SOIL VAPOR EXTRACTION PILOT STUDY REPORT

KUHLMAN ELECTRIC CORPORATION
CRYSTAL SPRINGS, MISSISSIPPI

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Executive Summary

This report documents the performance of and makes recommendations resulting from a Soil Vapor Extraction (SVE) pilot test conducted at the Kuhlman Electric Corporation (KEC) manufacturing facility in Crystal Springs, Mississippi by Environmental Management Services, Inc. (EMS) on May 12-13, 2012. References noted in this summary are listed later in this report.

This pilot test was performed in order to generate information required to evaluate SVE as a viable remedial strategy and provide design criteria. The performance of the pilot study was stipulated in a Corrective Action Plan (CAP) submitted to the Mississippi Department of Environmental Quality (MDEQ) which was approved on March 1, 2012.

The CAP was prepared following an extensive soil and groundwater investigation begun in 2003 following the discovery of Volatile Organic Compounds (VOCs) in the groundwater beneath the facility property.

The VOCs present were found to be the result of releases of solvents used historically at the facility. The solvent 1,1,1-trichloroethane (TCA) is thought to be the solvent product formerly used onsite. Degradation products of TCA including 1,1-dichloroethene (DCE) and 1,4,-dioxane, used as a stabilizer for TCA in the past, were found to be the primary constituents of concern (COC) beneath the facility and in a groundwater contaminant plume that had migrated offsite approximately 2,400 feet. Additional chemicals described in the CAP as exceeding MDEQ's Target Remediation Goals (TRG) were carbon tetrachloride (CT), 1,1,2-trichloroethane (1,1,2-TCA) and 1,2-dichloroethane (1,2-DCA). DCE and 1,4-dioxane also exceed the TRG for groundwater off-site. The remaining COC concentrations appear to attenuate before reaching the property boundary based on available data as noted in the CAP.

The investigation identified soil impacted by the COC beneath the facility in proximity to a historical solvent use portion of the facility. Vertical soil sampling found COC present in the soil, at diminishing concentration levels with depth, to approximately 40 feet below the facility floor within this suspected source area. As presented in the CAP, the proposed conceptual remedial measures included the installation of twenty-three air sparging wells completed into the impacted groundwater to a depth of 90 feet beneath the

suspected source and ten SVE wells overlying the suggested grid pattern configuration of the air sparging wells.

The CAP proposed that pilot testing be performed to establish the final design parameters for the remediation systems. This report details the pilot test of SVE technology at the site, which was performed by EMS following the March 1, 2012 approval of a plan for such submitted to MDEQ. This pilot test consisted of evaluations within two separate vertical zones rather than one continuous vertical zone between the surface and the groundwater level. These zones were established based on review of previously generated boring logs and sampling results by others and refined during the implementation of the SVE pilot plan.

In summary, the pilot test results indicated:

- Observable vacuum response of greater than 1 inch of water in both the upper zone (approximately 0-24 feet below ground surface (bgs)) and lower zone (approximately 24-62 feet bgs) at distances up to at least 80 feet from the extraction point.
- Comparison between zones showed the observable vacuum responses at less than 80 feet from the extraction point were significantly different. Higher vacuum responses were achieved in the upper zone.
- Elevated concentrations of VOCs were detected in vapors extracted from the upper zone, with significantly lower concentrations of the VOCs in vapors extracted from the lower zone.
- Soil sampling showed higher concentrations of VOCs in the upper zone with no detection of VOCs in the lower zone (30 bgs and below).
- No water was recovered in the SVE equipment from either zone during the SVE test.

Additional considerations:

- The previous soil sampling and the sampling performed during the installation of the pilot test wells and observation wells found no detectable COC at depths greater than approximately 38-44 feet bgs.
- The explanation for continuing detections of elevated concentrations of the COC in upgradient monitor wells is unresolved. The potential for the presence of an

additional contaminant source area or a linkage to the targeted source area have not been ruled out as possible contributors to the upgradient and overall groundwater conditions.

- Significant physical limitations exist with respect to the locations possible for SVE system components, wells, and accompanying apparatus. Facility operational capability must be incorporated into the SVE system design.

Conclusions

The conclusions from the pilot test and review of available information include:

- SVE is a viable remedial strategy based on observed subsurface response and the characteristics of the COC.
- The SVE system should target the vertical interval where the soil contaminants are located (shallow zone from 0-24 feet bgs).
- The SVE system design should allow for expansion as necessary based on effectiveness monitoring.
- Expanded investigation of the upgradient groundwater and of shallow soil conditions should be implemented prior to final Corrective Action Design for groundwater remediation. An Upgradient Shallow Subsurface Investigation Work Plan was approved on October 31, 2012. Implementation is underway.

1.0 Introduction

This report documents the performance of and lays out the conceptual plan resulting from the Soil Vapor Extraction (SVE) pilot test conducted at the Kuhlman Electric Corporation (KEC) manufacturing facility in Crystal Springs, Mississippi by Environmental Management Services, Inc. (EMS) on May 12-13, 2012. This pilot test was performed in accordance with the Work Plan approved by MDEQ on March 1, 2012. The intent was to generate data required to evaluate SVE as a viable remedial strategy and provide information for a full scale SVE system, the design of which has been progressing concurrently and will be presented under separate cover. The performance of the pilot study was stipulated in the *Corrective Action Plan, Kuhlman Electric Corporation Facility, Crystal Springs, Mississippi* (CAP) submitted to the Mississippi Department of Environmental Quality (MDEQ) which was approved on March 1, 2012.

1.1 Background

The KEC facility is located at 101 Kuhlman Drive in Crystal Springs, Mississippi, as shown in Figure 1, and has operated as an electrical transformer manufacturing plant since its construction in the 1950's. In April of 2000, Polychlorinated Biphenyl (PCB)-contaminated soil was discovered on-site during sub-surface construction activities. This discovery initiated several phases of environmental assessments and remediation projects, some of which are currently ongoing. During these investigations and remediation projects it was discovered that the groundwater on and off KEC property was impacted with Volatile Organic Compounds (VOCs), principally 1,1-dichloroethene (DCE) and the semi-volatile constituent 1,4-dioxane (dioxane).

An investigation was performed to determine the source of the groundwater impacts and was documented in the April 30, 2009 *Groundwater Assessment Report, Kuhlman Electric Corporation, Crystal Springs, Mississippi* prepared by Martin & Slagle Geoenvironmental Associates, LLC (Martin & Slagle) for BorgWarner (hereafter referred to as the April 2009 *Groundwater Assessment Report*). A source area has been identified beneath the plant floor within subsurface soil for the VOCs and dioxane found in the groundwater. This area is near the western portion of the plant building beneath the Winding Department process area, the Break Room, and a former rail pit located west of the IT Test Department, as shown on the April 2009 *Groundwater Assessment Report* Figures 12 and 13 provided in Appendix A for reference.

In connection with the environmental assessments at the site and in accordance with MDEQ requirements, groundwater monitoring has been performed on and off KEC facility property since 2004, on a quarterly to semi-annual schedule since 2005, and is presently ongoing. To date a total of forty-three permanent groundwater monitoring wells are used to monitor the groundwater plume

Historical data indicate that groundwater is impacted upgradient from the defined source area which is located on the western side of the plant building. Based on recent and historical data, five of the remaining seven upgradient wells (MW-02, MW-03, MW-04, MW-06, and MW-08) exhibit what appear to be steady to increasing concentration trends for DCE, and two groundwater monitoring wells (MW-02 and MW-03) exhibit what appear as steady concentration trends for dioxane. During an earlier investigation described in the *Kuhlman Electric Corporation Preliminary Groundwater Assessment Report*, dated July 2004, contaminants were also found in three perched groundwater grab samples obtained at the boring locations for MW-02, MW-03, and MW-04. The analytical results indicated that DCE was present above its respective MDEQ Target Remedial Goal (TRG) in two of the three grab samples taken from the perched groundwater borings that became MW-02 and MW-04. Groundwater analytical data also indicated that n-propylbenzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene were detected above their respective MDEQ TRG in the grab groundwater sample from the boring that became monitoring well MW-02. One soil sample collected during the installation of MW-03 indicated the presence of VOCs at concentrations exceeding the method detection limits at a depth of 26 feet.

In 2009, a soil vapor study was performed that detected VOCs in the soil vapors from 3 to 12 feet deep below the plant floor as depicted in the April 2009 *Groundwater Assessment Report,* Figure 3 provided in Appendix A for reference.

Soil samples were collected from beneath the building from 0 to 62 feet bgs and analyzed for VOCs in another phase of the investigation. VOCs were detected in soil as shown in the April 2009 *Groundwater Assessment Report*, Figures 12 and 13 in Appendix A.

These investigations beneath the building footprint confirmed that commingled plumes of DCE and dioxane extend from upgradient of the source area, beneath the plant building, and southwest and offsite.

The presence of dioxane is presumed to be related to its use as a stabilizer in 1,1,1-trichloroethane (TCA), a solvent used in the past at the KEC site. DCE is a breakdown product of TCA. DCE and dioxane have been identified as the primary Constituents of Concern (COC) at this site. Other COC include TCA and carbon tetrachloride (CT).

As a result of the discovery of the groundwater contamination and subsequent investigations of soil and groundwater, Borg Warner submitted the CAP dated March 2011 (Arcadis) to MDEQ. The CAP targeted an area beneath the building as the source area contributing to the groundwater impact by the COC as shown in Figure 2. It presented three objectives to mitigate impacts to the VOC contaminant plume. The three objectives are listed below:

1. *Ensure COC concentrations in soil and groundwater in the contaminant source area beneath the KEC manufacturing building are at levels protective of site workers.*
2. *Reduce COC concentrations in soil in the contaminant source area beneath the KEC manufacturing building to the extent that remaining concentrations no longer contribute to, or exacerbate COC concentrations in off-site groundwater.*
3. *Reduce COC concentrations in off-site groundwater to levels protective of downgradient groundwater receptors.*

1.2 CAP Recommendations

The CAP recommended using Air Sparging (AS) methods together with SVE in order to accomplish these objectives. The CAP proposed a conceptual SVE system that would include ten extraction wells placed within the source area to a depth of 80 feet bgs with 50-70 feet screen length, and included twenty-three air sparging wells installed within the estimated effective extraction area but into the groundwater to a depth of 90 feet bgs. The plan also proposed to use a pilot test to determine the locations and the final design of the SVE system.

After review of the CAP and previous investigations, EMS prepared an SVE Pilot Test Plan on behalf of KEC and submitted to MDEQ in January 2012. The plan was approved by MDEQ March 1, 2012. EMS performed the pilot test May 12-13, 2012 to collect the information required for specific design of the SVE treatment system. This report describes the pilot test and proposes the conceptual design for the full scale SVE

treatment system and monitoring program. The pilot test only evaluated SVE treatment and did not include a study of air sparging at this time, primarily due to the concern for the unpredictable dispersion of COC and potential to cause vapor intrusion into the overlying employee work space using conventional air sparge techniques.

2.0 SVE Pilot Test

The objective of the SVE pilot test was to evaluate the potential use of SVE as a remedial approach to accomplish the CAP objectives, and to provide information for the final design of a full scale SVE system. Examination of the information generated by previous investigations with regard to the location of the targeted contaminant source and the corresponding borelogs, analytical results, etc., within this area, indicated that the subsurface soil types and characteristics varied between the surface and the groundwater interface at approximately 60 feet bgs. Also, observation indicates that detections of the target constituents reported in the previous investigations were limited to a vertical interval above approximately 38 to 44 feet bgs. With these conditions noted, the proposed SVE Pilot test considered the need to evaluate the vertical intervals independently, providing information for potential optimization opportunities for the design.

2.1 Equipment and Installation

The SVE pilot test included the installation of an extraction well pair screened at distinct depth ranges, placed near the center of the reported soil contamination plume, and five observation well pairs corresponding to the extraction well depths, as shown on the attached Figure 3. The two extraction wells were installed on April 28, 2012. The ten observation wells were installed on April 21, 22, and 28, 2012. Boring logs corresponding to the six deep well locations are provided in Appendix B. The six shallow well precise depths were set based on information gathered during the installation of the deep borings as they were in close proximity to each other. The extraction well pairs were installed using rotary drilling methods following direct push sampling and the observation well pairs were installed using direct push techniques. Exact placement of the well locations was based on the locations of facility equipment, foundation footings, interval spacings, and other building structures.

2.1.1 Installation of Soil Borings

Each deep observation well boring was advanced using Geoprobe® direct-push technology while four-foot undisturbed continuous intervals were collected. The deep

extraction well was pre-drilled using direct push technology prior to installation of the well by rotary drilling techniques, so that the geology of that location could be verified and sampled. A photoionization detection meter (PID) was used to measure headspace vapor for soil samples collected in individual plastic resealable bags from each interval throughout the course of the drilling. In addition to resealable bags, a sample from each "push" was placed in a laboratory supplied sample container using disposable spoons and placed on ice. Samples that corresponded to the highest PID vapor readings were selected and sent for laboratory analysis. The unused samples were disposed of as investigative derived waste (IDW).

Soil samples collected from the well borings were analyzed for VOCs using EPA Method 8260B. Copies of the soil laboratory analytical reports are contained in Appendix C, and the data is summarized in Table 1. The VOC analyses revealed concentrations in soil of DCE ranging from 7.6 to 31.3 µg/kg in the shallow zone from 4-24 feet bgs. Also, concentrations of TCA ranged from 5.54 to 47.8 µg/kg in the soil sampled from 4-28 feet bgs. However, dioxane and CT were not detected in the SVE soil samples. The VOC analyses from the pilot test for the soil in the deep zone (30 feet bgs and deeper) exhibited no detections of the COC.

Data from the April 2009 *Groundwater Assessment Report* indicated the highest concentrations of COC in the soil at depths of 2-38 feet bgs, with results ranging from 27.8 to 960 µg/kg for DCE and from 2.3 to 110,000 µg/kg for dioxane.

2.1.2 Collection of Geotechnical Data

Four soil samples were composited from the boreholes for geotechnical analyses from depth ranges of 0-8 feet, 8-28 feet, 28-68 feet, and 40-72 feet. The composite sample depth ranges were selected by review of the boring logs. Like soil types were grouped based on visual classification of the soil types observed during sample collection. The two soil samples from 0-8 feet and 8-28 feet were tested for hydraulic conductivity in accordance with ASTM D5084, the test method for measurement of hydraulic conductivity for porous materials. The granular soil samples from 28-68 feet and 40-72 feet were tested for permeability in accordance with ASTM D2434, the test method for measurement of permeability of granular soils. The four soil samples were also tested for particle size distribution using standard sieve analyses. The shallow zone consisted of silty, fine sand with clay and gravel inclusions. The deep zone consisted of granular materials ranging from fine sands to coarse sands with gravel inclusions. The higher

permeability of the deeper soil zone is characterized by higher percentages of sand and less silt/clay than the shallow zone. Copies of the geotechnical analytical reports are contained in Appendix D and are summarized in Table 2. These results correspond to boring logs from previous investigations.

Intrinsic permeability is a measurement of the capacity of the zone to move fluids through the soil and can be calculated using hydraulic conductivity, the viscosity and density of water, and the acceleration due to gravity. Based on Exhibit II-6 in *Chapter II, Soil Vapor Extraction,* of the Environmental Protection Agency's (EPA) *How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites*, intrinsic permeability values of 10^{-10} cm^2 and greater are appropriate for SVE application. Using the hydraulic conductivity reported for the 8-28 feet sample, the intrinsic permeability of the shallow zone was calculated to be 10^{-10} cm^2. Even though this is at the lower range for SVE application, the pilot study results validated the use of SVE in the shallow zone. The lower zones from 28 to 72 feet bgs exhibit an intrinsic permeability of 10^{-7} cm^2, indicating SVE could also be applied at this depth, if COC concentrations warranted active remediation.

2.1.3 Installation Well Data

The extraction wells were constructed of 4-inch diameter, 10-slot PVC well screen as opposed to of the 2-inch diameter, stainless steel wire-wrapped well screen specified in the SVE Pilot Test Plan submitted to MDEQ due to material availability issues.

The observation wells were constructed of 1-inch diameter PVC well pairs as shown on Figure 3. Wells SVE-OBS-SHAL-01 and SVE-OBS-DEEP-01 were both installed 5 feet from their respective extraction well. Similarly, SVE-OBS-SHAL-02 and SVE-OBS-DEEP-02, SVE-OBS-SHAL-03 and SVE-OBS-DEEP-03, SVE-OBS-SHAL-04 and SVE-OBS-DEEP-04, and SVE-OBS-SHAL-05 and SVE-OBS-DEEP-05 were placed 10, 20, 40, and 80 feet from the extraction wells, respectively. Each well pair consisted of a shallow zone and a deep zone well placed and screened at depths similar to the corresponding extraction wells. The shallow zone extraction well and its 5 shallow observation wells were installed to approximately 24 feet bgs (screened from 4 to 24 feet bgs). The deep zone extraction well and its 5 deep observation wells were installed to approximately 68 feet bgs (screened from 28 to 68 bgs). The deep zone wells were all installed approximately 4 feet into the saturated zone. Table 3 summarizes the well construction details.

2.2 Pilot Study Activities

After installation of the wells required for performing the pilot study, SVE equipment was mobilized to perform the tests. Proact Services Corporation supplied the SVE unit and operated the system during the pilot study. The SVE test vacuum unit utilized a 20-horsepower, high-vacuum, oil sealed liquid ring pump capable of removing air at 100 standard cubic feet per minute (SCFM) at a vacuum of 28 inches of mercury. The unit's power was provided by a portable diesel generator. The system was equipped with Magnehelic® vacuum and pressure gauges and flow meters which were monitored to record the test data. The unit also included a knock-out tank for water removal as necessary. No water accumulated in the tank during the testing. Two activated carbon units placed in series were used as a final treatment of the vapors leaving the SVE system. PID readings and grab air samples were collected at the discharge of each carbon unit with results included in Table 5. At the completion of the test, the carbon was transported to the KEC drum holding area to be reused or disposed of properly.

The SVE pilot study was performed in the former components room and shipping area in the KEC facility. Typical weekend operations, which include painting and maintenance activities, occurred during both days of testing. These operations do not appear to have affected the air sample results based on comparison to ambient air data collected during the January 2010 *Vapor Intrusion Survey Summary* prepared by EMS. Vapor concentrations and constituent types were consistent between the two data collection efforts.

