843 | Lab Control Sample | **Printed Date/Time** | 08/17/2012 | 15:04 |
| | 1106844 | Lab Control Sample Duplicate | **Prep** **Batch** | VXX23875 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 1566 6 Mile | | **Date** | 08/14/2012 | |
| **Matrix** | Water (Surface, Eff., Ground) | | | | |

| Parameter | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | |
| | LCSD | 102 | | 1 | | | 08/14/2012 |

| | |
|---|---|
| **Batch** | VMS13035 |
| **Method** | SW8260B |
| **Instrument** | HP 5890 Series II MS1 VJA |

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|---|---|---|---|---|---|
| **SGS Ref.#** | 1107556 | Lab Control Sample | **Printed Date/Time** | 08/17/2012 | 15:04 |
| | 1107557 | Lab Control Sample Duplicate | **Prep** **Batch** | VXX23888 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 1566 6 Mile | | **Date** | 08/16/2012 | |
| **Matrix** | Drinking Water | | | | |

QC results affect the following production samples:

1128347001, 1128347002, 1128347004, 1128347005

| Parameter | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|

**Volatile Gas Chromatography/Mass Spectroscopy**

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1107556 Lab Control Sample | **Printed Date/Time** | 08/17/2012 | 15:04 |
| | 1107557 Lab Control Sample Duplicate | **Prep Batch** | VXX23888 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 1566 6 Mile | **Date** | 08/16/2012 | |
| **Matrix** | Drinking Water | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | LCS | 32.8 | 109 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.4 | 111 | | 2 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,1,1-Trichloroethane | LCS | 33.6 | 112 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.4 | 111 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,1,2,2-Tetrachloroethane | LCS | 29.5 | 98 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.2 | 104 | | 5 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,1,2-Trichloroethane | LCS | 30.6 | 102 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.7 | 106 | | 4 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,1-Dichloroethane | LCS | 32.0 | 107 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.9 | 106 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,1-Dichloroethene | LCS | 32.0 | 107 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.6 | 105 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,1-Dichloropropene | LCS | 32.1 | 107 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.2 | 107 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2,3-Trichlorobenzene | LCS | 28.9 | 96 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.0 | 103 | | 7 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2,3-Trichloropropane | LCS | 29.7 | 99 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.4 | 105 | | 5 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2,4-Trichlorobenzene | LCS | 29.6 | 99 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.1 | 104 | | 5 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2,4-Trimethylbenzene | LCS | 32.6 | 109 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.7 | 109 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2-Dibromo-3-chloropropane | LCS | 30.5 | 102 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.9 | 110 | | 8 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2-Dibromoethane | LCS | 31.4 | 105 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.9 | 110 | | 5 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2-Dichlorobenzene | LCS | 29.9 | 100 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 30.4 | 101 | | 2 | (< 30 ) | 30 ug/L | 08/16/2012 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1107556 Lab Control Sample | **Printed Date/Time** | 08/17/2012 | 15:04 |
| | 1107557 Lab Control Sample Duplicate | **Prep Batch** | VXX23888 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 1566 6 Mile | **Date** | 08/16/2012 | |
| **Matrix** | Drinking Water | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| 1,2-Dichloroethane | LCS | 32.2 | 107 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.7 | 109 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2-Dichloropropane | LCS | 31.2 | 104 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.4 | 105 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,3,5-Trimethylbenzene | LCS | 32.3 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.5 | 108 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,3-Dichlorobenzene | LCS | 30.5 | 102 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 30.9 | 103 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,3-Dichloropropane | LCS | 30.6 | 102 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.0 | 107 | | 4 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,4-Dichlorobenzene | LCS | 30.4 | 101 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 30.4 | 101 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 2,2-Dichloropropane | LCS | 33.9 | 113 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.7 | 112 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 2-Chlorotoluene | LCS | 31.0 | 103 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.0 | 103 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 4-Chlorotoluene | LCS | 31.8 | 106 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.0 | 103 | | 3 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 4-Isopropyltoluene | LCS | 33.1 | 110 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.4 | 111 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Benzene | LCS | 31.4 | 105 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.4 | 105 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Bromobenzene | LCS | 29.9 | 100 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 30.3 | 101 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Bromochloromethane | LCS | 30.8 | 103 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.0 | 103 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Bromodichloromethane | LCS | 33.0 | 110 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1107556 Lab Control Sample | **Printed Date/Time** | 08/17/2012 | 15:04 |
| | 1107557 Lab Control Sample Duplicate | **Prep Batch** | VXX23888 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 1566 6 Mile | **Date** | 08/16/2012 | |
| **Matrix** | Drinking Water | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| | LCSD | 33.2 | 111 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Bromoform | LCS | 33.0 | 110 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 35.2 | 117 | | 6 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Bromomethane | LCS | 27.7 | 93 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 26.4 | 88 | | 5 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Carbon tetrachloride | LCS | 34.4 | 115 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 34.2 | 114 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Chlorobenzene | LCS | 30.8 | 103 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.4 | 105 | | 2 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Chloroethane | LCS | 30.6 | 102 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 29.8 | 99 | | 3 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Chloroform | LCS | 29.7 | 99 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 29.8 | 99 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Chloromethane | LCS | 29.6 | 99 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 30.0 | 100 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| cis-1,2-Dichloroethene | LCS | 31.2 | 104 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.3 | 104 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| cis-1,3-Dichloropropene | LCS | 32.7 | 109 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.0 | 110 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Dibromochloromethane | LCS | 33.2 | 111 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 34.1 | 114 | | 3 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Dibromomethane | LCS | 31.1 | 104 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.8 | 106 | | 2 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Dichlorodifluoromethane | LCS | 31.8 | 106 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 30.6 | 102 | | 4 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Ethylbenzene | LCS | 31.3 | 104 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.4 | 105 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1107556 Lab Control Sample | **Printed Date/Time** | 08/17/2012 | 15:04 |
| | 1107557 Lab Control Sample Duplicate | **Prep Batch** | VXX23888 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 1566 6 Mile | **Date** | 08/16/2012 | |
| **Matrix** | Drinking Water | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| Hexachlorobutadiene | LCS | 30.8 | 103 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.4 | 108 | | 5 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Isopropylbenzene (Cumene) | LCS | 33.2 | 111 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.2 | 111 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Methylene chloride | LCS | 32.5 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.4 | 108 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Methyl-t-butyl ether | LCS | 46.8 | 104 | ( 70-130 ) | | | 45 ug/L | 08/16/2012 |
| | LCSD | 48.1 | 107 | | 3 | (< 30 ) | 45 ug/L | 08/16/2012 |
| Naphthalene | LCS | 31.7 | 106 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.8 | 113 | | 6 | (< 30 ) | 30 ug/L | 08/16/2012 |
| n-Butylbenzene | LCS | 32.3 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.4 | 108 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| n-Propylbenzene | LCS | 31.7 | 106 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.8 | 106 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| o-Xylene | LCS | 32.3 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.1 | 110 | | 2 | (< 30 ) | 30 ug/L | 08/16/2012 |
| P & M -Xylene | LCS | 65.3 | 109 | ( 70-130 ) | | | 60 ug/L | 08/16/2012 |
| | LCSD | 65.8 | 110 | | 1 | (< 30 ) | 60 ug/L | 08/16/2012 |
| sec-Butylbenzene | LCS | 32.4 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.7 | 109 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Styrene | LCS | 33.3 | 111 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.1 | 110 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| tert-Butylbenzene | LCS | 31.6 | 105 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.0 | 107 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Tetrachloroethene | LCS | 31.7 | 106 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.1 | 107 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Toluene | LCS | 30.9 | 103 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.4 | 105 | | 2 | (< 30 ) | 30 ug/L | 08/16/2012 |

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 1107556 | Lab Control Sample | **Printed Date/Time** | 08/17/2012 | 15:04 |
| | 1107557 | Lab Control Sample Duplicate | **Prep Batch** | VXX23888 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 1566 6 Mile | | **Date** | 08/16/2012 | |
| **Matrix** | Drinking Water | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| trans-1,2-Dichloroethene | LCS | 31.3 | 104 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.2 | 104 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| trans-1,3-Dichloropropene | LCS | 32.5 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.8 | 113 | | 4 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Trichloroethene | LCS | 31.5 | 105 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.7 | 106 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Trichlorofluoromethane | LCS | 32.5 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.5 | 105 | | 3 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Vinyl chloride | LCS | 30.6 | 102 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 29.6 | 99 | | 3 | (< 30 ) | 30 ug/L | 08/16/2012 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 <surr> | LCS | | 103 | ( 70-130 ) | | | | 08/16/2012 |
| | LCSD | | 103 | | 0 | | | 08/16/2012 |
| 4-Bromofluorobenzene <surr> | LCS | | 100 | ( 70-130 ) | | | | 08/16/2012 |
| | LCSD | | 98 | | 2 | | | 08/16/2012 |
| Toluene-d8 <surr> | LCS | | 101 | ( 70-130 ) | | | | 08/16/2012 |
| | LCSD | | 100 | | 1 | | | 08/16/2012 |

| | |
|---|---|
| **Batch** | VMS13043 |
| **Method** | EPA 524.2 |
| **Instrument** | Agilent 7890-75MS |

1128347



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# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Laboratory SGS
Attn:

**Analysis Parameters/Sample Container Description**
(include preservative if used)

| Sample Identity | Lab No. | Time | Date Sampled | Comp. | Grab | VOC (EPA 524.2) | VOC (EPA SW8260B) | | | | | Total Number of Containers | Remarks/Matrix |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1566-080812-RW19 | (1) A-C | ~~13:39~~ 15:39 | 8-8-12 | | X | 3 | | | | | | 3 | DW |
| 1566-080812-RW18 | (2) A-C | 13:38 | 8-8-12 | | X | 3 | | | | | | 3 | DW |
| 1566-080812-MW24 | (3) A-C | 12:29 | 8-8-12 | | X | ~~3~~ | 3 | | | | | 3 | GW |
| 1566-080812-RW17 | (4) A-C | 11:22 | 8-8-12 | | X | 3 | | | | | | 3 | DW |
| 1566-080912-RW20 | Cancel | 12:20 | 8-9-12 | | X | 3 | | | | | | 3 | DW |
| 1566-080912-RW21 | Cancel | 12:00 | 8-9-12 | | X | 3 | | | | | | 3 | DW |
| TRIPBLANK 1 | (5) A-C | | | | | ✓ | | | | | | 1 | |
| TRIP BLANK 2 | (6) A-C | | | | | | ✓ | | | | | 1 | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| Project Information | | Sample Receipt | |
|---|---|---|---|
| Project Number: 1566 | | Total Number of Containers | 18 |
| Project Name: 6-Mile | | COC Seals/Intact? Y/N/NA | |
| Contact: JAK | | Received Good Cond./Cold | |
| Ongoing Project? Yes ☑ No ☐ | | Delivery Method: Hand | |
| Sampler: HRZ | | (attach shipping bill, if any) | |

| Relinquished By: 1. | Relinquished By: 2. | Relinquished By: 3. |
|---|---|---|
| Signature: Time: 12:50 | Signature: Time: 1500 | Signature: Time: |
| Printed Name: Heather Zrucky Date: 8-9-12 | Printed Name: Sen D Date: 8-9-12 | Printed Name: Date: |
| Company: SWI | Company: SGS | Company: |

| Received By: 1. | Received By: 2. | Received By: 3. |
|---|---|---|
| Signature: Time: 1250 | Signature: Time: | Signature: Time: 0841 |
| Printed Name: Sen Daudlers Date: 8-9-12 | Printed Name: Date: | Printed Name: Simone Casu Date: 8/10/12 |
| Company: SGS | Company: | Company: SGS Anchorage |

| Instructions | |
|---|---|
| Requested Turnaround Time: Standard | |
| Special Instructions: Bill to Shannon & Wilson | |

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

TB = 3.5°C  ID 204

No. 31290

SGS

1128347

# SAMPLE RECEIPT FORM

| Review Criteria: | Condition: | Comments/Action Taken: |
|---|---|---|
| Were **custody seals** intact? Note # & location, if applicable. | Yes No (N/A) | |
| COC accompanied samples? | (Yes) No N/A | |
| **Temperature blank** compliant* (i.e., 0-6°C after correction factor)? | (Yes) No N/A | |
| * *Note: Exemption permitted for chilled samples collected less than 8 hours ago.* | | |
| Cooler ID: 1 @ 3.5 w/ Therm.ID: 204 | | |
| Cooler ID: ____ @ ____ w/ Therm.ID: ____ | | |
| Cooler ID: ____ @ ____ w/ Therm.ID: ____ | | |
| Cooler ID: ____ @ ____ w/ Therm.ID: ____ | | |
| Cooler ID: ____ @ ____ w/ Therm.ID: ____ | | |
| *Note: If non-compliant, use form FS-0029 to document affected samples/analyses.* If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled." | | |
| **If temperature(s) <0°C, were all sample containers ice free?** | Yes No (N/A) | |
| Delivery method (specify all that apply): (Client) USPS Alert Courier Road Runner AK Air Lynden Carlile ERA PenAir FedEx UPS NAC Other: | Note ABN/ tracking # | |
| → *For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?* | See Attached or N/A<br>Yes No (N/A) | |
| → For samples received with payment, note amount ($ ) and cash / check / CC (**circle one**) or note: | | |
| → For samples **received in FBKS**, ANCH staff will verify all criteria are reviewed. | SRF Initiated by: JD | (N/A) N/A |
| Were samples received within hold time? *Note: Refer to form F-083 "Sample Guide" for hold time information.* | (Yes) No N/A | - Bottles for 1566-080912-RW20 and 1566-080912-RW21 not received ⇒ cancelled per client. |
| Do samples **match COC*** (i.e., sample IDs, dates/times collected)? * *Note: Exemption permitted if times differ <1hr; in which case, use times on COC.* | Yes (No) N/A | |
| Were analyses requested unambiguous? | (Yes) No N/A | |
| Were samples in **good condition** (no leaks/cracks/breakage)? | (Yes) No N/A | |
| Packing material used (specify all that apply): (Bubble Wrap) Separate plastic bags Vermiculite Other: | | |
| Were all VOA vials **free of headspace** (i.e., bubbles ≤6 mm)? | (Yes) No N/A | |
| Were all soil VOAs **field extracted** with MeOH+BFB? | Yes No (N/A) | |
| Were **proper containers** (type/mass/volume/preservative*) used? * *Note: Exemption permitted for waters to be analyzed for metals.* | (Yes) No N/A | |
| Were **Trip Blanks** (i.e., VOAs, LL-Hg) in cooler with samples? | (Yes) No N/A | |
| For **special handling** (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)? | Yes No (N/A) | |
| For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was **pH verified and compliant**? | Yes No (N/A) | |
| If pH was adjusted, were bottles flagged (i.e., stickers)? | Yes No (N/A) | |
| For **RUSH/SHORT Hold Time** or **site-specific QC** (e.g., BMS/BMSD/BDUP) samples, were the COC & bottles flagged (e.g., stickers) accordingly? For RUSH/SHORT HT, was email sent? | Yes No (N/A) | |
| **For any question answered "No,"** has the PM been notified and the problem resolved (or paperwork put in their bin)? | Yes No (N/A) | SRF Completed by: SC<br>PM = N/A |
| Was **PEER REVIEW** of ***sample numbering/labeling completed?*** | Yes No (N/A) | Peer Reviewed by: N/A |