The pilot study began on May 12, 2012 with the shallow zone test and ended May 13, 2012 with the deep zone test. During the two days of testing, five different flow rates (steps) were applied to the shallow extraction well on the first day, and the deep extraction well on the second day to evaluate the amount of vacuum that could be achieved within the each zone at each respective flow rate. During each flow rate step, the vacuum responses for the extraction well and the ten observation wells were recorded approximately every 15 minutes. Vacuum responses at the extraction and observation wells were measured using Magnehelic® gauges mounted to the monitoring wells.

Each flow rate step was maintained until vacuum responses at each observation well equilibrated. This typically took approximately 30-45 minutes. At the conclusion of each round of data observations, the vacuum unit operations were verified by review of

the various onboard flow meters, vacuum gauges, and temperature sensors. The vacuum responses and other field data are summarized in Table 4.

2.3 Pilot Study Results

The vacuum readings that were recorded during the pilot test were tabulated and evaluated after the testing. Vacuums applied at the shallow zone extraction well created measurable responses at each shallow observation well up to the maximum observable distance of 80 feet from the well. The radius of influence is estimated to be a minimum of 80 feet. These ranged from 0.4 inches of water at 80 feet from the extraction well to 34 inches of water at 5 feet from the extraction well. Elevated vacuum responses at given flow rates applied were observed during the shallow zone test, most likely attributable to the lower permeability of the soils in the shallow zone. The shallow zone vacuum readings are shown on the attached Figure 4. The deep observation wells were also observed during the shallow zone test, and the deep zone showed a response ranging from 2.67% to 20% of the corresponding shallow observation well response at the maximum flow rate step.

The tests within the deep zone exhibited obviously lower vacuum responses than the shallow zone at the deep extraction well and the deep observation wells at the achievable flow rates, with the exception of the 80 foot observation location where both zone responses were similar. The lesser developed vacuums were most likely attributable to the higher permeability of the soils in the deep zone. The deep zone vacuum readings are represented on Figure 5. The shallow zone responses during the deep test ranged from 27% to 88% of the response of the corresponding deep observation wells at the maximum flow rate step. This result indicates some connectivity between the two zones and reinforces that shallow contaminants could be drawn deeper into the subsurface if vacuums are applied in the deep zone.

In addition to recording the vacuum responses, a PID meter was used to record relative VOC concentrations of the SVE system exhaust and the carbon treatment system discharge. These readings were used as a relative representation of the amount of contaminants in the SVE system exhaust and the carbon treatment system at both stages. The SVE system exhaust was evaluated as an immediate relative representation of the effectiveness of the SVE system in removing contaminants. The evaluation of the carbon treatment system discharge was used to ensure that the discharged vapor treatment system remained effective. If the PID readings had indicated break through, operations

would have been halted and the carbon would have been replaced, however, this was not necessary. A summary of the field data is presented in Table 4.

2.4 Pilot Study Data Collection and Analysis

The following sections describe the collection of air and ground water samples during the pilot study and the resulting analytical data.

2.4.1 SVE Soil Vapor Data

Soil vapor sampling was performed before, during, and after the test events utilizing 6-liter SUMMA canisters to obtain discrete samples for analysis. Grab (instantaneous) samples were collected from the shallow and deep extraction wells, observation wells SVE-OBS-SHAL-04 and SVE OBS-DEEP-04, the SVE vacuum unit sampling port (SVE-SP15), and the SVE carbon treatment system (SVE-Carbon-Post) using stainless steel SUMMA canisters under vacuum. The wells were sampled before and after the testing; the SVE vacuum unit sampling port was sampled during operation of the unit, and the SVE carbon treatment system was sampled after the completion of the testing.

For the observation and extraction well samples, tubing was placed in the well within the middle of the screened interval depth, and a PID meter was used to measure the relative VOC content in the well. This also allowed for a purging of the tubing in the well. After the PID reading was obtained, the SUMMA canister was immediately connected to the tubing to sample the vapors collecting in the screened interval. These samples were collected to augment the data from the SVE pilot system manifold samples collected during the operation of the unit. The soil vapor sample results showed an increase of the DCE concentration in the vapors from the shallow extraction well, from 197 $\mu g/m^3$ before the test to 632 $\mu g/m^3$ after the test (after the SVE extraction piping was removed from the well). There was also a slight increase in the concentration of dioxane in the vapors of the shallow extraction well from 224 $\mu g/m^3$ before the test to 335 $\mu g/m^3$ after the test.

The DCE concentration in the soil vapors from the deep extraction well were not detected before the test and were 11,801.86 $\mu g/m^3$ after the test. Dioxane was not detected in any of the soil vapor samples from the deep extraction well. This demonstrates the potential for contaminants to move downward to the more permeable zone where the COC were not detected via soil sampling when a vacuum is induced in the lower zone, which is undesirable.

The soil vapor sample results for DCE from observation wells SVE-OBS-SHAL-04 and SVE OBS-DEEP-04 were 7,205 and 1,175 µg/m^3, respectively, before the SVE testing began. DCE was not detected in either observation well after the test concluded. This likely indicates that the DCE vapors present within the sampled observation well were removed during the test, and immediately following the test, there was not enough time to allow the DCE vapors to recharge within the well. This phenomenon is mitigated during full scale implementation by pulsing the system, which entails discontinuing extraction activities at certain wells for a period of time to allow for vapors to release from soil particles and move into the vapor space. This allows the vapors to be available for removal when vacuum operations are recommenced.

The SVE vacuum unit flow was sampled before the pilot study began on May 12 as a baseline sample before the system was connected to either extraction well. The exhaust was then sampled during the shallow zone and deep zone tests, once in the early stages of each test and then later toward the end of testing for that day, to evaluate the SVE system effectiveness with respect to the removal of VOCs. Samples were collected from the carbon treatment system near the conclusion of testing on May 12 and May 13 to determine if VOC breakthrough may have occurred through either of the two series-connected carbon vessels. All soil vapor samples collected utilizing this method were analyzed using EPA method TO-15 to measure the VOCs collected in the sample containers.

Untreated soil vapor samples tested from the SVE system during the shallow zone test showed much higher concentrations in the vapor being removed from the soil than the deep zone test. The vapor concentrations of DCE from samples collected during the shallow test ranged from 85,000 to 140,000 µg/m^3. During the deep test, DCE vapor concentrations ranged from 4,400 to 6,800 µg/m^3. The results of the soil vapor samples from the SVE system indicate that post treatment may be required in the final SVE system design. The post carbon treatment sample results (SVE-Carbon-Post-01 and 02) showed low to no detections of several VOCs, and the VOCs detected were also detected in the ambient air samples. There were no detections of the COC in the post carbon treatment samples. Activated carbon polishing of the exhaust would be effective given the low concentrations of COC and other VOCs observed during the pilot, if deemed necessary after startup testing confirms actual concentrations to be exhausted. Copies of

the laboratory analytical reports for the soil vapor samples are contained in Appendix E and summarized in Table 5.

2.4.2 Ambient Air Data

Ambient air samples were collected using 6-liter SUMMA canisters equipped with a calibrated 8-hour flow orifice in order to obtain a composite sample during the testing periods. The SUMMA canisters were placed in two different locations near the extraction and observation wells during each day of testing. These locations are noted on Figure 3. The containers were placed before testing began and were removed at the conclusion of testing each day. The times and vacuum readings were recorded when each container was placed and when they were removed. The samples were analyzed for VOCs using EPA Method TO-15.

The results from all four samples showed very low concentrations to no detection of the targeted VOCs. None of the samples resulted in an exceedance of the Occupational Safety and Health Administration's (OSHA) Permissible Exposure Limits (PEL), National Institute for Occupational Safety and Health's (NIOSH) Recommended Exposure Limits (REL) or American Council of Governmental Industrial Hygienists' (ACGIH) Threshold Limit Values (TLV).

There were no detections of dioxane in the four ambient air samples. The ambient air samples for Area 1 resulted in DCE and other VOC measurements several orders of magnitude below standard permissible limits. Additionally, sampling shows that the SVE pilot test did not cause an increase in COC concentrations in indoor air. When comparing to ambient air data from the January 2010 *Vapor Intrusion Survey Summary* prepared by EMS (which considered all background concentration throughout the facility) the concentrations measured during the SVE pilot test were similar in concentration and types of VOCs observed. These results show that the SVE technology can be used at the facility without adversely impacting worker safety.

The ambient air results discussed above are included in the air analytical reports in Appendix E and are summarized in Table 6.

2.4.3 Groundwater Data

Water levels in the deep extraction well and the five deep observation wells were measured before testing began each day. The levels recorded both days were

approximately 64 feet bgs as indicated in Table 3. Groundwater samples were collected from the deep extraction well on May 12, 2012 using a new hand bailer. The samples were then preserved on ice before shipping to a laboratory to be analyzed for VOCs using EPA Method 8260C.

The VOCs exceeding MDEQ's Tier 1 TRGs were DCE (140 µg/l), dioxane (15 µg/l), chloroform (1.6 µg/l), 1,2-dichloroethane (5.2 µg/l), and 1,1,2-trichloroethane (13 µg/l). Copies of the groundwater analytical reports are contained in Appendix F, and the results are summarized in Table 7. Data was collected from this well as a benchmark moving forward for comparison of future ground water monitoring to determine effectiveness of source area remediation on ground water concentrations.

2.4.4 Analytical Results Summary

In summary, the results of the SVE analytical data exhibited the following:

- Geotechnical testing results indicate the permeability of soils in each zone is within the appropriate ranges for SVE treatment based on technical guidance.
- VOC detections in soil were limited to the shallow zone with no detection of VOCs in the deep zone soil. There were no TRG exceedances.
- The soil vapor sample results showed an increase in concentration of VOC constituents in both the shallow extraction well and the deep extraction well after each test compared to before the test.
- Substantially higher concentrations of VOCs were observed in the SVE exhaust during the shallow test compared to the deep test.
- Eight-hour ambient air testing in the manufacturing building did not show contaminant concentrations above the OSHA, NIOSH, and ACGIH published limits. The SVE system did not produce conditions that would adversely affect worker safety based on these published standards.
- VOC analysis of groundwater from the deep extraction well (SVE-EXT-DEEP) showed exceedances of MDEQ's Tier 1 TRGs for multiple constituents, including DCE, dioxane, chloroform, 1,2-dichloroethane, and 1,1,2-trichloroethane which is consistent with results detailed in the CAP and consistent with past groundwater sampling within the area. All of these compounds except dioxane are readily amenable to treatment by SVE, with dioxane being partially amenable.

3.0 Conclusions

The SVE pilot study collected both analytical and physical data which validated SVE as a feasible remedial strategy to remove the COC from the soil. Soil sampling showed higher concentrations of VOCs in the shallow zone with no detection of VOCs in the zone below 30 feet bgs, which is consistent with previous findings.

The shallow zone vacuum responses were greater in magnitude than the corresponding deep zone vacuum responses at similar flow rates at most of the locations observed. This is consistent with the geotechnical characteristics of the soils obtained from the zones and previous well log observations. These differences between the two zones will be considered in the final design.

Based upon results from this pilot test and previous data, the residual contaminant mass resides predominantly in the zone from 0 to approximately 24 feet bgs. The pilot test confirms that this zone will be amenable to SVE to reduce the COC levels based on the observed vacuums achieved, the radius of influence documented, the sustained level of concentrations of COC in the SVE exhaust before carbon treatment, and that SVE can be employed safely at the facility. Therefore, SVE is an appropriate technology to apply within the shallow source area.

Although pilot testing indicated adequate vacuum response to SVE at similar radii for the deep extraction well as compared to the shallow zone, contaminants were not present in substantial concentrations in the exhaust gas from the deep zone when compared to the shallow zone. In addition, SVE applied to the deep zone would have little effect for protection of ambient air quality in the facility, and based upon the test results, the potential exist that shallow contaminants could be pulled downward, possibly exasperating the groundwater conditions

As discussed previously, there is a natural segregation of the subsurface soil characteristics into two vertical zones: the shallow zone from the ground surface to about 24 feet bgs, and the deep zone from about 24 feet bgs to 68 bgs. The pilot test resulted in vacuum responses, at practically achievable flow rates, within the shallow zone that should be satisfactory for the effective removal of VOCs. The following table lists the vapor pressure and Henry's law constant for the COC as listed on EPA's Risk Assessment Information System:
(http://rais.ornl.gov/cgi-bin/tools/TOX_search?select=chem_spef).

Table 3.1
SVE Related Parameters

Constituent	Vapor Pressure mm Hg	Boiling Point ºC	Henry's Law Constant atm * m^3/mol
SVE effective range	> 0.5	<250	>0.00180
1,1-dichloroethene	634	31.6	0.0261
1,4-dioxane	38.1	102	0.0000048
1,1,1-trichloroethane	124	74	0.0172
carbon tetrachloride	115	76.8	0.0276

According to information found in *"Chapter II, Soil Vapor Extraction"*, of the EPA publication, *"How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites"*, constituents with vapor pressures higher than 0.5 mm Hg and Henry's Law constants greater than 100 atmospheres (0.00180 atm*m^3/mol @ 20º C) are considered amenable to removal by SVE, with vapor pressure being *"the most important constituent characteristic in evaluating the applicability and potential effectiveness of an SVE system"*.

There are substantial physical limitations with respect to the locations possible for SVE system components, wells, and accompanying apparatus within the operations building. Facility operational capability must be incorporated into the SVE system design. Therefore, a grid network consisting of many SVE wells (and possibly air sparge wells) may not be feasible. Furthermore, data collected to date indicates that a focused extraction in the shallow zone at the known source area would be the most effective remedial approach.

The potential for vapor intrusion and also dispersion of the contaminant plume exists if a conventional air sparging system were to be included as part of the remedial design. Additionally, the higher permeability of the lower zone creates the potential for widespread vapor migration. Therefore, KEC does not consider this an appropriate technology below the facility.

Based upon the results of this pilot test, KEC proposes to install an SVE system in the shallow soils only at the facility. This action is intended to fulfill the first two objectives of the CAP, to protect worker safety and to reduce the COC levels at the source. The

final objective of the CAP, reduction of off-site groundwater concentrations, will be addressed in part by the expected source area reductions. KEC will re-evaluate groundwater remedy options after the SVE system is operational. KEC will submit a CAP addendum or revised CAP outlining the groundwater remedy that appears most appropriate given the cumulative data at that time.

4.0 Full Scale Design Elements

Given the findings of the pilot test observations and analytical results, the application of SVE technology appears to be feasible for the reduction of the concentrations of volatile components within the soil located in the subsurface of the known source area and is consistent with the objectives of the CAP. The conclusions reached in the pilot test also support the current view that aggressive sparging, as initially planned in the CAP, may conflict with the objectives regarding the protection of worker health and safety and contaminant migration. A conservative approach will be taken to design and implement corrective action of the impacted soil within the shallow zone via SVE methodology only such that the CAP objectives with respect to removal of the target COC from soil are achieved in a safe and monitored manner. Site specific Target Remediation Goals (TRGs) will be established for the site after the performance of an upcoming Tier 2 risk evaluation. The final design will take this and supporting upcoming investigations into account with regards to system layout.

Considering the physical characteristics of DCE, TCA and CT, SVE will readily reduce the concentrations present in soil and soil vapors in the targeted treatment area. Removal of the TCA, the parent product, will reduce the risk of the formation of its daughter product, DCE. During the pilot test, DCE, TCA, and CT were detected in the untreated SVE exhaust.

Dioxane exhibits a lower vapor pressure than DCE but is still above the recommended minimum vapor pressure for applicability of SVE as an effective remedial technology. The effectiveness of SVE for the removal of dioxane is less than optimal, however the increase in dioxane concentrations in the shallow extraction well during the pilot test indicate removal was occurring. However, due to the relatively high concentrations of other COC in the untreated SVE exhaust samples, dilution (and consequent increase in MDLs) precluded possible accurate detection of dioxane in the untreated SVE exhaust.

The current remedial strategy is a conceptual design that focuses on the known core source area and based upon the pilot test results, takes advantage of the subsurface conditions to optimize the area of effectiveness. In addition, it takes into consideration the physical constraints that exist with respect to the building design and operational needs.

The conceptual design includes a total of three shallow vacuum extraction wells located in close proximity to the predominant contaminant source, individual dual cased well recovery piping in protected locations to an outside vacuum source, discharge soil vapor treatment, and a network of monitoring well locations within the plant for operational and compliance monitoring.

The design recommends the installation of two additional 4-inch diameter, stainless steel extraction wells (with wire-wrapped screen) to be used in conjunction with the existing shallow extraction well installed during the pilot test. Additionally, four 1-inch diameter PVC observation wells are proposed to be added to complement the five existing shallow observation wells to monitor the effects the system imposes on the subsurface conditions. The proposed well locations are shown in Figure 6.

4.1 Well Installation

The soil sampling detected higher concentrations of COC in the shallow zone, and the deep zone samples exhibited no detections of COC. Due to the proximity of the shallow zone to the potential exposure pathway and the soil sample results, the recommended extraction well depths are to the top of an approximately 2-foot thick, consistently observed clay layer occurring at approximately 24 feet bgs (with approximately 20 feet of screen) to focus recovery efforts effectively. Three extraction wells will be spaced approximately 20-25 feet apart in a cluster arrangement, near the center of the contaminant plume, in order to increase the flow rate of soil vapor removed as well as increase the capture area in the source zone. Final locations of the extraction wells will account for obstructions such as walls or foundations and will consider operational needs of the facility. Also, well vaults will be installed to withstand normal traffic in the facility, such as forklift traffic. The wells have been strategically placed in order to uniformly pull the contaminants toward the center of the plume to avoid smearing and contradictory air flow patterns.