Additional notes (if applicable):

* Please cancel Samples 5 and 6, per client. -JAB-

***Note to Client:*** *Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.*

SGS

1128347

# SAMPLE RECEIPT FORM FOR TRANSFERS

**Note: This form is to be completed by Anchorage Sample Receiving staff for all shipments received at SGS-Anchorage from SGS-Fairbanks.**

| | | |
|---|---|---|
| Were samples received numbered with all criteria on Sample Receipt Form F0004 documented by Fairbanks Sample Receiving staff? If "No," ***Anchorage Sample Receiving staff must complete the receiving process & document pH verification, sample condition, etc. on the SRF initiated by Fairbanks staff*** (attached). | Yes (No) N/A | Use space below for additional notes… |
| | | |
| | | |
| | | |
| | | |
| | | |

| Review Criteria: | Condition: | Comments/Action Taken: |
|---|---|---|
| Were **custody seals** intact? Note # & location: | (Yes) No N/A | |
| COC accompanied samples? | ~~Yes~~ No N/A | 1F, 1B |
| **Temperature blank** compliant (i.e., 0-6°C after correction factor)? Cooler ID: 1 @ 3.2 w/ Therm.ID: 13<br>Cooler ID: ____ @ ____ w/ Therm.ID: ____<br>Cooler ID: ____ @ ____ w/ Therm.ID: ____<br>Cooler ID: ____ @ ____ w/ Therm.ID: ____<br>Cooler ID: ____ @ ____ w/ Therm.ID: ____<br>***Note: If non-compliant, use form FS-0029 to document affected samples/analyses.***<br>If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & **"COOLER TEMP** will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled." | (Yes) No N/A | |
| **If temperature(s) <0°C, were all containers ice free?** | Yes No (N/A) | |
| Delivery method: (Lynden) Other: | | |
| Completed by: | | |

# Laboratory Data Review Checklist

Completed by: Heather Zrucky

Title: Geologist Date: 08/23/2012

CS Report Name: Six Mile Richardson Hwy Gw Monitoring Report Date: 08/17/2012

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS Laboratory Report Number: 1128347

ADEC File Number: 100.38.078 ADEC RecKey Number:

1. Laboratory
   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
      Yes No NA (Please explain.) Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
      Yes No NA (Please explain.) Comments:

      All analyses were conducted by SGS in Anchorage, Alaska.

2. Chain of Custody (COC)
   a. COC information completed, signed, and dated (including released/received by)?
      Yes No NA (Please explain.) Comments:

   b. Correct analyses requested?
      Yes No NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      Yes No NA (Please explain.) Comments:

      The sample was hand-delivered in a single cooler to the SGS Fairbanks receiving office where the temperature blank was measured within the acceptable temperature range (2 °C to 6 °C) indicated on this checklist. The samples were then shipped to the SGS Anchorage laboratory where they were received within the acceptable temperature range.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No NA (Please explain.) Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No NA (Please explain.) Comments:

Samples were in good condition.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No NA (Please explain.) Comments:

The lab notes that bottles for samples *1566-080912-RW20* and *1566-080912-RW21* were canceled. This does not affect data results or quality for the other samples on this work order.

e. Data quality or usability affected? (Please explain.)

Comments:

No, the results are unaffected.

4. Case Narrative

a. Present and understandable?

Yes No NA (Please explain.) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

Yes No NA (Please explain.) Comments:

The lab indicates LCS/LCSD RPD values for trichlorofluoromethane and cis-1,2-dichloroethene do not meet the QC criteria. See section 6.b. for LCS/LCSD assessment.

The lab also indicates recovery for cis-1,2-dichloroethene does not meet QC criteria in the CCV for analytical batch VMS13035. This analyte was not detected above the LOQ in the associated sample (*1566-080812-RW24*) and therefore the result is unaffected.

The lab indicates methylene chloride detections in the method and instrument blanks. Since there were no detections in the project samples, we consider the sample results unaffected.

c. Were all corrective actions documented?

Yes No NA (Please explain.) Comments:

No corrective actions were required.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

| |
|---|
| The results are unaffected; see above. |

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain.) Comments:

| |
|---|
| |

b. All applicable holding times met?

Yes No NA (Please explain.) Comments:

| |
|---|
| |

c. All soils reported on a dry weight basis?

Yes No NA (Please explain.) Comments:

| |
|---|
| No soil samples were submitted. |

d. Are the reported PQLs (LOQs) less than the Cleanup Level or the minimum required detection level for the project?

Yes No NA (Please explain.) Comments:

| |
|---|
| The PQLs of 1,2,3-trichloropropane, 1,2-dibromoethane, and 1,2-dibromo-3-chloropropaneare above the cleanup levels of 0.12 µg/L, 0.05 µg/L, and 0.2 µg/L, respectively, in each project sample. |

e. Data quality or usability affected?

Comments:

| |
|---|
| We cannot determine if an analyte exceeds regulated levels where PQLs are elevated above the cleanup levels. |

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No NA (Please explain.) Comments:

| |
|---|
| |

ii. All method blank results less than PQL?

Yes No NA (Please explain.) Comments:

| |
|---|
| However, methylene chloride was detected between the DL and the LOQ. Since there were no detections in any of the project samples, we consider the results unaffected. |

iii. If above PQL, what samples are affected?

Comments:

| |
|---|
| None, see above. |

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

Yes **(No)** NA (Please explain.) Comments:

| |
|---|
| No, see above. |

v. Data quality or usability affected? (Please explain.)

Comments:

| |
|---|
| No; see above. |

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

**(Yes)** No NA (Please explain.) Comments:

| |
|---|
| |

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No **(NA (Please explain.)** Comments:

| |
|---|
| No metals/inorganic analyses were conducted. |

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

**(Yes)** No NA (Please explain.) Comments:

| |
|---|
| The LCS/LCSD recoveries were within the laboratory limits. |

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes **(No)** NA (Please explain.) Comments:

| |
|---|
| Two analytes, cis-1,2-dichloroethene and trichlorofluoromethane, had RPDs above the acceptable limits in analytical batch VMS13035. Sample *1566-080812-RW24* was analyzed in the same analytical batch; results for the two analytes were non-detect and therefore not affected by the RPD failures. |

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

| |
|---|
| None; see above. |

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain.) Comments:

| |
|---|
| N/A; see above. |

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

| |
|---|
| No; samples results were non-detect in the sample associated with the LCS/LCSD RPD failures. |

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No NA (Please explain.) Comments:

| |
|---|
| |

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No NA (Please explain.) Comments:

| |
|---|
| |

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain.) Comments:

| |
|---|
| N/A; surrogates were recovered within the acceptable limits. |

iv. Data quality or usability affected? (Use the comment box to explain.)

Comments:

| |
|---|
| No; surrogate recoveries were within QC limits. |

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

| |
|---|
| |

Yes No NA (Please explain.) Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes No NA (Please explain.) Comments:

| |
|---|
| It is indicated on the sample receipt form. |

iii. All results less than PQL?

Yes No NA (Please explain.) Comments:

| |
|---|
| |

iv. If above PQL, what samples are affected?

Comments:

| |
|---|
| |

v. Data quality or usability affected? (Please explain.)

Comments:

| |
|---|
| No; trip blank results were non-detect for the reported analytes. |

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No NA (Please explain.) Comments:

| |
|---|
| A field duplicate was not collected with this sample set; however, duplicates were collected at a rate of 1 duplicate per 10 samples and submitted on another work order associated with this project. |

ii. Submitted blind to lab?

Yes No NA (Please explain.) Comments:

| |
|---|
| N/A; see above. |

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where $R_1$ = Sample Concentration
$R_2$ = Field Duplicate Concentration

Yes No NA (Please explain.) Comments:

| |
|---|
| N/A; see above. |

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

N/A; see above.

f. Decontamination or Equipment Blank (If not used explain why).

Yes No NA (Please explain.) Comments:

Re-useable equipment was not used to collect the residential samples.

i. All results less than PQL?

Yes No NA (Please explain.) Comments:

See above.

ii. If above PQL, what samples are affected?

Comments:

iii. Data quality or usability affected? (Please explain.)

Comments:

N/A; see above.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No NA (Please explain.) Comments:

**SGS North America Inc.**
**Alaska Division**
**Level II Laboratory Data Report**

| | |
|---|---|
| Project: | 1566-002 6 Mile Res |
| Client: | Shannon & Wilson-Fairbanks |
| SGS Work Order: | 1128367 |

Released by: Stephen C. Ede

Alaska Division Technical Director

Stephen Ede
2012.08.21
10:48:18
-08'00'

**Contents:**

**Client Name: Shannon & Wilson-Fairbanks**
**Project Name: 1566-002 6 Mile Res**
**Workorder No.: 1128367**

## Sample Comments

Refer to the sample receipt form for information on sample condition.

| Lab Sample ID | Sample Type | Client Sample ID |
|---|---|---|
| 1128367001 | PS | 1566-081312-RW20 |
| | Revised Report: J Flagging turned off per client request. | |
| 1128367002 | PS | 1566-081312-RW21 |
| | Revised Report: J Flagging turned off per client request. | |
| 1128367003 | * TB | Trip Blank |
| | Revised Report: J Flagging turned off per client request. | |
| 1107555 | * MB | MB for HBN 1368566 [VXX/23888] |
| | 524.2 - Methylene chloride is detected in the MB greater than one-half the LOQ but less than the LOQ. | |
| 1107561 | * IB | IB for HBN 1368567 [VMS/13043] |
| | 524.2 - Methylene chloride is detected in the IB greater than one-half the LOQ but less than the LOQ. | |

* QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.


SGS North America Inc. | Environmental Division 200 West Potter Drive Anchorage AK 99518 t(907)562.2343 f(907)561.5301
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# Laboratory Analytical Report

Client: **Shannon & Wilson-Fairbanks**
2355 Hill Rd
Fairbanks, AK 99709

Attn: **Julie Keener**
T: (907)479-0600 F:(907)479-5691
jak@shanwil.com

Project: **1566-002 6 Mile Res**

Workorder No.: **1128367**

Certification:

This data package is in compliance with the terms and conditions of the contract, both technically and for completeness, unless otherwise noted on the sample data sheet(s) and/or case narrative. This certification applies only to the tested parameters and the specific sample(s) received at the laboratory. If you have any questions regarding this report, or if we can be of further assistance, please contact your SGS Project Manager.

Jennifer Dawkins

Project Manager

**Contents (Bookmarked in PDF):**





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Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (<http://www.sgs.com/terms_and_conditions.htm>), unless other written agreements have been accepted by both parties.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO 17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

| | |
|---|---|
| * | The analyte has exceeded allowable regulatory or control limits. |
| ! | Surrogate out of control limits. |
| B | Indicates the analyte is found in a blank associated with the sample. |
| CCV | Continuing Calibration Verification |
| CL | Control Limit |
| D | The analyte concentration is the result of a dilution. |
| DF | Dilution Factor |
| DL | Detection Limit (i.e., maximum method detection limit) |
| E | The analyte result is above the calibrated range. |
| F | Indicates value that is greater than or equal to the DL |
| GT | Greater Than |
| ICV | Initial Calibration Verification |
| J | The quantitation is an estimation. |
| JL | The analyte was positively identified, but the quantitation is a low estimation. |
| LCS(D) | Laboratory Control Spike (Duplicate) |
| LOD | Limit of Detection (i.e., 2xDL) |
| LOQ | Limit of Quantitation (i.e., reporting or practical quantitation limit) |
| LT | Less Than |
| M | A matrix effect was present. |
| MB | Method Blank |
| MS(D) | Matrix Spike (Duplicate) |
| ND | Indicates the analyte is not detected. |
| Q | QC parameter out of acceptance range. |
| R | Rejected |
| RL | Reporting Limit |
| RPD | Relative Percent Difference |
| U | Indicates the analyte was analyzed for but not detected. |

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content.
All DRO/RRO analyses are integrated per SOP.


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# SAMPLE SUMMARY

Print Date: 8/21/2012 8:39 am

**Client Name: Shannon & Wilson-Fairbanks**
**Project Name: 1566-002 6 Mile Res**
**Workorder No.: 1128367**

## Analytical Methods

| Method Description | Analytical Method |
|---|---|
| Volatile Organics by 524.2 (DW) | EPA 524.2 |

## Sample ID Cross Reference

| Lab Sample ID | Client Sample ID |
|---|---|
| 1128367001 | 1566-081312-RW20 |
| 1128367002 | 1566-081312-RW21 |
| 1128367003 | Trip Blank |


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## Detectable Results Summary

Print Date: 8/21/2012 8:39 am

Client Sample ID: **1566-081312-RW20**

SGS Ref. #: 1128367001

| Parameter | Result | Units |
|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | |
| Chloromethane | 0.500 | ug/L |
| cis-1,2-Dichloroethene | 0.540 | ug/L |
| Trichloroethene | 3.53 | ug/L |

Client Sample ID: **1566-081312-RW21**

SGS Ref. #: 1128367002

| Parameter | Result | Units |
|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | |
| cis-1,2-Dichloroethene | 0.520 | ug/L |
| Trichloroethene | 3.57 | ug/L |

Client Sample ID: **1566-081312-RW20**
SGS Ref. #: 1128367001
Project ID: 1566-002 6 Mile Res
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/13/12 12:18
Receipt Date/Time: 08/14/12 09:25

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,1-Trichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2-Trichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trimethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromo-3-chloropropane | 2.00 U | 2.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromoethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3,5-Trimethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,4-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2,2-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2-Chlorotoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Chlorotoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Isopropyltoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Benzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromodichloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromoform | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromomethane | 2.00 U | 2.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| Carbon tetrachloride | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroform | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloromethane | 0.500 | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| cis-1,2-Dichloroethene | 0.540 | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |

Client Sample ID: **1566-081312-RW20**
SGS Ref. #: 1128367001
Project ID: 1566-002 6 Mile Res
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/13/12 12:18
Receipt Date/Time: 08/14/12 09:25