4.2 SVE System

Based on the pore volume exchange time and volume of soil requiring treatment, an overall flow rate for the wells as located based on the observed ROI and targeted treatment area footprint can be determined using the following equation:

$$Q = \frac{\varepsilon V}{E}$$

Where:

$$Q = \text{ total vapor extraction flowrate } \left(\frac{ft^3}{min}\right)$$

$$\varepsilon = \text{soil porosity } \left(\frac{ft^3 \text{ vapor}}{ft^3 \text{soil}}\right)$$

$$V = \text{volume of soil to be treated } (ft^3 \text{ soil})$$

$$E = \text{pore volume exchange time } (min)$$

The volume of soil to be treated is estimated using the total coverage area of the three extraction wells proposed and a depth of 0 to 24 bgs. Soil porosity used is based on geotechnical sampling and literature reference. Recommended pore volume exchange times range from 8 to 24 hours. Therefore, flow rates in the range of 180 CFM to 539 CFM are appropriate for the given conditions. A conservative pore volume exchange time for blower sizing will be used, so that any uncertainties with respect to system performance can be compensated by the additional capacity provided. A blower capable of removing approximately 500 CFM will theoretically exchange the pore volume of the targeted treatment area approximately 3 times per day of operation. Choosing an initial design flow rate of 270 CFM (90 CFM per extraction well), will exchange the target area calculated pore volume approximately 1.5 times per day (every 16 hours). This flow rate will also allow the 3 extraction wells to be operated at extraction values demonstrated to be achievable during the pilot test at approximately 110 inches of water vacuum. In addition, having additional removal capacity allows the possibility of adding extraction wells in the future if effectiveness monitoring or further investigation indicates a need. This vacuum level and flow rate are readily achieved by various blower types including: rotary lobe blowers, rotary vane pumps, and liquid ring vacuum pumps (LRVP). Based on experience, the LRVP is the best choice for this application as it requires a minimal amount of maintenance, operates reliably, and is less obtrusive to the surrounding environment with respect to noise generated.

The SVE system will be equipped with Magnehelic® vacuum and pressure gauges and flow meters capable of providing accurate data. Additionally all extraction wells will be piped independently to the SVE system so that operational control and flexibility are maintained. No water was collected from the aquifer during the conduction of the pilot test, but for long term operations, the unit will include a knock-out tank for water removal as a precaution. The sizing of emissions control equipment will be determined during the final design.

4.3 Air Sparging Discussion

An air sparging system has not been included in conjunction with the SVE system design due to the lack of evidence of significant source contamination in the deep soil zone, the stated concerns with respect to potential vapor intrusion, and the observed differences in the air flow characteristics observed during the pilot test. The possibility of vapor intrusion into the manufacturing building during operation of a conventional air sparging system is unacceptable to KEC. Also, the potential exists that aggressive air sparging may disperse the contaminant plume which would further complicate remediation. Other options for groundwater treatment are being evaluated that are less intrusive and with less inherent risks, that will meet stated CAP objectives.

4.4 Performance Monitoring

A performance monitoring plan will be developed and implemented to determine the level and rate of source reduction including a reporting schedule. An Operations and Maintenance (O&M) Plan will be developed using manufacturer's recommendations to sustain the operational capability of the total system. Personnel will monitor the performance of the system at routine intervals including observation well monitoring with respect to system influence. As a failsafe, the SVE system will be equipped with emergency shutdown controls in the event of a malfunction or emergency.

The four additional observation wells that will be installed to augment the five existing shallow observation wells already installed will be used to monitor concentrations of COC in soil vapor and vacuum response. This will document the effectiveness of the system in providing a negative pressure gradient. Observation well vapors will be monitored using a PID meter to document fluctuations of relative VOC concentrations with time. All records and observations will be reported in periodic performance reports.

Soil vapor samples from the SVE system exhaust will be monitored as an indication of system effectiveness and to ensure that no additional emission controls are required for the system. Periodic monitoring of the indoor ambient air near the extraction wells will also be measured to ensure worker safety. The piping from the wells to the SVE vacuum system will be tested and monitored initially for leaks and then on a routine basis during operation.

Routine groundwater monitoring of existing wells MW-10, MW-30, and MW-31 will continue and be used to evaluate contaminant concentration trends. These four wells will be sampled quarterly rather than semi-annually during the first year of SVE system operation. Groundwater from the deep extraction well SVE-EXT-DEEP, which was installed for the pilot study, will also be sampled quarterly for one year to evaluate the impact of the SVE system on the contaminant plume.

4.5 Schedule

Upon approval of the pilot test report and overall design approach, a detailed installation design and Quality Assurance Project Plan (QAPP) will be developed and submitted for approval within 60 days.

References

Corrective Action Plan, Kuhlman Electric Corporation Facility, Crystal Springs, Mississippi, March 2011 (Arcadis)

Preliminary Groundwater Assessment Report, Kuhlman Electric Corporation, Crystal Springs, Mississippi July 2004 (Martin & Slagle)

Groundwater Assessment Report, Kuhlman Electric Corporation, Crystal Springs, Mississippi April 2009 (Martin & Slagle)

ASTM Test Method D2434 Standard Test Methods for Permeability of Granular Soils

ASTM Test Method D5084 Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials

How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites - A Guide for Corrective Action Plan Reviewers, (Environmental Protection Agency)

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY

SVE Pilot
Kuhlman Electric Corporation
Crystal Springs, MS

Constituent	Tier 1 TRG* Unrestricted	SVE-EXT-Deep-6'	SVE-EXT-Deep-30'	SVE-OBS-Deep-01-6'	SVE-OBS-Deep-01-30'	SVE-OBS-Deep-02-6'	SVE-OBS-Deep-02-26'	SVE-OBS-Deep-02-66'	SVE-OBS-Deep-03-6'	SVE-OBS-Deep-03-66'	SVE-OBS-Deep-04-2'	SVE-OBS-Deep-04-54'	SVE-OBS-SHAL-05-66'	SVE-OBS-DEEP-05-6'
Sample Date		4/21/2012	4/21/2012	4/21/2012	4/21/2012	4/21/2012	4/21/2012	4/21/2012	4/22/2012	4/22/2012	4/22/2012	4/22/2012	4/28/2012	4/28/2012
Volatile Organic Compounds														
1,1,1 -Trichloroethane	1,190,000	42.3	<4.82	47.8	<4.36	15.6	16.6	<4.76	5.54	<4.29	<4.48	<5.32	<4.19	<4.32
1,1 -Dichlorethene	77.2	12.3	<4.82	31.3	<4.36	13.6	<4.95	<4.76	7.6	<4.29	<4.48	<5.32	<4.19	<4.32
1,4-Dioxane	58,100	<174	<193	<169	<174	<176	<198	<190	<172	<172	<179	<213	<168	<173
2-Butanone	84,500	<8.70	<9.63	<8.45	<8.71	<8.8	<9.9	<9.52	<8.58	<8.58	15.4	<10.6	<8.39	<8.64
Acetone	7,820,000	<43.5	<48.2	<42.2	<43.6	<44	<49.5	<47.6	<42.9	<42.9	117	<53.2	<4.19	<43.2

Notes:

All results/standards in units of: µg/kg - micrograms per kilogram
* MDEQ Target Remediation Goals (TRGs) - Unrestricted
BOLD indicates exceedance

TABLE 2
GEOTECHNICAL ANALYTICAL RESULTS SUMMARY

SVE Pilot
Kuhlman Electric Corporation
Crystal Springs, MS

		Depth Below Ground Surface (ft)			
	Porosity[1]	0-8[2]	8-28[2]	28-68[2]	40-72[2]
Soil Type		%	%	%	%
Fine Gravel	0.34	0	23	11	5
Coarse Sand	0.39	1	8	3	1
Medium Sand	0.41	3	16	29	22
Fine Sand	0.43	6	36	50	64
Silt	0.45	79	14	7	8
Weighted Porosity (%)		0.447	0.405	0.415	0.422
Conductivity (cm/sec)		3.41E-07	4.43E-05	1.45E-02	1.01E-02

1 Mean Value taken from Table 3.2 Representative Porosity Values, McWorter and Sunada(1977)

2 Lab results from soil sampled 5/22/12

Table 3
Extraction and Observation Well Construction and Elevation Data
SVE Pilot Test
May 2012
Kuhlman Electric Corporation
Crystal Springs, Mississippi

Well Construction Details							GW Depth/E	
Well No.	Date Installed	Distance from Extraction Well (ft)	Screen Length (ft)	Screen Interval (ft bgs)	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Depth to GW 05-12-2012 (ft from TOC)	GW Elevation 05-12-12 (ft)
SVE-EXT-DEEP	4/28/2012	0	40	28-68	469.10	468.62	63.77	404.85
SVE-OBS-DEEP-01	4/21/2012	5	40	28-68	469.07	468.78	63.91	404.87
SVE-OBS-DEEP-02	4/21/2012	10	40	28-68	469.05	468.83	64.02	404.81
SVE-OBS-DEEP-03	4/22/2012	20	40	28-68	469.03	468.86	64.05	404.81
SVE-OBS-DEEP-04	4/22/2012	40	40	28-68	469.01	468.82	63.97	404.85
SVE-OBS-DEEP-05	4/28/2012	80	40	28-68	469.00	468.51	63.76	404.75
SVE-EXT-SHAL	4/28/2012	0	20	4-24	469.11	468.62	--	--
SVE-OBS-SHAL-01	4/21/2012	5	20	4-24	469.07	468.77	--	--
SVE-OBS-SHAL-02	4/22/2012	10	20	4-24	469.05	468.81	--	--
SVE-OBS-SHAL-03	4/22/2012	20	20	4-24	469.04	468.79	--	--
SVE-OBS-SHAL-04	4/28/2012	40	20	4-24	468.98	468.82	--	--
SVE-OBS-SHAL-05	4/28/2012	80	20	4-24	468.96	468.52	--	--

1) GW = groundwater

Table 4
Pilot Study Data

System Readings													Extraction and Observation Well Vacuums (in. H2O)												
Operator	Time and Date	LRP Hour Meter	LRP Temperature (F)	Outside Temperature (F)	SVE Flow Rate (CFM)	Total cubic feet (CF)	Vacuum at Extraction Well Head (in. Hg)	LRP Pressure (in. H2O)	PID LRP	1st Stage Carbon (in. H2O)	PID after 1st stage	2nd Stage Carbon (in. H2O)	PID after 2nd stage	SVE-EXT-SHAL	SVE-OBS-SHAL-5'	SVE-OBS-DEEP-5'	SVE-OBS-SHAL-10'	SVE-OBS-DEEP-10'	SVE-OBS-SHAL-20'	SVE-OBS-DEEP-20'	SVE-OBS-SHAL-40'	SVE-OBS-DEEP-40'	SSVE-OBS-SHAL-80'	SVE-OBS-DEEP-80'	GW Extracted (Gal)	Observations
FS	5/12/2012 8:00	1366	174	75	40.4	131	19.4	10	0	10	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	Test start up
FS	10:55	1367	160	74	0		0	0		0		0		0	0	0	0	0	0	0	0	0	0	0	0	Reset system
FS	11:10	1367	160	74	0		0	0		0		0		0.014	0.06	0.173	0.054	0.137	0.06	0.13	0.03	0.105	0.05	0.09	0	Back ground data
FS	18:00	1373	175	75	16.2		22.95	1.5	348	0.7		0.03		14	4	0.2	3.8	0.21	2.5	0.15	0.65	0.093	0.5	0.06	0	Start on step 1
FS	18:15	1373	175	75	14.76	15951	22.95	1.5	389	0.7		0.03		13	3.5	0.158	3.5	0.18	2	0.13	0.5	0.092	0.4	0.06	0	Done on step 1
FS	18:30	1374	174	75	30.38	16460	21	3.4		2.4	0	0.03	0	34	11	0.32	8	0.28	3.5	0.21	0.65	0.13	0.4	0.1	0	Start on step 2
FS	18:45	1374	174	75	30.87	17100	21	3.4	2681	2.4		0.03		35	14	0.344	9	0.38	3.5	0.24	0.8	0.162	0.5	0.11	0	Done on step 2
FS	15:45	1371	175	75	37.91	9100	19	7.2		3.4	386	0.12	0	60	18	0.235	14	0.1	5.5	0.1	1.2	0.105	0.1	0.22	0	Start step 3
FS	16:00	1371	175	75	37.91		19	7.2		3.4		0.12	0	60	18	0.545	15	0.5	6	0.35	1.3	0.1	0.5	0.08	0	
FS	16:15	1371	175	75	37.19	10400	19.1	7.2		3.4		0.12		59	18	0.205	14	0.13	5.6	0.08	1.2	0.03	0.4	0.17	0	End of step 3
FS	16:30	1372	172	75	46.31		18.2	7.5	267	4.2	0	0.2	0	69	21.5	0.465	16	0.38	6.5	0.27	1.4	0.12	0.6	0.02	0	Start of step 4 of 5 / CFM on PLC is 46.5 CFM
FS	17:00	1372	172	75	45.36	12800	18.16	7.5	460	4.2	0	0.3	0	69	22	0.672	17.5	0.6	6.6	0.49	1.6	0.361	0.8	0.22	0	End of step 4
FS	17:15	1372	172	75	89.98	13280	14.6	13.2	550	7.8	387	0.3	0	108.84	34	0.818	24	0.68	10	0.53	2.2	0.338	0.8	0.16	0	Start of step 5 of 5 / CFM on PLC is 53.8
FS	17:45	1373	172	75	89.99	14850	14.6	13.2		7.8		0.3		110.2	34	0.89	24	0.78	10.5	0.6	2.4	0.4	1	0.2	0	End of step 5
FS	19:00																									Shut down
Operator	Time and Date	LRP Hour Meter	LRP Temperature (F)	Outside Temperature (F)	SVE Flow Rate (CFM)	Total cubic feet (CF)	Vacuum at Extraction Well Head (in. Hg)	LRP Pressure (in. H2O)	PID LRP	1st Stage Carbon (in. H2O)	PID after 1st stage	2nd Stage Carbon (in. H2O)	PID after 2nd stage	SVE-EXT-DEEP	SVE-OBS-SHAL-5'	SVE-OBS-DEEP-5'	SVE-OBS-SHAL-10'	SVE-OBS-DEEP-10'	SVE-OBS-SHAL-20'	SVE-OBS-DEEP-20'	SVE-OBS-SHAL-40'	SVE-OBS-DEEP-40'	SSVE-OBS-SHAL-80'	SVE-OBS-DEEP-80'	GW Extracted (Gal)	Observations
FS	5/13/12 9:00	1374	72	72	0	18766	0	0		0		0		0	0	0	0.4	0.4	0.2	0.6	0.15	0.5	0.3	0.31	0	Pre test vacuums / deep well extraction
FS	9:15	1374	170	72	65		17.5							12												Max run test to see influence/ shut down after 3 minutes of operation
FS	9:50																									Start step test 1 of 5 / PLC CFM at34CFM
FS	10:00	1375	170	73	14.5	19470	22.6	1.8		0.94		0.03		2	0.15	1	0.5	1	0.31	1	0.19	0.7	0.35	0.37	0	
FS	10:15	1375	175	73	12.4	19970	22.5	1.8	856	0.94	0	0.03	0	2	0.2	1	0.5	1.5	0.33	1	0.2	0.7	0.355	0.38	0	End of step 1
FS	10:30	1375	178	73	28.45	20460	20.6	4.8	778	2.3	0	0.07	0	4	0.35	1.8	0.6	2	0.48	1.5	0.3	1	0.464	0.54	0	Start of step 2 of 5 / CFM on PLC is 34 CFM
FS	11:00	1376	175	73	28.67	21625	20.7	4.8	419	2.3	76	0.07	0	4	0.5	2	0.8	2	0.65	1.5	0.4	1.2	0.632	0.7	0	End of step 2
FS	11:15	1376	175	73	39.9	22240	19	7.4	757	4.5	1000	0.1	0	6	0.65	2.6	0.8	3	0.82	2	0.5	1.4	0.77	0.86	0	Start step 3 of 5 / flow on PLC is 41.2 CFM
FS	11:30	1376	175	74	40.1	22800	19	7.4		4.5		0.1		6	0.65	2.65	1	3	0.82	2	0.5	1.5	0.78	0.88	0	
FS	11:45	1376	175	74	40.1	23435	19.1	7.4	24.2	4.5	973	0.1	0	6	0.7	2.8	1	3	0.9	2	0.55	1.6	0.864	0.95	0	End of step 3
FS	12:00	1377	175	74	48.7	24100	17.6	8.6	91.7	5.4	1822	0.3	0	8	0.8	3.2	1.2	3	0.95	2.5	0.58	1.8	0.894	1.14	0	Start of step 4 of 5 / flow on PLC is 45.6
FS	12:15	1377	175	74	48.7	24800	17.5	8.6	144	5.4	3092	0.3	0	8	0.8	3.3	1.2	3	0.98	2.5	0.6	2	0.98	1.2	0	
FS	12:30	1377	175	74	49.1	25210	17.5	8.6	94.4	5.4	1202	0.3	0	8	0.8	3.3	1	3	0.98	2.5	0.62	2	0.93	1.17	0	End of step 4
FS	12:45	1377	175	74	76		13.6	22	1990	12	1450	0.3	0	12	1	4.5	1.2	4	1.3	3	0.72	2.2	1.2	1.4	0	Start of step 5 of 5 / Flow on PLC is 56.6
FS	13:15	1378	175	74	77.2	27950	13.7	22	89	12	2000	0.3	0	12	1.2	4.6	1.2	4	1.3	3	0.81	2.4	1.3	1.6	0	
FS	13:30	1378	175	74	74.8	28800	13.7	22		12		0.3		12	1.3	4.7	1.4	4.5	1.5	3	0.82	2.4	1.4	1.6	0	End of step 5
FS	13:35																									Stop test run clean air through system
FS	14:40					31987																				Shut down system

Notes:

FS - Frank Smiddy, Operator with Pro-Act Services
LRP - Liquid Ring Pump
SVE - Soil Vapor Extraction Unit
PID - Photoionization Detection

S5 - Shallow Observation Well 5 Feet from Extraction Well
D5 - Deep Observation Well 5 Feet from Extraction Well
S10 - Shallow Observation Well 10 Feet from Extraction Well
D10 - Deep Observation Well 10 Feet from Extraction Well

S20 - Shallow Observation Well 20 Feet from Extraction Well
D20 - Deep Observation Well 20 Feet from Extraction Well
S40 - Shallow Observation Well 40 Feet from Extraction Well
D40 - Deep Observation Well 40 Feet from Extraction Well