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromomethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dichlorodifluoromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Ethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Hexachlorobutadiene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Isopropylbenzene (Cumene) | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methylene chloride | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methyl-t-butyl ether | 1.00 U | 1.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| Naphthalene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Propylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| o-Xylene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| P & M -Xylene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| sec-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Styrene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| tert-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Tetrachloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Toluene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Total Trihalomethanes | 2.00 U | 2.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,2-Dichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichloroethene | 3.53 | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichlorofluoromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Vinyl chloride | 0.400 U | 0.400 | ug/L | 1 | VMS13043 | VXX23888 | |
| Xylenes (total) | 1.00 U | 1.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane-D4 <surr> | 115 | 70-130 | % | 1 | VMS13043 | VXX23888 | |
| 4-Bromofluorobenzene <surr> | 98.8 | 70-130 | % | 1 | VMS13043 | VXX23888 | |
| Toluene-d8 <surr> | 97 | 70-130 | % | 1 | VMS13043 | VXX23888 | |

**Batch Information**

Analytical Batch: VMS13043
Analytical Method: EPA 524.2
Analysis Date/Time: 08/16/12 19:24
Dilution Factor: 1

Prep Batch: VXX23888
Prep Method: SW5030B
Prep Date/Time: 08/16/12 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128367001-A
Analyst: JDH

Client Sample ID: **1566-081312-RW21**
SGS Ref. #: 1128367002
Project ID: 1566-002 6 Mile Res
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/13/12 12:00
Receipt Date/Time: 08/14/12 09:25

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,1-Trichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2-Trichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trimethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromo-3-chloropropane | 2.00 U | 2.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromoethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3,5-Trimethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,4-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2,2-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2-Chlorotoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Chlorotoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Isopropyltoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Benzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromodichloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromoform | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromomethane | 2.00 U | 2.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| Carbon tetrachloride | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroform | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| cis-1,2-Dichloroethene | 0.520 | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |

Client Sample ID: **1566-081312-RW21**
SGS Ref. #: 1128367002
Project ID: 1566-002 6 Mile Res
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/13/12 12:00
Receipt Date/Time: 08/14/12 09:25

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromomethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dichlorodifluoromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Ethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Hexachlorobutadiene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Isopropylbenzene (Cumene) | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methylene chloride | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methyl-t-butyl ether | 1.00 U | 1.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| Naphthalene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Propylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| o-Xylene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| P & M -Xylene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| sec-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Styrene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| tert-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Tetrachloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Toluene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Total Trihalomethanes | 2.00 U | 2.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,2-Dichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichloroethene | 3.57 | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichlorofluoromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Vinyl chloride | 0.400 U | 0.400 | ug/L | 1 | VMS13043 | VXX23888 | |
| Xylenes (total) | 1.00 U | 1.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane-D4 <surr> | 114 | 70-130 | % | 1 | VMS13043 | VXX23888 | |
| 4-Bromofluorobenzene <surr> | 102 | 70-130 | % | 1 | VMS13043 | VXX23888 | |
| Toluene-d8 <surr> | 97.3 | 70-130 | % | 1 | VMS13043 | VXX23888 | |

**Batch Information**

Analytical Batch: VMS13043
Analytical Method: EPA 524.2
Analysis Date/Time: 08/16/12 19:55
Dilution Factor: 1

Prep Batch: VXX23888
Prep Method: SW5030B
Prep Date/Time: 08/16/12 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128367002-A
Analyst: JDH

Client Sample ID: **Trip Blank**
SGS Ref. #: 1128367003
Project ID: 1566-002 6 Mile Res
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/13/12 12:00
Receipt Date/Time: 08/14/12 09:25

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,1-Trichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2,2-Tetrachloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1,2-Trichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,1-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,3-Trichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2,4-Trimethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromo-3-chloropropane | 2.00 U | 2.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dibromoethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3,5-Trimethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,3-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,4-Dichlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2,2-Dichloropropane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 2-Chlorotoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Chlorotoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| 4-Isopropyltoluene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Benzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromodichloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromoform | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Bromomethane | 2.00 U | 2.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| Carbon tetrachloride | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chlorobenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroethane | 1.00 U | 1.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloroform | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Chloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| cis-1,2-Dichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |

Client Sample ID: **Trip Blank**
SGS Ref. #: 1128367003
Project ID: 1566-002 6 Mile Res
Matrix: Water (Surface, Eff., Ground)

Collection Date/Time: 08/13/12 12:00
Receipt Date/Time: 08/14/12 09:25

**Volatile Gas Chromatography/Mass Spectroscopy**

| Parameter | Result | LOQ/CL | Units | DF | Analytical Batch | Prep Batch | Qualifiers |
|---|---|---|---|---|---|---|---|
| cis-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromochloromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dibromomethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Dichlorodifluoromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Ethylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Hexachlorobutadiene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Isopropylbenzene (Cumene) | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methylene chloride | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Methyl-t-butyl ether | 1.00 U | 1.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| Naphthalene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| n-Propylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| o-Xylene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| P & M -Xylene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| sec-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Styrene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| tert-Butylbenzene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Tetrachloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Toluene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Total Trihalomethanes | 2.00 U | 2.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,2-Dichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| trans-1,3-Dichloropropene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichloroethene | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Trichlorofluoromethane | 0.500 U | 0.500 | ug/L | 1 | VMS13043 | VXX23888 | |
| Vinyl chloride | 0.400 U | 0.400 | ug/L | 1 | VMS13043 | VXX23888 | |
| Xylenes (total) | 1.00 U | 1.00 | ug/L | 1 | VMS13043 | VXX23888 | |
| 1,2-Dichloroethane-D4 <surr> | 110 | 70-130 | % | 1 | VMS13043 | VXX23888 | |
| 4-Bromofluorobenzene <surr> | 101 | 70-130 | % | 1 | VMS13043 | VXX23888 | |
| Toluene-d8 <surr> | 99.5 | 70-130 | % | 1 | VMS13043 | VXX23888 | |

**Batch Information**

Analytical Batch: VMS13043
Analytical Method: EPA 524.2
Analysis Date/Time: 08/16/12 14:13
Dilution Factor: 1

Prep Batch: VXX23888
Prep Method: SW5030B
Prep Date/Time: 08/16/12 08:00

Initial Prep Wt./Vol.: 5 mL
Prep Extract Vol.: 5 mL
Container ID:1128367003-A
Analyst: JDH

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1107555 Method Blank | **Printed Date/Time** | 08/21/2012 8:39 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Prep** | **Batch** | VXX23888 |
| **Project Name/#** | 1566-002 6 Mile Res | | **Method** | SW5030B |
| **Matrix** | Drinking Water | | **Date** | 08/16/2012 |

QC results affect the following production samples:

1128367001, 1128367002, 1128367003

| Parameter | Results | LOQ/CL | DL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,1,1-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,1,2,2-Tetrachloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,1,2-Trichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,1-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,1-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,1-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2,3-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2,3-Trichloropropane | 0.360 U | 0.500 | 0.180 | ug/L | 08/16/12 |
| 1,2,4-Trichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2,4-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2-Dibromo-3-chloropropane | 1.24 U | 2.00 | 0.620 | ug/L | 08/16/12 |
| 1,2-Dibromoethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2-Dichloroethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,3,5-Trimethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,3-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,3-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 1,4-Dichlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 2,2-Dichloropropane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 2-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 4-Chlorotoluene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| 4-Isopropyltoluene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Benzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Bromobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Bromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Bromodichloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Bromoform | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Bromomethane | 1.24 U | 2.00 | 0.620 | ug/L | 08/16/12 |
| Carbon tetrachloride | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Chlorobenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Chloroethane | 0.620 U | 1.00 | 0.310 | ug/L | 08/16/12 |
| Chloroform | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Chloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| cis-1,2-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1107555 | Method Blank | **Printed Date/Time** | 08/21/2012 8:39 |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Prep Batch** | VXX23888 |
| **Project Name/#** | 1566-002 6 Mile Res | | **Method** | SW5030B |
| **Matrix** | Drinking Water | | **Date** | 08/16/2012 |