S80 - Shallow Observation Well 40 Feet from Extraction Well
D80 - Deep Observation Well 40 Feet from Extraction Well

TABLE 5
SOIL VAPOR ANALYTICAL RESULTS SUMMARY
SVE PILOT
KUHLMAN ELECTRIC CORPORATION
CRYSTAL SPRINGS, MS

Constituent	OSHA PEL (TWA)	NIOSH REL (TWA)	ACGIH (TLV)	SVE-EXT-SHAL-PRE	SVE-EXT-DEEP-PRE	SVE-OBS-SHAL-40'-PRE[a]	SVE-OBS-DEEP-40'-PRE[b]	SVE-EXT-SHAL-POST	SVE-EXT-DEEP-POST	SVE-OBS-SHAL-40'-POST[a]	SVE-OBS-DEEP-40'-POST[b]	SVE-SP15-PRE	SVE-SP15-01	SVE-SP15-02	SVE-SP15-03	SVE-SP15-04	SVE-CARBON-POST-01	SVE-CARBON-POST-02
Sample Date				5/12/2012	5/12/2012	5/12/2012	5/13/2012	5/12/2012	5/13/2012	5/12/2012	5/13/2012	5/12/2012	5/12/2012	5/12/2012	5/13/2012	5/13/2012	5/12/2012	5/13/2012
Sample Time				9:04	8:47	9:37	8:21	19:25	15:02	19:45	14:40	10:16	12:42	17:38	10:20	13:32	19:00	13:50
Volatile Organic Compounds																		
1,1,1,2-Tetrachloroethane	*	*	*	45.34	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-Trichloroethane	**1,900,000**	**1,900,000**	**1,900,000**	10,986.49	23,537.01	8,814.91	1,178.55	1,939.57	15,232.18	20.66	-	1,767.47	355,050.29	292,670.69	26,415.68	23,424.88	-	-
1,1,2,2-Tetrachloroethane	**35,000**	**7,000**	**6,900**	-	-	-	-	-	-	-	-	-	-			-	-	-
1,1,2-Trichloroethane	**45,000**	**45,000**	**55,000**	5,297.08	969.62	-	-	3,833.04	198.98	-	-	-	6,108.59	14,399.50	1,420.35	1,860.36	-	-
1,1-Dichloroethane	**400,000**	**400,000**	**405,000**	9,107.86	1,522.80	559.27	-	4,395.65	412.02	-	-	-	5,218.29	15,037.36	924.82	1,926.97	-	-
1,1-Dichloroethene	*	**Ca**	**19,800**	196.92	-	7,205.57	1,175.07	631.77	11,801.86	-	-	2,213.63	140,185.73	85,300.62	4,421.03	6,810.67	-	-
1,1-Dichloropropene	*	*	*		-								-	-			-	-
1,2,3-Trichloropropane	**300,000**	**60,000**	**60,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	*	**40,000**	**37,100**	-	-	-	-	-	-	-	-	546.67	1,723.03	-	247.17	133.67	-	-
1,2,4-Trimethylbenzene	*	**125,000**	**123,000**	223.23	-	-	-	-	-	-	-	-	-	-	-	259.53	213.36	-
1,2-Dibromoethane	**153,800**	**346**	*				-		-	-	-		-	-				
1,2-Dichlorobenzene	**300,000**	**300,000**	**150,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	**202,500**	**4,000**	**40,450**	769.11	-	506.76	-	709.43	939.48	-	-	94.95	-	-		1,837.35	-	-
1,2-Dichloropropane	**350,000**	**Ca**	**347,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	*	**125,000**	**123,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Butadiene	**2,210**	**Ca**	**4,400**	74.81	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropane	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4 Dioxane	**360,000**	**3,600**	**72,000**	223.73	-	-	-	334.57	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	**450,000**	**Ca**	**60,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2-Dichloropropane	*	*	*							-	-	-					-	-
2-Butanone	**590,000**	**590,000**	**590,000**	-	-	-	-	-	-	-	-	-	-	-			-	-
2-Hexanone	**410,000**	**4,000**	**20,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-Ethyltoluene	*	*	*	168.44	-	-	-	-	-	-	-	-	-	-	-	65.3	130.54	-
4-Methyl-2-pentanone	**410,000**	**205,000**	**205,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acetone	**2,400,000**	**590,000**	**1,187,000**	168.97	235.65	-	-	-	-	-	66.01	618	-	-	54.91	46.49	60.4	59.89
Benzene	**3,200**	**320**	**1,600**	102.11	-	77.39	-	68.51	-	-	-	-	-	-	-	65.36	-	-
Benzyl chloride	**5,000**	**5,000**	**5,200**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromochloromethane	**1,050,000**	**1,050,000**	**1,060,000**	209.93	-	-	-	105.58	-	-	-	-	-	-	-	51.18	-	-
Bromodichloromethane	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromoform	**5,000**	**5,000**	**5,200**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	**80,000**	**Ca**	**3,900**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	**62,200**	**3,000**	**31,100**	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Carbon tetrachloride	**62,900**	**12,600**	**31,450**	2,061.00	390.82	-	-	1,058.19	-	-	-	-	2,826.95	4,693.74	216.16	533.85	-	-
Chlorobenzene	**350,000**	**350,000**	**46,000**	-	-	438.92	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	**2,600,000**	*	**263,700**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroform	**240,000**	**9,780**	**49,000**	2,836.05	480.38	95.8	-	1,521.55	125.59	-	-	-	1,751.38	4,983.57	306.29	678.52	-	-
Chloromethane	**207,000**	**Ca**	**103,000**	56.69	-	-	-	50.13	-	-	-	-	-	-	-	-	78.63	43.58
cis-1,2-Dichloroethene	**790,000**	**790,000**	**793,000**	627.77	84.61	-	-	281.41	-	-	-	-	-	875.99	-	122.92	-	-
cis-1,3-Dichloropropene	*	**5,000**	**4,500**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane	**1,050,000**	**1,050,000**	**344,000**	-	-	-	-		-	-	-	41.17	-	-	-	-	-	-
Decane	*	*	*	-	-	-	136.12	-	-	-	114.29	-	-	-	-	-	-	-
Dibromochloromethane	*	*	*	134.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 5
SOIL VAPOR ANALYTICAL RESULTS SUMMARY
SVE PILOT
KUHLMAN ELECTRIC CORPORATION
CRYSTAL SPRINGS, MS

Constituent	OSHA PEL (TWA)	NIOSH REL (TWA)	ACGIH (TLV)	SVE-EXT-SHAL-PRE	SVE-EXT-DEEP-PRE	SVE-OBS-SHAL-40'-PRE[a]	SVE-OBS-DEEP-40'-PRE[b]	SVE-EXT-SHAL-POST	SVE-EXT-DEEP-POST	SVE-OBS-SHAL-40'-POST[a]	SVE-OBS-DEEP-40'-POST[b]	SVE-SP15-PRE	SVE-SP15-01	SVE-SP15-02	SVE-SP15-03	SVE-SP15-04	SVE-CARBON-POST-01	SVE-CARBON-POST-02
Sample Date				5/12/2012	5/12/2012	5/12/2012	5/13/2012	5/12/2012	5/13/2012	5/12/2012	5/13/2012	5/12/2012	5/12/2012	5/12/2012	5/13/2012	5/13/2012	5/12/2012	5/13/2012
Dibromomethane	*	*	*														-	-
Dichlorodifluoromethane	4,950,000	4,950,000	4,950,000	-	89.81	373.89	-	-	-	-	-	-	-	-	-	107.24	-	-
Dichloromethane	86,750	Ca	174,000	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Ethyl acetate	1,400,000	1,400,000	1,400,000	1,837.36	196	-	-	931.45	-	-	-	-	585.11	2,887.47			-	-
Ethylbenzene	435,000	435,000	435,000	136.25	-	-	-	-	-	-	-	-	-	-	-	102.85	-	-
Freon 113	7,600,000	7,600,000	7,600,000	-	199.44	350.47	-	-	-	-	-	-	-	-	-	272.85	-	-
Freon 114	7,000,000	7,000,000	6,990,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hexane	1,800,000	180	176,000	53.24	-	-	-	-	172.1	-	-	-	-	690.06	283.49		-	-
i-Butylbenzene	*	*	*		-	-	-	-	-	-	-	-	-	-	-			
Isobutyl alcohol	300,000	150,000	152,000	-	-	-	-	315.68	-	-	-	-	-	2,833.45	375.75	376.57	-	-
Isopropylbenzene	245,000	245,000	246,000	207.98	-	-	-	-	-	-	-	-	-	-	-	80.47	147.04	-
Isopropyltoluene	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
m,p-Xylenes	435,000	435,000	435,000	572.85	-	-	-	-	-	-	-	186.78	-	-	-	735.19	229.06	-
Methacrylonitrile	*	3,000	2,700														-	-
Methyl methacrylate	410,000	410,000	205,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Methyl tert butyl ether	*	*	180,000	-	-	-	-	-	-	-	-	-	-	-	-		-	-
Naphthalene	50,000	50,000	52,000	157.91	-	-	-	-	53.42	-	-	31.61	-	-	-	334.37	242.67	26.04
n-Butylbenzene		*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-Heptane	2,000,000	350,000	1,640,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nonane	*	1,050,000	1,050,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-Propylbenzene	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Octane	2,350,000	350,000	1,400,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	435,000	435,000	435,000	268.04	-	-	-	106.26	-	-	-	-	-	-	187.72	342.02	117.68	-
sec-butylbenzene	*	*	*		-	-	-	-	-	-	-	-	-	-	-			
Styrene	426,000	215,000	85,200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tert-butyl benzene	*	*	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene	678,000	Ca	169,500	207.85	-	-	-	161.97	-	-	-	560.43	-	-	179.05	-	-	-
Toluene	750,000	375,000	188,000	397.7	-	-	-	589.69	-	-	-	90.85	-	3,636.95	356.74	420.53	132.66	-
trans-1,2-Dichloroethene	790,000	790,000	793,000	69.15	-	-	-	49.65	-	-	-	-	-	-	-		-	-
trans-1,3-Dichloropropene	*	5,000	4,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	537,000	Ca	268,500	4,921.85	1,054.53	117.9	-	3,805.38	192.43	-	-	-	7,520.52	16,358.34	754.53	1,543.00	-	-
Trichlorofluoromethane	5,600,000	5,600,000	5,620,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl acetate	*	15,000	35,000	-	-	-	-	-	248.79	-	-	-	-	-	414.89		-	-
Vinyl chloride	2,560	Ca	2,560	474.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

All results/standards in units of: $\mu g/m^3$ *- micrograms per cubic meter*
a. Samples from SVE-OBS-SHAL-04
c. Samples from SVE-OBS-DEEP-04
Ca - NIOSH potential occupational carcinogen
TWA - Time Weighted Average
- Results were below detection and/or reporting limit
** - No limit listed*

TABLE 6
AIR ANALYTICAL RESULTS SUMMARY
SVE PILOT
KUHLMAN ELECTRIC CORPORATION
CRYSTAL SPRINGS, MS

Constituent	OSHA PEL (TWA)	NIOSH REL (TWA)	ACGIH (TLV)	SVE-AREA 1-051212[a]	SVE-AREA 2-051212[a]	SVE-AREA 1-051312	SVE-AREA 2-051312[a]
Sample Date				5/12/2012	5/12/2012	5/13/2012	5/13/2012
Composite Sample Times (Begin and End)				09:58-19:59	09:52-19:56	08:28-15:02	08:25-15:05
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	*	*	*	-	-	-	-
1,1,1-Trichloroethane	**1,900,000**	**1,900,000**	**1,900,000**	27.99	1.665	373.89	1.676
1,1,2,2-Tetrachloroethane	**35,000**	**7,000**	**6,900**	-	-	-	-
1,1,2-Trichloroethane	**45,000**	**45,000**	**55,000**	17.15	1.406	-	-
1,1-Dichloroethane	**400,000**	**400,000**	**405,000**	-	-	-	-
1,1-Dichloroethene	*	**Ca**	**19,800**	13.2	-	367.24	-
1,1-Dichloropropene	*	*	*				
1,2,3-Trichloropropane	**300,000**	**60,000**	**60,000**	-	-	-	-
1,2,4-Trichlorobenzene	*	**40,000**	**37,100**	-	-	-	-
1,2,4-Trimethylbenzene	*	**125,000**	**123,000**	29.248	2.867	-	1.502
1,2-Dibromoethane	**153,800**	**346**	*				
1,2-Dichlorobenzene	**300,000**	**300,000**	**150,000**	-	-	-	-
1,2-Dichloroethane	**202,500**	**4,000**	**40,450**	-	-	-	-
1,2-Dichloropropane	**350,000**	**Ca**	**347,000**	-	-	-	-
1,3,5-Trimethylbenzene	*	**125,000**	**123,000**	8.27	0.904	-	-
1,3-Butadiene	**2,210**	**Ca**	**4,400**	2.78	-	-	-
1,3-Dichlorobenzene	*	*	*	12.735	-	-	-
1,3-Dichloropropane	*	*	*	-	-	-	-
1,4 Dioxane	**360,000**	**3,600**	**72,000**	-	-	-	-
1,4-Dichlorobenzene	**450,000**	**Ca**	**60,000**	12.422	2.02	-	-
2,2-Dichloropropane	*	*	*	-	-	-	-
2-Butanone	**590,000**	**590,000**	**590,000**	-	2.74		32.14
2-Hexanone	**410,000**	**4,000**	**20,000**	-	-	-	-
4-Ethyltoluene	*	*	*	25.283	1.828	-	1.048
4-Methyl-2-pentanone	**410,000**	**205,000**	**205,000**	3.67	-	-	8.14
Acetone	**2,400,000**	**590,000**	**1,187,000**	57.92	39.14	-	31.74
Benzene	**3,200**	**320**	**1,600**	5.38	4.26	-	1.008
Benzyl chloride	**5,000**	**5,000**	**5,200**	-	-	-	-
Bromochloromethane	**1,050,000**	**1,050,000**	**1,060,000**	-	-	-	-
Bromodichloromethane	*	*	*	-	-	-	-
Bromoform	**5,000**	**5,000**	**5,200**	-	-	-	-
Bromomethane	**80,000**	**Ca**	**3,900**	-	-	-	-
Carbon disulfide	**62,200**	**3,000**	**31,100**	-	-	-	-
Carbon tetrachloride	**62,900**	**12,600**	**31,450**	-	-	-	-
Chlorobenzene	**350,000**	**350,000**	**46,000**	-	-	-	-
Chloroethane	**2,600,000**	*	**263,700**	-	-	-	-
Chloroform	**240,000**	**9,780**	**49,000**	-	-	-	-
Chloromethane	**207,000**	**Ca**	**103,000**	1.017	0.723	-	0.524
cis-1,2-Dichloroethene	**790,000**	**790,000**	**793,000**	-	-	-	-
cis-1,3-Dichloropropene	*	**5,000**	**4,500**	2.311	-	-	-
Cyclohexane	**1,050,000**	**1,050,000**	**344,000**	6.92	2.99	-	-
Decane	*	*	*	-	-	-	-
Dibromochloromethane	*	*	*	-	-	-	-

TABLE 6
AIR ANALYTICAL RESULTS SUMMARY
SVE PILOT
KUHLMAN ELECTRIC CORPORATION
CRYSTAL SPRINGS, MS

Constituent	OSHA PEL (TWA)	NIOSH REL (TWA)	ACGIH (TLV)	SVE-AREA 1-051212[a]	SVE-AREA 2-051212[a]	SVE-AREA 1-051312	SVE-AREA 2-051312[a]
Sample Date				5/12/2012	5/12/2012	5/13/2012	5/13/2012
Dibromomethane	*	*	*	-	-	-	-
Dichlorodifluoromethane	4,950,000	4,950,000	4,950,000	1.794	1.404	-	0.928
Dichloromethane	86,750	Ca	174,000	1.339	0.503	-	-
Ethyl acetate	1,400,000	1,400,000	1,400,000	56.47	97.85		60.73
Ethylbenzene	435,000	435,000	435,000	33.12	2.795	-	1.316
Freon 113	7,600,000	7,600,000	7,600,000	-	-	-	-
Freon 114	7,000,000	7,000,000	6,990,000	-	-	-	-
Hexane	1,800,000	180	176,000	14.04	8.31		21.28
i-Butylbenzene	*	*	*				
Isobutyl alcohol	300,000	150,000	152,000	-	-	-	7.3
Isopropylbenzene	245,000	245,000	246,000	27.51	-	-	-
Isopropyltoluene	*	*	*	-	-	-	-
m,p-Xylenes	435,000	435,000	435,000	125.74	8.695	-	3.26
Methacrylonitrile	*	3,000	2,700				
Methyl methacrylate	410,000	410,000	205,000	-	-	-	-
Methyl tert butyl ether	*	*	180,000	-	-	-	-
Naphthalene	50,000	50,000	52,000	-	1.2	207.22	1.154
n-Butylbenzene		*	*	-	-	-	-
n-Heptane	2,000,000	350,000	1,640,000	4.01	-	-	-
Nonane	*	1,050,000	1,050,000	2.43	-	-	8.16
n-Propylbenzene	*	*	*	6.72	-	-	-
Octane	2,350,000	350,000	1,400,000	7.64	6.54	-	-
o-Xylene	435,000	435,000	435,000	46.63	3	-	1.103
sec-butylbenzene	*	*	*				
Styrene	426,000	215,000	85,200	3.942	1.168	-	0.698
tert-butyl benzene	*	*	*	3.5	-	-	-
Tetrachloroethene	678,000	Ca	169,500	3.045	0.908	-	-
Toluene	750,000	375,000	188,000	128.66	57.43	-	27.76
trans-1,2-Dichloroethene	790,000	790,000	793,000	-	-	-	-
trans-1,3-Dichloropropene	*	5,000	4,500	1.846	-	-	-
Trichloroethene	537,000	Ca	268,500	-	-	-	-
Trichlorofluoromethane	5,600,000	5,600,000	5,620,000	0.924	0.786	-	-
Vinyl acetate	*	15,000	35,000	19.81	11.18		25.27
Vinyl chloride	2,560	Ca	2,560	-	-	-	-

Notes:

All results/standards in units of: $\mu g/m^3$ *- micrograms per cubic meter*
a. These samples had duplicate runs of tests in the lab; the higher results are listed.
Ca - NIOSH potential occupational carcinogen
TWA - Time Weighted Average
- Results were below detection and/or reporting limit
** - No limit listed*

TABLE 7
GROUND WATER ANALYTICAL RESULTS SUMMARY

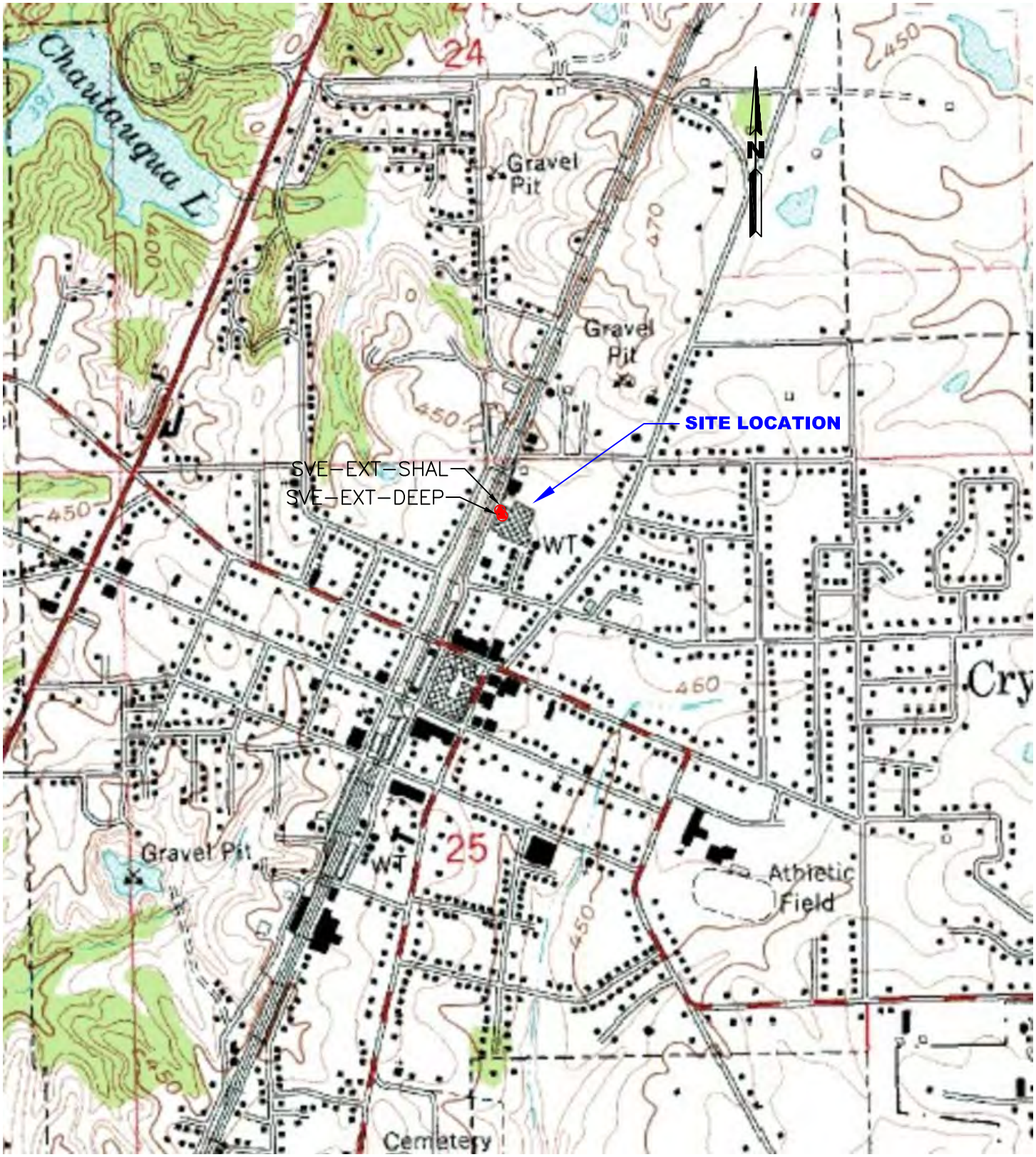
SVE Pilot
Kuhlman Electric Corporation
Crystal Springs, MS

Constituent	Tier 1 TRG*	SVE-EXT-Deep
Sample Date		5/12/2012
Volatile Organic Compounds		
1,1 -Dichlorethene	7.0	**140**
Carbon Disulfide	1,040	<0.50
1,1 - Dichloroethane	798	6.2
cis-1,2-Dichloroethene	7.0	<0.50
Chloroform	0.155	**1.6**
1,1,1- Trichloroethane (TCA)	200	110
Benzene	5.0	<0.50
1,2 - Dichloroethane (1,2-DCA)	5.0	**5.2**
Trichlorethene (TCE)	5.0	1.3
Toluene	1,000	<0.50
1,1,2-Trichlorethane (1,1,2-TCA)	5.0	**13**
Tetrachloroethene (PCE)	5.0	<0.50
m,p-Xylenes	12,200	<0.50
1,4 Dioxane	6.09	**15**

Notes:

All results/standards in units of: µg/l - micrograms per liter
* MDEQ Target Remediation Goals (TRGs)
BOLD indicates exceedance

FIGURES



SCALE 1 INCH = 1000 FEET

250 500 1000

0 250 500 1000 2000

NOTE: PROPERTY BOUNDARIES AND SCALE ARE APPROXIMATE.

REFERENCE: U.S.G.S. TOPOGRAPHIC MAP
1963 – CRYSTAL SPRINGS
7.5 MINUTE SERIES
COPIAH COUNTY, MS

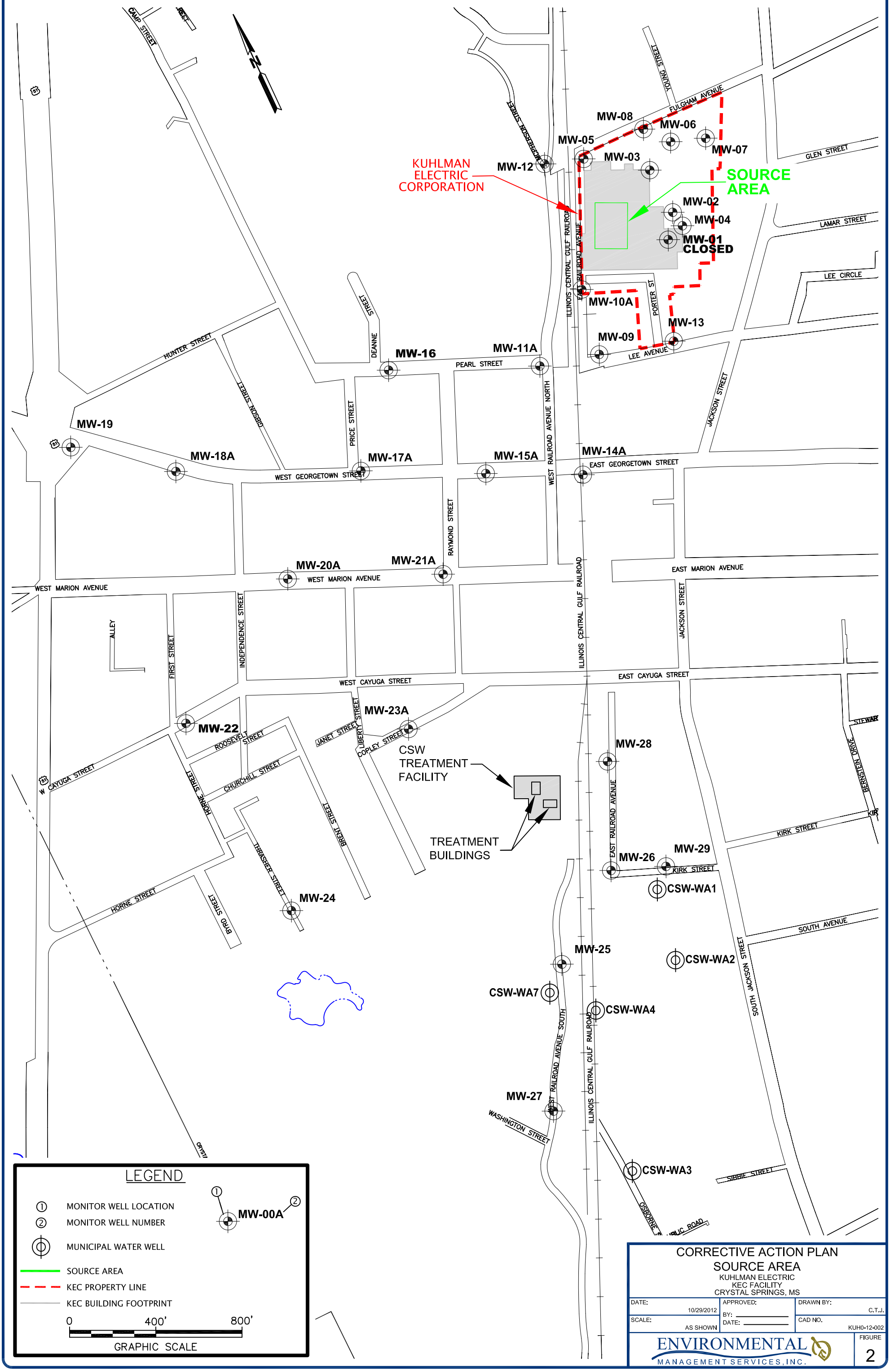
SITE LOCATION MAP

SVE PILOT WELL INSTALLATION
KUHLMAN ELECTRIC BUILDING
CRYSTAL SPRINGS, MS

DATE: 08/2012	APPROVED: BY: ____ DATE: ____	DRAWN BY: D.E.P.
SCALE: 1"=1000'		PROJECT NO. KUH0-11-004

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 1



CORRECTIVE ACTION PLAN
SOURCE AREA

KUHLMAN ELECTRIC
KEC FACILITY
CRYSTAL SPRINGS, MS

DATE:	APPROVED:	DRAWN BY:
10/29/2012	BY: _____	C.T.J.
SCALE: AS SHOWN	DATE: _____	CAD NO. KUH0-12-002

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 2

N

SVE PILOT
SYSTEM LOCATION

SVE-SP15

SVE-EXT-SHAL

SVE-OBS-SHAL-02

SVE-OBS-SHAL-01

SVE-OBS-SHAL-03

SVE-EXT-DEEP

SVE-OBS-DEEP-02

SVE-OBS-DEEP-01

SVE-OBS-DEEP-03

SVE-OBS-SHAL-04

SVE-OBS-DEEP-04

SVE-OBS-DEEP-05

SVE-OBS-SHAL-05

AIR MONITORING
AREA 1

AIR MONITORING
AREA 2

LEGEND

- SOURCE AREA
- KEC BUILDING FOOTPRINT
- SVE PILOT EXTRACTION WELL (SHALLOW) (4" PVC)
- SVE PILOT OBSERVATION WELLS (SHALLOW) (1" PVC)
- SVE PILOT EXTRACTION WELLS (DEEP) (4" PVC)
- SVE PILOT OBSERVATION WELLS (DEEP) (1" PVC)
- 1,1-DICHLOROETHENE IN SOIL EXCEEDING UNRESTRICTED TIER 1 TRG (0.0772 mg/kg)
- 1,4-DIOXANE IN SOIL EXCEEDING UNRESTRICTED TIER 1 TRG (58.1 mg/kg)

SCALE 1 INCH = 20 FEET

5 10 20

0 5 10 20 40

NOTES:
1) DATA IS BASED ON EXTENT AS DEFINED IN CORRECTIVE ACTION PLAN, ARCADIS, MARCH 2009.

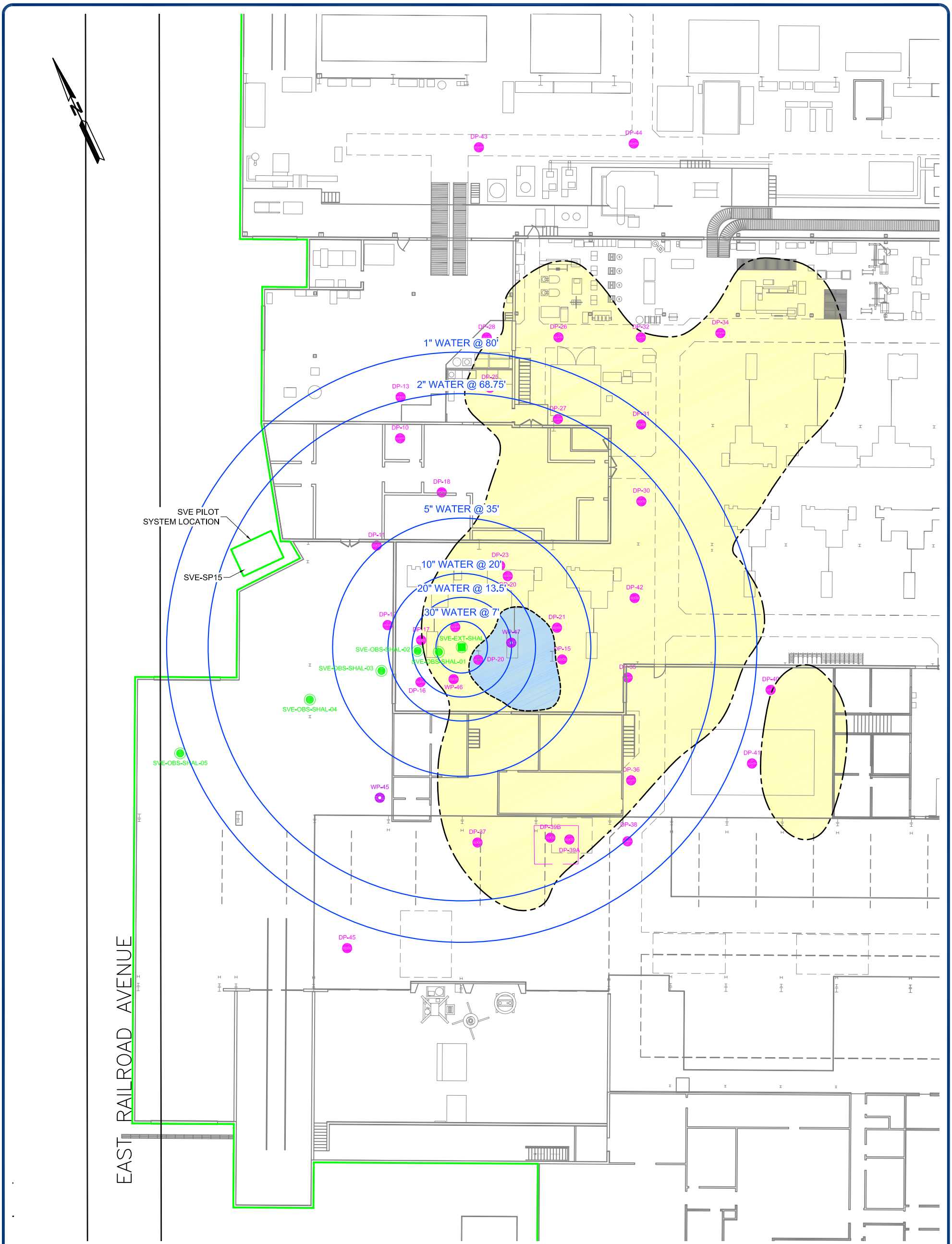
PILOT STUDY LAYOUT

KUHLMAN ELECTRIC CORPORATION
KEC FACILITY
CRYSTAL SPRINGS, MISSISSIPPI

DATE:	APPROVED:	DRAWN BY:
9/13/2012	BY: _____	P.D.M.
SCALE:	DATE: _____	CAD NO.
AS SHOWN		KUH0-11-006

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 3



SCALE 1 INCH = 25 FEET

5 10 25

0 5 10 15 20 25 50

LEGEND

- SOURCE AREA
- KEC BUILDING FOOTPRINT
- ESTIMATED VACUUM RESPONSE
- SVE PILOT EXTRACTION WELL (SHALLOW) (4" PVC)
- SVE PILOT OBSERVATION WELLS (SHALLOW) (1" PVC)
- WATERLOO PROFILER SAMPLE LOCATIONS (MARTIN AND SLAGLE 2005-2006)
- DIRECT PUSH SAMPLE LOCATIONS (MARTIN AND SLAGLE 2006-2008)
- 1,1-DICHLOROETHENE IN SOIL EXCEEDING UNRESTRICTED TIER 1 TRG (0.0772 mg/kg)
- 1,4-DIOXANE IN SOIL EXCEEDING UNRESTRICTED TIER 1 TRG (58.1 mg/kg)

NOTES:
1) DATA IS BASED ON EXTENT AS DEFINED IN CORRECTIVE ACTION PLAN, ARCADIS, MARCH 2009.
2) VACUUM RESPONSE IS ESTIMATED BASED ON OBSERVED VACUUMS AT OBSERVATION WELLS.

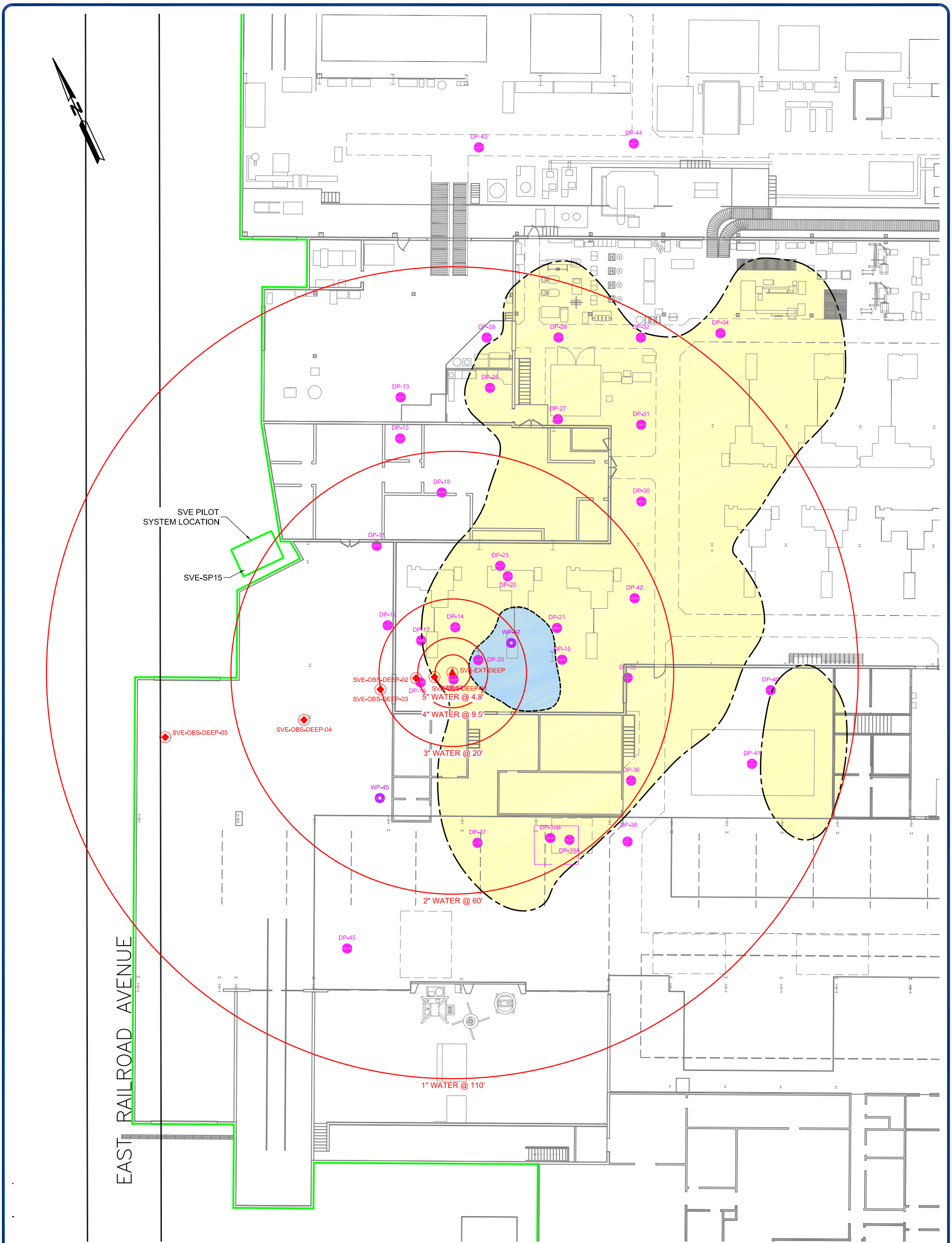
SHALLOW WELLS VACUUM RESPONSE DURING SHALLOW TEST

KUHLMAN ELECTRIC CORPORATION
KEC FACILITY
CRYSTAL SPRINGS, MISSISSIPPI

DATE:	APPROVED:	DRAWN BY:
8/30/2012	BY: _____	P.D.M.
SCALE:	DATE: _____	CAD NO.
AS SHOWN		KUH0-11-006

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 4



LEGEND

- SOURCE AREA
- KEC BUILDING FOOTPRINT
- ESTIMATED VACUUM RESPONSE
- SVE PILOT EXTRACTION WELLS (DEEP) (4" PVC)
- SVE PILOT OBSERVATION WELLS (DEEP) (1" PVC)
- WATERLOO PROFILER SAMPLE LOCATIONS (MARTIN AND SLAGLE 2005-2006)
- DIRECT PUSH SAMPLE LOCATIONS (MARTIN AND SLAGLE 2006-2008)

1,1-DICHLOROETHENE IN SOIL EXCEEDING UNRESTRICTED TIER 1 TRG (0.0772 mg/kg)

1,4-DIOXANE IN SOIL EXCEEDING UNRESTRICTED TIER 1 TRG (58.1 mg/kg)

SCALE 1 INCH = 25 FEET

5 10 25

0 5 10 15 20 25 50

NOTES:
1) DATA IS BASED ON EXTENT AS DEFINED IN CORRECTIVE ACTION PLAN, ARCADIS, MARCH 2009.
2) VACUUM RESPONSE IS ESTIMATED BASED ON OBSERVED VACUUMS AT OBSERVATION WELLS.

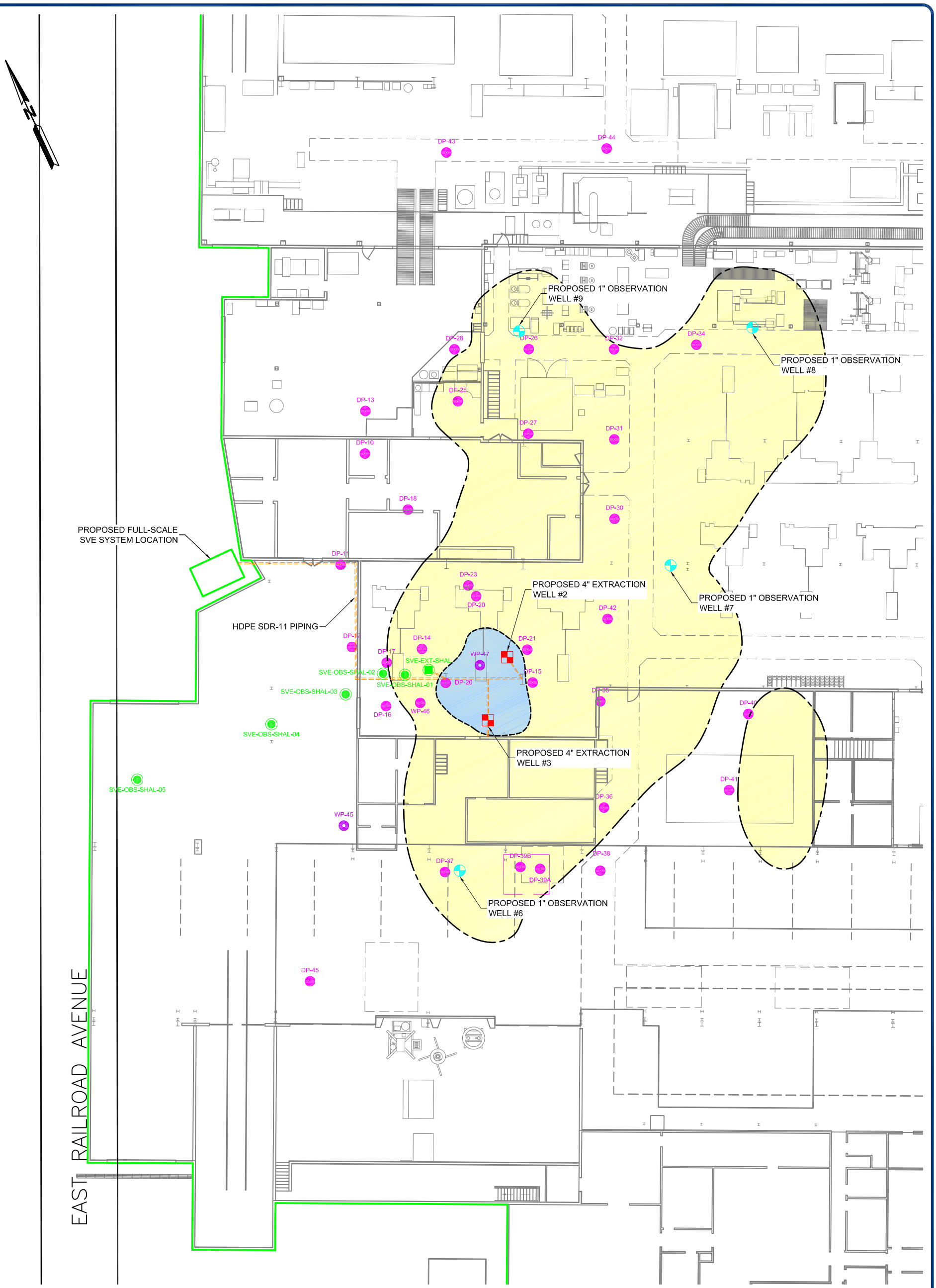
DEEP WELLS VACUUM RESPONSE DURING DEEP TEST

KUHLMAN ELECTRIC CORPORATION
KEC FACILITY
CRYSTAL SPRINGS, MISSISSIPPI

DATE:	APPROVED:	DRAWN BY:
8/30/2012	BY: _____	P.D.M.
SCALE:	DATE: _____	CAD NO.
AS SHOWN		KUH0-11-006

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 5



SCALE 1 INCH = 25 FEET

5 10 25

0 5 10 15 20 25 50

LEGEND

- SOURCE AREA
- KEC BUILDING FOOTPRINT
- SVE PILOT EXTRACTION WELL (SHALLOW) (4" PVC)
- SVE PILOT OBSERVATION WELLS (SHALLOW) (1" PVC)
- PROPOSED EXTRACTION WELLS (4" STAINLESS)
- PROPOSED OBSERVATION WELLS (1" PVC)
- WATERLOO PROFILER SAMPLE LOCATIONS (MARTIN AND SLAGLE 2005-2006)
- DIRECT PUSH SAMPLE LOCATIONS (MARTIN AND SLAGLE 2006-2008)

1,1-DICHLOROETHENE IN SOIL EXCEEDING UNRESTRICTED TIER 1 TRG (0.0772 mg/kg)

1,4-DIOXANE IN SOIL EXCEEDING UNRESTRICTED TIER 1 TRG (58.1 mg/kg)

NOTES:
1) DATA IS BASED ON EXTENT AS DEFINED IN CORRECTIVE ACTION PLAN, ARCADIS, MARCH 2009.

PROPOSED FULL SCALE SVE SYSTEM LAYOUT

KUHLMAN ELECTRIC CORPORATION
KEC FACILITY
CRYSTAL SPRINGS, MISSISSIPPI

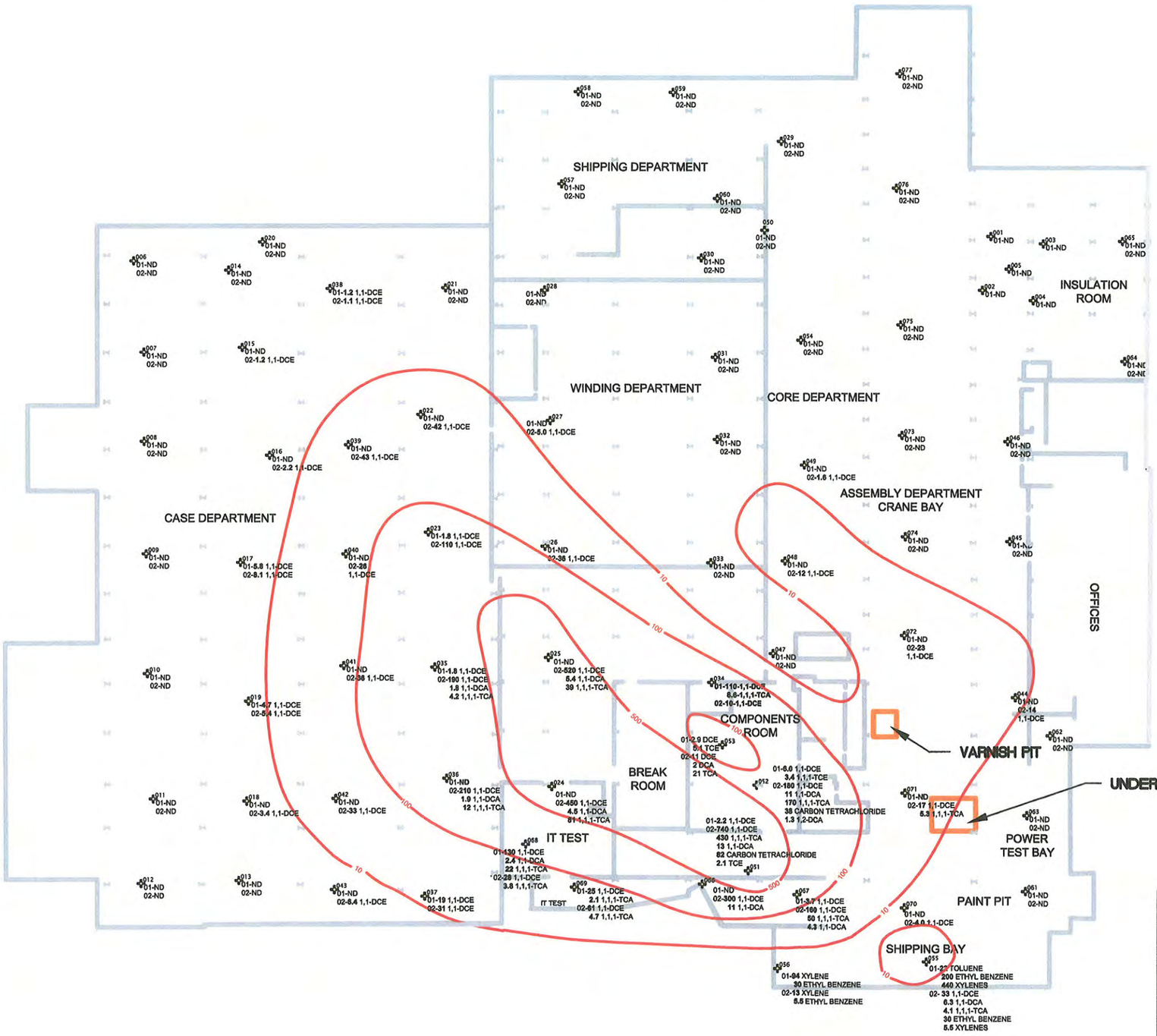
DATE:	APPROVED:	DRAWN BY:
8/30/2012	BY: _____	P.D.M.
SCALE:	DATE: _____	CAD NO.
AS SHOWN		KUH0-11-006

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

FIGURE 6

APPENDICES

APPENDIX A



FLOOR PLAN – KEC PLANT

LEGEND

SOIL VOC VAPOR CONCENTRATIONS CONTOUR (ug/l)

SOIL VAPOR LOCATIONS AND CONCENTRATIONS (ug/l)

NOTE: CONTOURS ARE BASED ON THE HIGHEST TOTAL CHLORINATED VOC CONCENTRATIONS IN EACH SAMPLE LOCATION REGARDLESS OF DEPTH.

3 FIGURE

SOURCE AREA
SOIL VAPOR SAMPLE LOCATIONS AND CHLORINATED SOIL VAPOR PLUME MAP

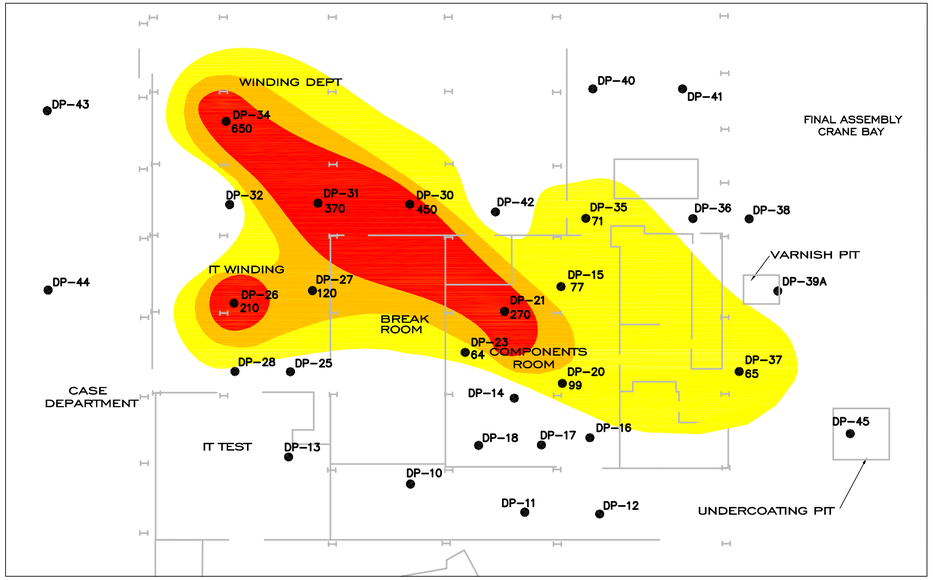
KUHLMAN ELECTRIC CORPORATION
CRYSTAL SPRINGS, MS

SCALE 1"50'
DR: DGR
CHK:RLM
REV: 0
DATE: 04/29/09

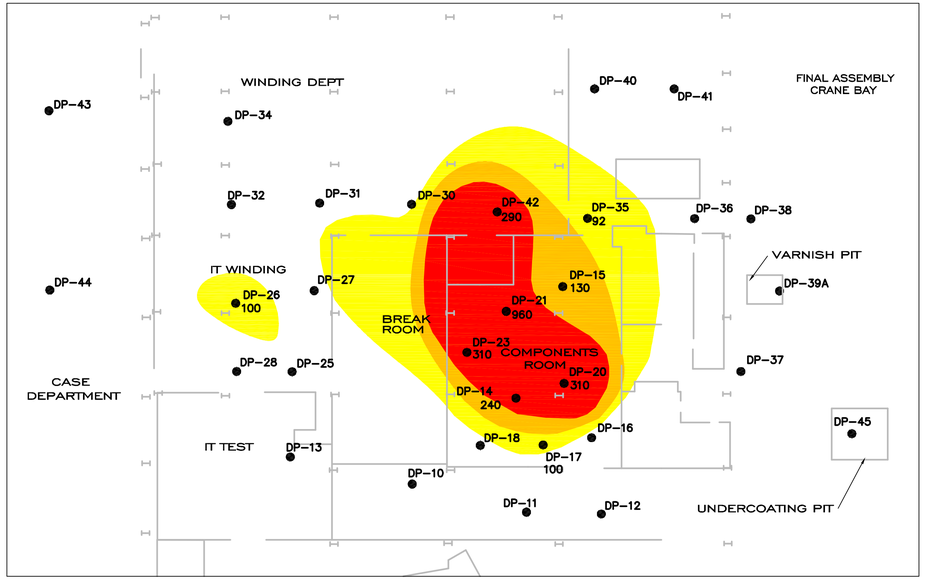
PREPARED FOR: BorgWarner Inc.

PATH NAME: GROUNDWATER ASSESSMENT REPORT 4/20/09

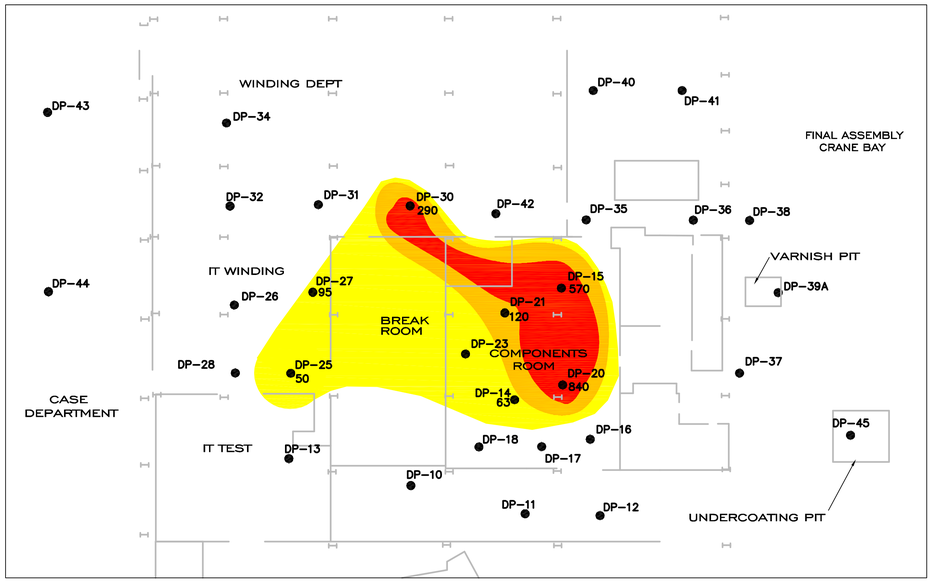
GeoEnvironmental Associates, LLC
MARTIN&SLAGLE
PO Box 1023
Black Mountain NC 28711
828.669.3929 828.669.5289



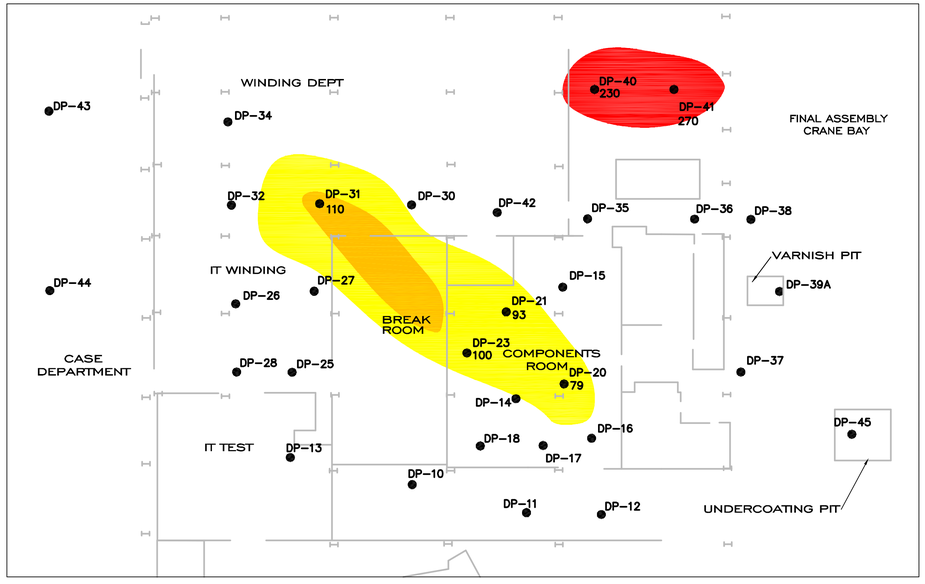
0'-5' DEPTH



10'-15' DEPTH



20'-25' DEPTH



30'-35' DEPTH

LEGEND

DIRECT PUSH SAMPLE LOCATION W/1,1-DCE CONCENTRATIONS (ug/kg)

1,1-DICHLOROETHENE CONCENTRATION GRADIENTS

200 + µg/kg

100 - 200 µg/kg

0 - 100 µg/kg

KEY

FIGURE 2

SOURCE AREA
1,1-DCE PLUME IN SOIL

KUHLMAN ELECTRIC CORPORATION
CRYSTAL SPRINGS, MS

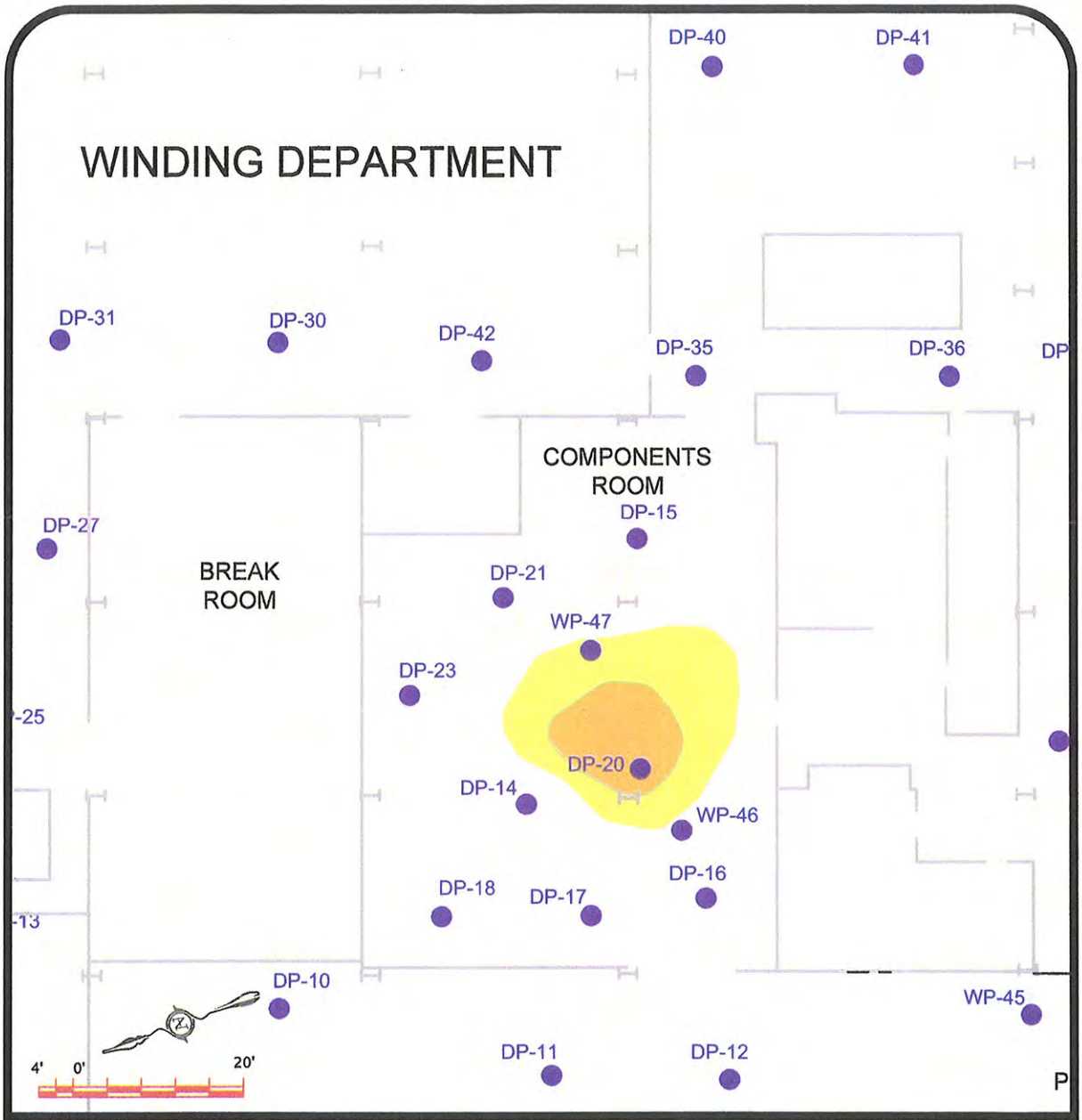
SCALE VARIES
DR: DGR
CHK: RLM
REV: 0
DATE: 4/19/09

1 2 3 4

PREPARED FOR:
BorgWarner Inc.

DRAWING NAME:
GROUNDWATER ASSESSMENT REPORT\F12.DWG

GeoEnvironmental Associates, LLC
MARTIN&SLAGLE
PO Box 1023
Black Mountain NC 28711
828.669.3929 828.669.5289



LEGEND

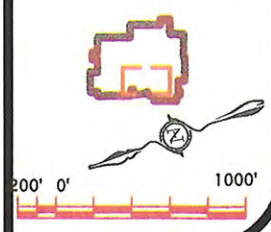
DP-00 DIRECT PUSH SAMPLE LOCATION

1,4-DIOXANE CONCENTRATION GRADIENTS

> 75,000 µg/kg

58,100 – 75,000 µg/kg

MAP KEY



MARTIN&SLAGLE
GeoEnvironmental Associates, LLC
PO Box 1023
Black Mountain NC 28711
828.669.3929 828.669.5289

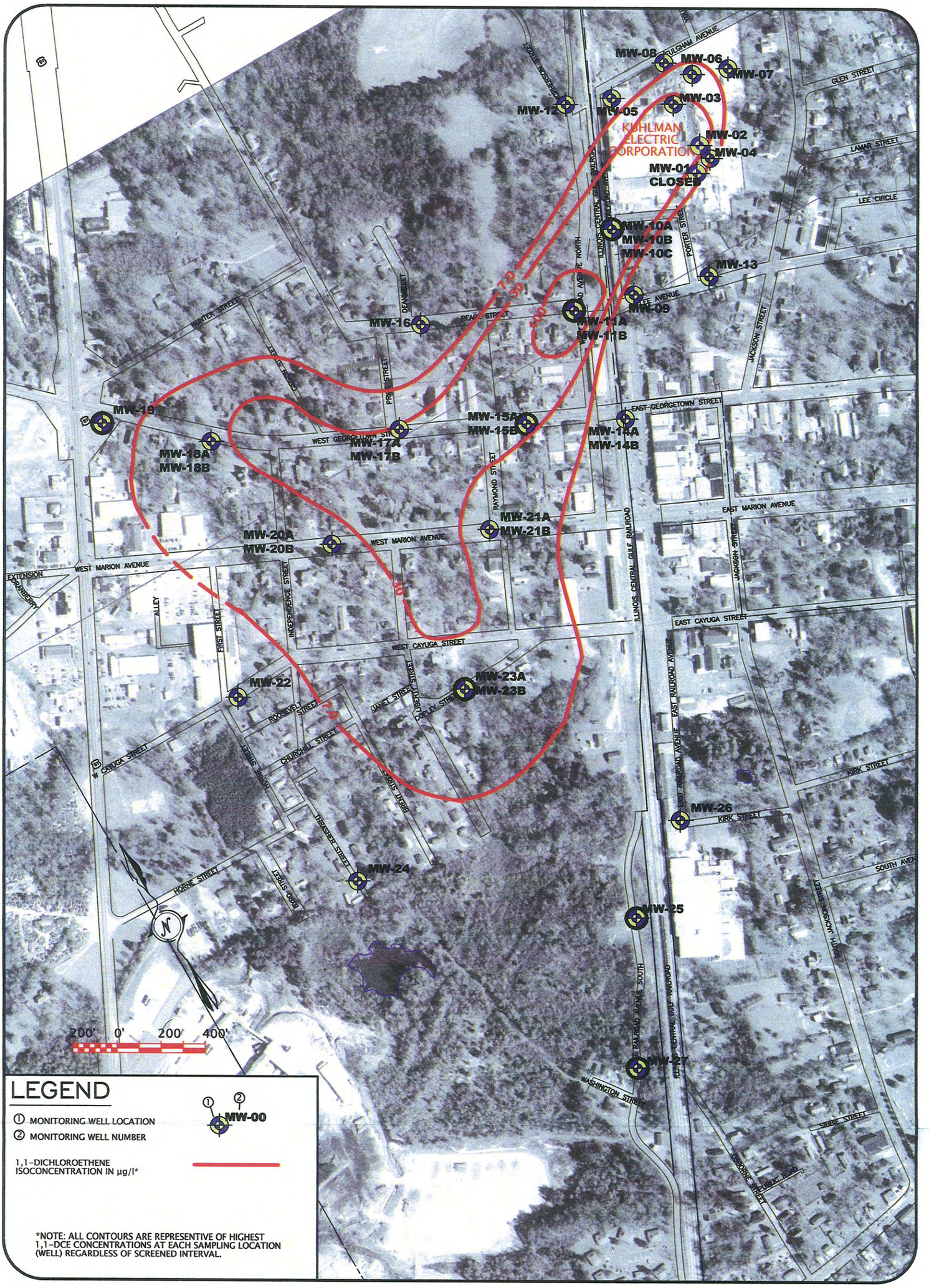
PREPARED FOR:
BorgWarner Inc.

SOURCE AREA 1,4 DIOXANE PLUME IN SOIL

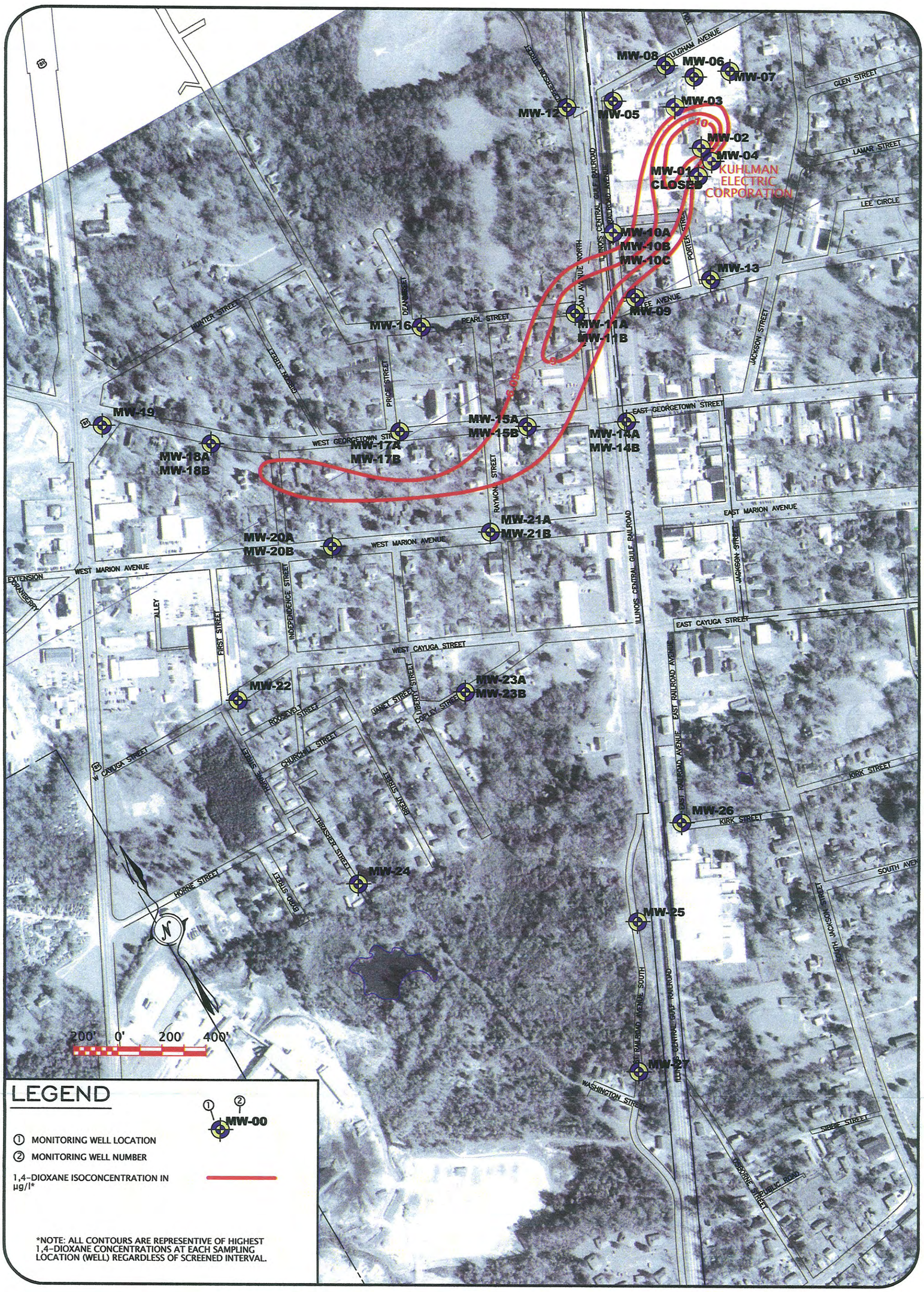
CRYSTAL SPRINGS, MS

SCALE = 1":20'
REV: 0
DATE: 4/19/2009
DR: DGR
CHK: RLM

FIGURE 13



GeoEnvironmental Associates, LLC | MARTIN&SLAGLE PO Box 1023 Black Mountain NC 28711 828.669.3929 828.669.5289	PREPARED FOR: **BorgWarner Inc.** DRAWING NAME: 2008_02 INTERIM PROGRES REPORT\DCE.DWG	SOURCES: 2005 AERIAL PHOTOGRAPHY COPIAH COUNTY, MS TAX ASSESSOR	STUDY AREA PLUME MAP 1 , 1-DICHLOROETHENE MARCH 2009 KUHLMAN ELECTRIC CORPORATION 101 KUHLMAN DRIVE CRYSTAL SPRINGS, MS	SCALE 1":400' DR: DGR CHK: RLM REV: 0 DATE: 4/29/09	19 FIGURE



LEGEND

① MONITORING WELL LOCATION

② MONITORING WELL NUMBER

MW-00

1,4-DIOXANE ISOCONCENTRATION IN µg/l*

*NOTE: ALL CONTOURS ARE REPRESENTIVE OF HIGHEST 1,4-DIOXANE CONCENTRATIONS AT EACH SAMPLING LOCATION (WELL) REGARDLESS OF SCREENED INTERVAL.

GeoEnvironmental Associates, LLC | MARTIN&SLAGLE
PO Box 1023
Black Mountain NC 28711
828.669.3929 828.669.5289

PREPARED FOR:
BorgWarner Inc.