| Parameter | Results | LOQ/CL | DL | Units | Analysis Date |
|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | |
| cis-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Dibromochloromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Dibromomethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Dichlorodifluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Ethylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Hexachlorobutadiene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Isopropylbenzene (Cumene) | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Methylene chloride | 0.260J | 0.500 | 0.150 | ug/L | 08/16/12 |
| Methyl-t-butyl ether | 1.00 U | 1.00 | 0.500 | ug/L | 08/16/12 |
| Naphthalene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| n-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| n-Propylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| o-Xylene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| P & M -Xylene | 0.360 U | 0.500 | 0.180 | ug/L | 08/16/12 |
| sec-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Styrene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| tert-Butylbenzene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Tetrachloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Toluene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| trans-1,2-Dichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| trans-1,3-Dichloropropene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Trichloroethene | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Trichlorofluoromethane | 0.300 U | 0.500 | 0.150 | ug/L | 08/16/12 |
| Vinyl chloride | 0.240 U | 0.400 | 0.120 | ug/L | 08/16/12 |
| **Surrogates** | | | | | |
| 1,2-Dichloroethane-D4 <surr> | 106 | 70-130 | | % | 08/16/12 |
| 4-Bromofluorobenzene <surr> | 100 | 70-130 | | % | 08/16/12 |
| Toluene-d8 <surr> | 100 | 70-130 | | % | 08/16/12 |

| | |
|---|---|
| **Batch** | VMS13043 |
| **Method** | EPA 524.2 |
| **Instrument** | Agilent 7890-75MS |

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 1107556 | Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:39 |
| | 1107557 | Lab Control Sample Duplicate | **Prep Batch** | VXX23888 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 1566-002 6 Mile Res | | **Date** | 08/16/2012 | |
| **Matrix** | Drinking Water | | | | |

QC results affect the following production samples:

1128367001, 1128367002, 1128367003

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | LCS | 32.8 | 109 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.4 | 111 | | 2 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,1,1-Trichloroethane | LCS | 33.6 | 112 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.4 | 111 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,1,2,2-Tetrachloroethane | LCS | 29.5 | 98 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.2 | 104 | | 5 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,1,2-Trichloroethane | LCS | 30.6 | 102 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.7 | 106 | | 4 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,1-Dichloroethane | LCS | 32.0 | 107 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.9 | 106 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,1-Dichloroethene | LCS | 32.0 | 107 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.6 | 105 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,1-Dichloropropene | LCS | 32.1 | 107 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.2 | 107 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2,3-Trichlorobenzene | LCS | 28.9 | 96 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.0 | 103 | | 7 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2,3-Trichloropropane | LCS | 29.7 | 99 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.4 | 105 | | 5 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2,4-Trichlorobenzene | LCS | 29.6 | 99 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.1 | 104 | | 5 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2,4-Trimethylbenzene | LCS | 32.6 | 109 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.7 | 109 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2-Dibromo-3-chloropropane | LCS | 30.5 | 102 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.9 | 110 | | 8 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2-Dibromoethane | LCS | 31.4 | 105 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.9 | 110 | | 5 | (< 30 ) | 30 ug/L | 08/16/2012 |

| | | | | |
|---|---|---|---|---|
| **SGS Ref.#** | 1107556 Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:39 |
| | 1107557 Lab Control Sample Duplicate | **Prep Batch** | VXX23888 | |
| **Client Name** | Shannon & Wilson-Fairbanks | **Method** | SW5030B | |
| **Project Name/#** | 1566-002 6 Mile Res | **Date** | 08/16/2012 | |
| **Matrix** | Drinking Water | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| 1,2-Dichlorobenzene | LCS | 29.9 | 100 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 30.4 | 101 | | 2 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2-Dichloroethane | LCS | 32.2 | 107 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.7 | 109 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,2-Dichloropropane | LCS | 31.2 | 104 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.4 | 105 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,3,5-Trimethylbenzene | LCS | 32.3 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.5 | 108 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,3-Dichlorobenzene | LCS | 30.5 | 102 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 30.9 | 103 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,3-Dichloropropane | LCS | 30.6 | 102 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.0 | 107 | | 4 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 1,4-Dichlorobenzene | LCS | 30.4 | 101 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 30.4 | 101 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 2,2-Dichloropropane | LCS | 33.9 | 113 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.7 | 112 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 2-Chlorotoluene | LCS | 31.0 | 103 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.0 | 103 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 4-Chlorotoluene | LCS | 31.8 | 106 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.0 | 103 | | 3 | (< 30 ) | 30 ug/L | 08/16/2012 |
| 4-Isopropyltoluene | LCS | 33.1 | 110 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.4 | 111 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Benzene | LCS | 31.4 | 105 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.4 | 105 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Bromobenzene | LCS | 29.9 | 100 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 30.3 | 101 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Bromochloromethane | LCS | 30.8 | 103 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.0 | 103 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 1107556 | Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:39 |
| | 1107557 | Lab Control Sample Duplicate | **Prep Batch** | VXX23888 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 1566-002 6 Mile Res | | **Date** | 08/16/2012 | |
| **Matrix** | Drinking Water | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| Bromodichloromethane | LCS | 33.0 | 110 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.2 | 111 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Bromoform | LCS | 33.0 | 110 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 35.2 | 117 | | 6 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Bromomethane | LCS | 27.7 | 93 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 26.4 | 88 | | 5 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Carbon tetrachloride | LCS | 34.4 | 115 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 34.2 | 114 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Chlorobenzene | LCS | 30.8 | 103 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.4 | 105 | | 2 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Chloroethane | LCS | 30.6 | 102 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 29.8 | 99 | | 3 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Chloroform | LCS | 29.7 | 99 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 29.8 | 99 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Chloromethane | LCS | 29.6 | 99 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 30.0 | 100 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| cis-1,2-Dichloroethene | LCS | 31.2 | 104 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.3 | 104 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| cis-1,3-Dichloropropene | LCS | 32.7 | 109 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.0 | 110 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Dibromochloromethane | LCS | 33.2 | 111 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 34.1 | 114 | | 3 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Dibromomethane | LCS | 31.1 | 104 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.8 | 106 | | 2 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Dichlorodifluoromethane | LCS | 31.8 | 106 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 30.6 | 102 | | 4 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Ethylbenzene | LCS | 31.3 | 104 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 1107556 | Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:39 |
| | 1107557 | Lab Control Sample Duplicate | **Prep Batch** | VXX23888 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 1566-002 6 Mile Res | | **Date** | 08/16/2012 | |
| **Matrix** | Drinking Water | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| | LCSD | 31.4 | 105 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Hexachlorobutadiene | LCS | 30.8 | 103 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.4 | 108 | | 5 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Isopropylbenzene (Cumene) | LCS | 33.2 | 111 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.2 | 111 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Methylene chloride | LCS | 32.5 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.4 | 108 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Methyl-t-butyl ether | LCS | 46.8 | 104 | ( 70-130 ) | | | 45 ug/L | 08/16/2012 |
| | LCSD | 48.1 | 107 | | 3 | (< 30 ) | 45 ug/L | 08/16/2012 |
| Naphthalene | LCS | 31.7 | 106 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.8 | 113 | | 6 | (< 30 ) | 30 ug/L | 08/16/2012 |
| n-Butylbenzene | LCS | 32.3 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.4 | 108 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| n-Propylbenzene | LCS | 31.7 | 106 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.8 | 106 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| o-Xylene | LCS | 32.3 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.1 | 110 | | 2 | (< 30 ) | 30 ug/L | 08/16/2012 |
| P & M -Xylene | LCS | 65.3 | 109 | ( 70-130 ) | | | 60 ug/L | 08/16/2012 |
| | LCSD | 65.8 | 110 | | 1 | (< 30 ) | 60 ug/L | 08/16/2012 |
| sec-Butylbenzene | LCS | 32.4 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.7 | 109 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Styrene | LCS | 33.3 | 111 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.1 | 110 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| tert-Butylbenzene | LCS | 31.6 | 105 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.0 | 107 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Tetrachloroethene | LCS | 31.7 | 106 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 32.1 | 107 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |

| | | | | | |
|---|---|---|---|---|---|
| **SGS Ref.#** | 1107556 | Lab Control Sample | **Printed Date/Time** | 08/21/2012 | 8:39 |
| | 1107557 | Lab Control Sample Duplicate | **Prep Batch** | VXX23888 | |
| **Client Name** | Shannon & Wilson-Fairbanks | | **Method** | SW5030B | |
| **Project Name/#** | 1566-002 6 Mile Res | | **Date** | 08/16/2012 | |
| **Matrix** | Drinking Water | | | | |

| Parameter | | QC Results | Pct Recov | LCS/LCSD Limits | RPD | RPD Limits | Spiked Amount | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| **Volatile Gas Chromatography/Mass Spectroscopy** | | | | | | | | |
| Toluene | LCS | 30.9 | 103 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.4 | 105 | | 2 | (< 30 ) | 30 ug/L | 08/16/2012 |
| trans-1,2-Dichloroethene | LCS | 31.3 | 104 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.2 | 104 | | 0 | (< 30 ) | 30 ug/L | 08/16/2012 |
| trans-1,3-Dichloropropene | LCS | 32.5 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 33.8 | 113 | | 4 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Trichloroethene | LCS | 31.5 | 105 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.7 | 106 | | 1 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Trichlorofluoromethane | LCS | 32.5 | 108 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 31.5 | 105 | | 3 | (< 30 ) | 30 ug/L | 08/16/2012 |
| Vinyl chloride | LCS | 30.6 | 102 | ( 70-130 ) | | | 30 ug/L | 08/16/2012 |
| | LCSD | 29.6 | 99 | | 3 | (< 30 ) | 30 ug/L | 08/16/2012 |
| **Surrogates** | | | | | | | | |
| 1,2-Dichloroethane-D4 <surr> | LCS | | 103 | ( 70-130 ) | | | | 08/16/2012 |
| | LCSD | | 103 | | 0 | | | 08/16/2012 |
| 4-Bromofluorobenzene <surr> | LCS | | 100 | ( 70-130 ) | | | | 08/16/2012 |
| | LCSD | | 98 | | 2 | | | 08/16/2012 |
| Toluene-d8 <surr> | LCS | | 101 | ( 70-130 ) | | | | 08/16/2012 |
| | LCSD | | 100 | | 1 | | | 08/16/2012 |

| | |
|---|---|
| **Batch** | VMS13043 |
| **Method** | EPA 524.2 |
| **Instrument** | Agilent 7890-75MS |

1128367

**SHANNON & WILSON, INC.**
Geotechnical and Environmental Consultants

# CHAIN-OF-CUSTODY

Page 1 of 1

Laboratory SGS
Attn:


400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

2355 Hill Road
Fairbanks, AK 99709
(907) 479-0600

2255 S.W. Canyon Road
Portland, OR 97201-2498
(503) 223-6147

2043 Westport Center Drive
St. Louis, MO 63146-3564
(314) 699-9660

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

1200 17th Street, Suite 1024
Denver, Co 80202
(303) 825-3800

303 Wellsian Way
Richland, WA 99352
(509) 946-6309




**Analysis Parameters/Sample Container Description**
(include preservative if used)

| Sample Identity | Lab No. | Time | Date Sampled | Comp. | Grab | VOC (EPA 524.2) | | | | | | Total Number of Containers | Remarks/Matrix |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1566-081312-RW20 | (1) A-C | 12:18 | 8-13-12 | | X | 3 | | | | | | 3 | DW |
| 1566-081312-RW21 | (2) A-C | 12:00 | 8-13-12 | | X | 3 | | | | | | 3 | DW |
| Trip Blank | (3) A-C | | | | | X | | | | | | | |

| Project Information | | Sample Receipt | |
|---|---|---|---|
| Project Number: 1566-002 | | Total Number of Containers | 6 |
| Project Name: 6 Mile Res. | | COC Seals/Intact? Y/N/NA | |
| Contact: JAK | | Received Good Cond./Cold | |
| Ongoing Project? Yes ☑ No ☐ | | Delivery Method: Hand | |
| Sampler: HRZ | | (attach shipping bill, if any) | |

| Instructions |
|---|
| Requested Turnaround Time: Standard |
| Special Instructions: Bill to Shannon & Wilson |

| Relinquished By: 1. | Relinquished By: 2. | Relinquished By: 3. |
|---|---|---|
| Signature: Time: 13:15 | Signature: Time: 1515 | Signature: Time: |
| Printed Name: Heather Zuckey Date: 8-13-12 | Printed Name: Kendra Frey Date: 8/13/12 | Printed Name: Date: |
| Company: SWI | Company: SGS | Company: |

| Received By: 1. | Received By: 2. | Received By: 3. |
|---|---|---|
| Signature: Time: 1315 | Signature: Time: | Signature: Time: 0925 |
| Printed Name: Kendra Frey Date: 8/13/12 | Printed Name: Date: | Printed Name: Annette Woodward Date: 8/14/12 |
| Company: SGS | Company: | Company: SGS |

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

TB=1.0°C
ID71

No. 31289

SGS

1128367

# SAMPLE RECEIPT FORM

| Review Criteria: | Condition: | Comments/Action Taken: |
|---|---|---|
| Were **custody seals** intact? Note # & location, if applicable.<br>COC accompanied samples? | Yes No N/A<br>Yes No N/A | |
| **Temperature blank** compliant* (i.e., 0-6°C after correction factor)?<br>** Note: Exemption permitted for chilled samples collected less than 8 hours ago.*<br>Cooler ID: 1 @ 1.0°C w/ Therm.ID: 71<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>*Note: If non-compliant, use form FS-0029 to document affected samples/analyses.*<br>If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled."<br>**If temperature(s) <0°C, were all sample containers ice free?** | Yes No N/A<br><br>Yes No N/A | |
| Delivery method (specify all that apply): Client<br>USPS Alert Courier Road Runner AK Air<br>Lynden Carlile ERA PenAir<br>FedEx UPS NAC Other:<br>→ *For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?* | Note ABN/ tracking #<br>See Attached or N/A<br>Yes No N/A | |
| → For samples received with payment, note amount ($ ) and cash / check / CC (**circle one**) or note: N/A<br>→ For samples **received in FBKS**, ANCH staff will verify all criteria are reviewed. SRF Initiated by: KF N/A | | |
| Were samples received within hold time?<br>*Note: Refer to form F-083 "Sample Guide" for hold time information.*<br>Do samples **match COC*** (i.e., sample IDs, dates/times collected)?<br>** Note: Exemption permitted if times differ <1hr; in which case, use times on COC.*<br>Were analyses requested unambiguous? | Yes No N/A<br>Yes No N/A<br><br>Yes No N/A | |
| Were samples in **good condition** (no leaks/cracks/breakage)?<br>Packing material used (specify all that apply): Bubble Wrap<br>Separate plastic bags Vermiculite Other: | Yes No N/A | |
| Were all VOA vials **free of headspace** (i.e., bubbles ≤6 mm)?<br>Were all soil VOAs **field extracted** with MeOH+BFB? | Yes No N/A<br>Yes No N/A | |
| Were **proper containers** (type/mass/volume/preservative*) used?<br>** Note: Exemption permitted for waters to be analyzed for metals.*<br>Were **Trip Blanks** (i.e., VOAs, LL-Hg) in cooler with samples? | Yes No N/A<br><br>Yes No N/A | |
| For **special handling** (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)? | Yes No N/A | |
| For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was **pH verified and compliant**?<br>If pH was adjusted, were bottles flagged (i.e., stickers)? | Yes No N/A<br><br>Yes No N/A | |
| For **RUSH/SHORT Hold Time** or **site-specific QC** (e.g., BMS/BMSD/BDUP) samples, were the COC & bottles flagged (e.g., stickers) accordingly? For RUSH/SHORT HT, was email sent? | Yes No N/A | |
| **For any question answered "No,"** has the PM been notified and the problem resolved (or paperwork put in their bin)? | Yes No N/A | SRF Completed by: [illegible]<br>PM = N/A |
| Was **PEER REVIEW** of ***sample numbering/labeling completed?*** | Yes No N/A | Peer Reviewed by: N/A |