DRAWING NAME:
GROUNDWATER ASSESSMENT REPORT F20.DWG

SOURCES:
2005 AERIAL PHOTOGRAPHY
COPIAH COUNTY, MS TAX ASSESSOR

STUDY AREA
1,4-DIOXANE PLUME IN GROUNDWATER (MARCH 2009)
KUHLMAN ELECTRIC CORPORATION
101 KUHLMAN DRIVE
CRYSTAL SPRINGS, MS

SCALE 1":400'	
DR:DGR	
CHK: SML	
REV: 0	
DATE: 4/29/09	

FIGURE 20

APPENDIX B

Project No.:	KUH0-11-006	Northing:		Logger:	CJ
Project:	SVE PILOT INSTALL	Easting:		Drill Method:	Direct Push
Location:	CRYSTAL SPRINGS, MS	Elevation:		Driller:	WHE
Date:	4-21-12	Total Depth (ft. bls)	72.0	Checked By:	CJ
Begin		Complete		Diameter:	4in.

Page: 1 of 2

Boring No.: SVE-EXT-DEEP

ENVIRONMENTAL MANAGEMENT SERVICES, INC.

7350 Highway 98
Hattiesburg, MS 39402

Depth (ft.)	Symbol	Water Depth	Description / Unified Soil Classification	Lab Sample No.	PID (ppm)
			SUBSURFACE PROFILE	**SAMPLE**	
			Ground Surface		
0			**CONCRETE**		
			SILTY FINE SAND (SC), brown and red		30
				SVE-EXT-DEEP-6'	
5			**SILTY CLAY (CL)**, brown, with gravel		60
			FINE SANDY GRAVEL (SWG), red, hard		
			CLAYEY FINE SANDY GRAVEL (GC), red, brown, hard		
10					48
			FINE SAND (SW), brown,		
					37
15			**FINE SAND WITH GRAVEL (SWG)**, red,		
					38
			FINE SAND (SW), red		
20			**SILTY FINE SAND (SC)**, yellow and brown, with gravel		24
			SILTY FINE SAND (SC), yellow and brown		
25					40
				SVE-EXT-DEEP-30'	
			FINE SANDY GRAVEL (SWG), yellow and brown		
30			**SLIGHTLY SILTY FINE SAND (SC)**, yellow and brown		311
			SILTY FINE SAND (SC), brown and white		
35					113
					110
40			**SILTY FINE SAND (SC)**, white to light brown, with gravel		80
			SILTY FINE SAND (SC), white		
45					60
50					

DESCRIPTION-LAB SAMPLE-PID BORE LOGS.GPJ ENV MANAGEMENT.GDT 5/24/12

Project No.:	KUH0-11-006	Northing:		Logger:	CJ
Project:	SVE PILOT INSTALL	Easting:		Drill Method:	Direct Push
Location:	CRYSTAL SPRINGS, MS	Elevation:		Driller:	WHE
Date:	4-21-12	Total Depth (ft. bls)	72.0	Checked By:	CJ
Begin		Complete		Diameter:	4 in.

Boring No.: SVE-EXT-DEEP

ENVIRONMENTAL MANAGEMENT SERVICES, INC.
7350 Highway 98
Hattiesburg, MS 39402

SUBSURFACE PROFILE				SAMPLE	
Depth (ft.)	Symbol	Water Depth	Description / Unified Soil Classification	Lab Sample No.	PID (ppm)
50			**SILTY FINE SAND (SC)**, white *(Continued)*		58
			SILTY FINE SAND (SC), white, with gravel		50
55			**CLAYEY FINE SAND (SC)**, gray and white, moist		89
60			**SILTY FINE SAND (SC)**, white and tan, some gravel		65
65		▽			44
			SILTY FINE SAND (SC), white		40
70			**BORING TERMINATED AT 72 FEET**		
75					
80					
85					
90					
95					
100					

DESCRIPTION-LAB SAMPLE-PID BORE LOGS.GPJ ENV MANAGEMENT.GDT 5/24/12

Project No.:	KUH0-11-006	Northing:		Logger:	CJ
Project:	SVE PILOT INSTALL	Easting:		Drill Method:	Direct Push
Location:	CRYSTAL SPRINGS, MS	Elevation:		Driller:	WHE
Date:	4-21-12	Total Depth (ft. bls)	68.0	Checked By:	CJ
Begin		Complete		Diameter:	1 in.

Page: 1 of 2

Boring No.: SVE-OBS-DEEP-01

ENVIRONMENTAL MANAGEMENT SERVICES, INC.
7350 Highway 98
Hattiesburg, MS 39402

Depth (ft.)	Symbol	Water Depth	Description / Unified Soil Classification	Lab Sample No.	PID (ppm)
			SUBSURFACE PROFILE	**SAMPLE**	
0			Ground Surface		
			SANDY SILT (ML), brown and red		
			SILTY CLAY (CL), brown and red		75
				SVE-OBS-DEEP-01-6'	
5			**SILTY CLAY (CL)**, brown, some gravel		108
			SANDY CLAY (CL), red and brown, with some gravel		
10					84
			CLAYEY SAND (SC), red and brown, hard, with gravel		
					55
15			**CLAYEY SAND WITH GRAVEL (GC)**, hard		
20			**FINE SAND (SW)**, red		
			SILTY FINE SAND WITH GRAVEL (GC), yellow and brown		86
			FINE SAND (SW), red and yellow, with some gravel		
25			- hard below 26'		60
				SVE-OBS-DEEP-01-30'	
			SLIGHTLY SILTY FINE SAND (SC), yellow and brown		85
30					
			SILTY FINE SAND (SC), brown and white, with some gravel		50
35					
			SILTY FINE SAND (SC), brown and white, with some gravel in reddish layers		60
40					
			SILTY FINE SAND (SC), white to light brown, with gravel		37
45					75
			SILTY FINE SAND (SC), white		
50					

DESCRIPTION-LAB SAMPLE-PID BORE LOGS.GPJ ENV MANAGEMENT.GDT 5/24/12

Project No.:	KUH0-11-006	Northing:		Logger:	CJ
Project:	SVE PILOT INSTALL	Easting:		Drill Method:	Direct Push
Location:	CRYSTAL SPRINGS, MS	Elevation:		Driller:	WHE
Date:	4-21-12	Total Depth (ft. bls)	68.0	Checked By:	CJ
Begin		Complete		Diameter:	1 in.

Page: 2 of 2

Boring No.: SVE-OBS-DEEP-01

ENVIRONMENTAL MANAGEMENT SERVICES, INC.
7350 Highway 98
Hattiesburg, MS 39402

SUBSURFACE PROFILE				SAMPLE	
Depth (ft.)	Symbol	Water Depth	Description / Unified Soil Classification	Lab Sample No.	PID (ppm)
50			**SILTY FINE SAND (SC)**, white *(Continued)*		71
55					55
			- grey and white below 56'		51
60					51
65					35
			BORING TERMINATED AT 68 FEET		
70					
75					
80					
85					
90					
95					
100					

DESCRIPTION-LAB SAMPLE-PID BORE LOGS.GPJ ENV MANAGEMENT.GDT 5/24/12

Project No.:	KUH0-11-006	Northing:		Logger:	CJ
Project:	SVE PILOT INSTALL	Easting:		Drill Method:	Direct Push
Location:	CRYSTAL SPRINGS, MS	Elevation:		Driller:	WHE
Date:	4-21-12	Total Depth (ft. bls)	72.0	Checked By:	CJ
Begin		Complete		Diameter:	1 in.

Page: 1 of 2

Boring No.: SVE-OBS-DEEP-02

ENVIRONMENTAL MANAGEMENT SERVICES, INC.
7350 Highway 98
Hattiesburg, MS 39402

Depth (ft.)	Symbol	Water Depth	Description / Unified Soil Classification	Lab Sample No.	PID (ppm)
			SUBSURFACE PROFILE	**SAMPLE**	
			Ground Surface		
0			**CONCRETE**		
			SANDY SILT (ML), brown and red		125
				SVE-OBS-DEEP-02-6'	
5			**SILTY CLAY (CL)**, brown		1050
			CLAYEY FINE SANDY GRAVEL (GC), red and brown		
10					450
					50
15					
			SANDY SILT (ML), brown		20
20			**SILTY SAND (SC)**, red, with gravel		
			SILTY FINE SANDY GRAVEL (SWG), yellow and brown		60
				SVE-OBS-DEEP-02-26'	
25			**FINE SANDY GRAVEL (SWG)**, yellow and brown - stiff below 26'		154
			SLIGHTLY SILTY FINE SAND (SC), yellow and brown, with some gravel		
30					40
			SILTY FINE SAND (SC), yellow and brown - 1' gravel seam		20
35			**SILTY FINE SAND (SC)**, yellow, with orange mottling - 1' gravel seam		30
40			**SILTY FINE SAND (SC)**, yellow, with gravel		86
45			**SILTY FINE SAND (SC)**, yellow to white, with gravel		143
50					

DESCRIPTION-LAB SAMPLE-PID BORE LOGS.GPJ ENV MANAGEMENT.GDT 5/24/12

Project No.:	KUH0-11-006	Northing:		Logger:	CJ
Project:	SVE PILOT INSTALL	Easting:		Drill Method:	Direct Push
Location:	CRYSTAL SPRINGS, MS	Elevation:		Driller:	WHE
Date:	4-21-12	Total Depth (ft. bls)	72.0	Checked By:	CJ
Begin		Complete		Diameter:	1 in.

Page: 2 of 2

Boring No.: SVE-OBS-DEEP-02

ENVIRONMENTAL MANAGEMENT SERVICES, INC.
7350 Highway 98
Hattiesburg, MS 39402

SUBSURFACE PROFILE				SAMPLE	
Depth (ft.)	Symbol	Water Depth	Description / Unified Soil Classification	Lab Sample No.	PID (ppm)
50			**SILTY FINE SAND (SC)**, yellow to white, with gravel *(Continued)*		175
			FINE SAND (SW), white		
55			- with some gravel		155
			FINE SAND (SW), white		180
60			**FINE SAND (SW)**, yellow and white, with some gravel, moist		145
			- saturated below 64'	SVE-OBS-DEEP-02-66'	230
65					
70					80
			BORING TERMINATED AT 72 FEET		
75					
80					
85					
90					
95					
100					

DESCRIPTION-LAB SAMPLE-PID BORE LOGS.GPJ ENV MANAGEMENT.GDT 5/24/12

Boring No.: SVE-OBS-DEEP-03

Project No.:	KUH0-11-006	Northing:		Logger:	CJ
Project:	SVE PILOT INSTALL	Easting:		Drill Method:	Direct Push
Location:	CRYSTAL SPRINGS, MS	Elevation:		Driller:	WHE
Date:	4-22-12	Total Depth (ft. bls)	68.0	Checked By:	CJ
Begin		Complete		Diameter:	1 in

ENVIRONMENTAL MANAGEMENT SERVICES, INC.
7350 Highway 98
Hattiesburg, MS 39402

Depth (ft.)	Symbol	Water Depth	Description / Unified Soil Classification	Lab Sample No.	PID (ppm)
			SUBSURFACE PROFILE	**SAMPLE**	
			Ground Surface		
0			**CONCRETE**		
			SANDY SILT (ML), brown		823
			SILTY CLAY (CL), yellow and brown	SVE-OBS-DEEP-03-6'	
5			**CLAYEY FINE SAND (SC)**, yellow and brown		1650
			- with some gravel below 7'		
			CLAYEY FINE SANDY GRAVEL (SWG), red and brown, hard		800
10					
					700
15			**FINE SAND (SW)**, red, with some gravel		
			- 6" tan sandy gravel seam		508
			- 6" tan sandy silt seam		
20			- tan sandy gravel seam		
					415
			CLAYEY SILT (ML), tan, with red mottling		
			FINE SAND (SW), red and tan, with gravel		
25			**FINE SAND (SW)**, red and tan, with gravel seams		390
30					315
35					285
					295
40			**FINE SAND (SW)**, grey to light brown, with gravel		200
45			**FINE SAND (SW)**, white		
			- gravel seam		206
50					

DESCRIPTION-LAB SAMPLE-PID BORE LOGS.GPJ ENV MANAGEMENT.GDT 5/24/12

Project No.:	KUH0-11-006	Northing:		Logger:	CJ
Project:	SVE PILOT INSTALL	Easting:		Drill Method:	Direct Push
Location:	CRYSTAL SPRINGS, MS	Elevation:		Driller:	WHE
Date:	4-22-12	Total Depth (ft. bls)	68.0	Checked By:	CJ
Begin		Complete		Diameter:	1 in.

Boring No.: SVE-OBS-DEEP-03

ENVIRONMENTAL MANAGEMENT SERVICES, INC.
7350 Highway 98
Hattiesburg, MS 39402

SUBSURFACE PROFILE				SAMPLE	
Depth (ft.)	Symbol	Water Depth	Description / Unified Soil Classification	Lab Sample No.	PID (ppm)
50			**FINE SAND (SW)**, white *(Continued)*		208
			- with large gravel below 51'		
			- grey and white below 53.5'		115
55			- gravel seam		
					230
60					
					280
				SVE-OBS-DEEP-03-66'	
65			- saturated		320
			BORING TERMINATED AT 68 FEET		
70					
75					
80					
85					
90					
95					
100					

DESCRIPTION-LAB SAMPLE-PID BORE LOGS.GPJ ENV MANAGEMENT.GDT 5/24/12

Boring No.: SVE-OBS-DEEP-04

Project No.:	KUH0-11-006	Northing:		Logger:	CJ
Project:	SVE PILOT INSTALL	Easting:		Drill Method:	Direct Push
Location:	CRYSTAL SPRINGS, MS	Elevation:		Driller:	WHE
Date:	4-21-12	Total Depth (ft. bls)	68.0	Checked By:	CJ
Begin		Complete		Diameter:	1 in

ENVIRONMENTAL MANAGEMENT SERVICES, INC.
7350 Highway 98
Hattiesburg, MS 39402

Depth (ft.)	Symbol	Water Depth	Description / Unified Soil Classification	Lab Sample No.	PID (ppm)
			SUBSURFACE PROFILE	**SAMPLE**	
			Ground Surface		
0			**CONCRETE**	SVE-OBS-DEEP-04-2'	
			FINE SANDY SILT (ML), brown and red		275
5			**SILTY CLAY (CL)**, brown		176
			- with some gravel below 8'		
10			**CLAYEY FINE SANDY GRAVEL (SWG)**, red to brown		150
			FINE SAND (SW), red, with gravel		150
15					135
20			**FINE SAND (SW)**, red		148
			- tan below 21.5'		
			- with gravel below 22'		
			SILTY CLAY (CL), tan, with gravel		
25			**FINE SAND (SW)**, tan		
			FINE SAND (SW), orange		133
			- gravel seam		
			- tan		
			- gravel seam		
			- orange and tan below 28'		
30			- grey, with gravel below 29.5'		150
35			- tan and orange below 35'		120
			- yellow and grey, with gravel below 38'		120
40			- red and tan		220
45			- grey and red		218
			- gravel seam		
			- gravel seam		
50			- tan, with gravel below 48'		

DESCRIPTION-LAB SAMPLE-PID BORE LOGS.GPJ ENV MANAGEMENT.GDT 5/24/12

Project No.:	KUH0-11-006	Northing:		Logger:	CJ
Project:	SVE PILOT INSTALL	Easting:		Drill Method:	Direct Push
Location:	CRYSTAL SPRINGS, MS	Elevation:		Driller:	WHE
Date:	4-21-12	Total Depth (ft. bls)	68.0	Checked By:	CJ
Begin		Complete		Diameter:	1 in

Boring No.: SVE-OBS-DEEP-04

ENVIRONMENTAL MANAGEMENT SERVICES, INC.
7350 Highway 98
Hattiesburg, MS 39402

SUBSURFACE PROFILE				SAMPLE	
Depth (ft.)	Symbol	Water Depth	Description / Unified Soil Classification	Lab Sample No.	PID (ppm)
50			**FINE SAND (SW)**, orange *(Continued)*		240
				SVE-OBS-DEEP-04-54'	
			FINE SAND (SW), tan and white		250
55			- gravel seam - gravel seam - with gravel below 56'		
					230
60			- white and tan, SILTY FINE SAND (SC) layer		225
			- saturated		
65					150
			BORING TERMINATED AT 68 FEET		
70					
75					
80					
85					
90					
95					
100					

DESCRIPTION-LAB SAMPLE-PID BORE LOGS.GPJ ENV MANAGEMENT.GDT 5/24/12

Boring No.: SVE-OBS-DEEP-05

Project No.:	KUH0-11-006	Northing:		Logger:	EA
Project:	SVE PILOT INSTALL	Easting:		Drill Method:	Direct Push
Location:	CRYSTAL SPRINGS, MS	Elevation:		Driller:	WHE
Date:	4-28-12	Total Depth (ft. bls)	68.0	Checked By:	CJ
Begin		Complete		Diameter:	1 in.

Page: 1 of 2

ENVIRONMENTAL MANAGEMENT SERVICES, INC.
7350 Highway 98
Hattiesburg, MS 39402

Depth (ft.)	Symbol	Water Depth	Description / Unified Soil Classification	Lab Sample No.	PID (ppm)
			SUBSURFACE PROFILE	**SAMPLE**	
			Ground Surface		
0			**CLAY (CH)**, tan and orange, soft		
			SILTY SANDY CLAY (CL), grey, firm		0.0
				SVE-OBS-SHAL-05	0.0
5					0.0
			CLAY (CH), brown, soft		
			SANDY, CLAY, GRAVEL (GW-GC), brown and red, hard		0.0
10					
			FINE MEDIUM GRAINED SAND (FMS), orange and red, with some gravel		0.0
15			- no gravel below 16'		0.0
20			**SANDY GRAVEL (GPS)**, well graded		0.0
			SAND (SW), yellow and orange, well graded, some gravel		0.0
25			- no gravel below 27'		
			- 1' gravel seam		0.0
30			- white and yellow below 32'		0.0
35			- 1' gravel seam - white and orange below 36'		0.0
40			- 1' gravel seam		0.0
45			- 6" gravel seam - 1' gravel seam		0.0
50			**GRAVELY SAND (SWG)**, well graded, white		