Additional notes (if applicable):

*Note to Client: Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.*

SGS

1128367

# SAMPLE RECEIPT FORM FOR TRANSFERS

**Note: This form is to be completed by Anchorage Sample Receiving staff for all shipments received at SGS-Anchorage from SGS-Fairbanks.**

| | | |
|---|---|---|
| Were samples received numbered with all criteria on Sample Receipt Form F0004 documented by Fairbanks Sample Receiving staff? If "No," ***Anchorage Sample Receiving staff must complete the receiving process & document pH verification, sample condition, etc. on the SRF initiated by Fairbanks staff*** (attached). | Yes No N/A | Use space below for additional notes… |
| | | |
| | | |
| | | |
| | | |
| | | |

| Review Criteria: | Condition: | Comments/Action Taken: |
|---|---|---|
| Were **custody seals** intact?<br>Note # & location:<br>COC accompanied samples? | Yes No N/A<br><br>Yes No N/A | 15 13 |
| **Temperature blank** compliant (i.e., 0-6°C after correction factor)?<br>Cooler ID: 1 @ 2.4 w/ Therm.ID: 11<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>Cooler ID: _____ @ _____ w/ Therm.ID: _____<br>***Note: If non-compliant, use form FS-0029 to document affected samples/analyses.***<br>If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP** will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled."<br>**If temperature(s) <0°C, were all containers ice free?** | Yes No N/A<br><br><br><br><br><br><br><br><br><br>Yes No N/A | |
| Delivery method: Lynden<br>Other: | | |
| Completed by: ANW | | |

# Laboratory Data Review Checklist

Completed by: Heather Zrucky

Title: Geologist Date: 08/24/2012

CS Report Name: Six Mile Richardson Hwy Gw Monitoring Report Date: 08/21/2012

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS Laboratory Report Number: 1128367

ADEC File Number: 100.38.078 ADEC RecKey Number:

1. Laboratory
   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
      Yes No NA (Please explain.) Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
      Yes No NA (Please explain.) Comments:

      All analyses were conducted by SGS in Anchorage, Alaska.

2. Chain of Custody (COC)
   a. COC information completed, signed, and dated (including released/received by)?
      Yes No NA (Please explain.) Comments:

   b. Correct analyses requested?
      Yes No NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      Yes No NA (Please explain.) Comments:

      The sample was hand-delivered in a single cooler to the SGS Fairbanks receiving office where the temperature blank was measured within the acceptable range of 0 °C to 6 °C, as specified in EPA publication SW-846 and approved by the ADEC. The samples were then shipped to the SGS Anchorage laboratory, where they were within the acceptable temperature range (2 °C to 6 °C) indicated on this checklist.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No NA (Please explain.) Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No NA (Please explain.) Comments:

Samples were in good condition.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No NA (Please explain.) Comments:

There were no discrepancies identified by the lab.

e. Data quality or usability affected? (Please explain.)

Comments:

No, the results are unaffected.

4. Case Narrative

a. Present and understandable?

Yes No NA (Please explain.) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

Yes No NA (Please explain.) Comments:

The lab indicated methylene chloride detections in the method and instrument blanks. Since there were no detections in either of the project samples, we consider the sample results unaffected.

c. Were all corrective actions documented?

Yes No NA (Please explain.) Comments:

No corrective actions were required.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

The results are unaffected.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain.) Comments:

b. All applicable holding times met?

Yes No NA (Please explain.) Comments:

c. All soils reported on a dry weight basis?

Yes No NA (Please explain.) Comments:

No soil samples were submitted.

d. Are the reported PQLs (LOQs) less than the Cleanup Level or the minimum required detection level for the project?

Yes No NA (Please explain.) Comments:

The PQLs of 1,2,3-trichloropropane, 1,2-dibromoethane, and 1,2-dibromo-3-chloropropane are above the cleanup levels of 0.12 µg/L, 0.05 µg/L, and 0.2 µg/L, respectively.

e. Data quality or usability affected?

Comments:

We cannot determine if an analyte exceeds regulated levels where PQLs are elevated above the cleanup levels.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No NA (Please explain.) Comments:

ii. All method blank results less than PQL?

Yes No NA (Please explain.) Comments:

However, methylene chloride was detected between the DL and the LOQ. Since there were no detections in any of the samples for this analyte, we consider the results unaffected.

iii. If above PQL, what samples are affected?

Comments:

None, see above.

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

Yes No NA (Please explain.) Comments:

N/A; see above.

v. Data quality or usability affected? (Please explain.)

Comments:

No, see above.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No NA (Please explain.) Comments:

An LCS/LCSD was analyzed.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No NA (Please explain.) Comments:

No metals/inorganic analyses were conducted.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No NA (Please explain.) Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No NA (Please explain.) Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain.) Comments:

N/A; see above.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

N/A; see above.

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No NA (Please explain.) Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No NA (Please explain.) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain.) Comments:

N/A; surrogates were recovered within the acceptable limits.

iv. Data quality or usability affected? (Use the comment box to explain.)

Comments:

No; surrogate recoveries were within QC limits.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes No NA (Please explain.) Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes No NA (Please explain.) Comments:

It is indicated on the sample receipt form.

iii. All results less than PQL?

Yes No NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

N/A; results were non-detect for the reported analytes.

Comments:

v. Data quality or usability affected? (Please explain.)

Comments:

No; see above.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No NA (Please explain.) Comments:

A field duplicate pair 1566-081312-RW20 and 1566-081312-RW21 were submitted with this work order.

ii. Submitted blind to lab?

Yes No NA (Please explain.) Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where $R_1$ = Sample Concentration
$R_2$ = Field Duplicate Concentration

Yes No NA (Please explain.) Comments:

Where calculable.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

No.

f. Decontamination or Equipment Blank (If not used explain why).

Yes No NA (Please explain.) Comments:

Re-useable equipment was not used to collect the residential samples.

i. All results less than PQL?

Yes No NA (Please explain.) Comments:

See above.

ii. If above PQL, what samples are affected?

Comments:

iii. Data quality or usability affected? (Please explain.)

Comments:

No; see above.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
   a. Defined and appropriate?

      Yes No NA (Please explain.) Comments: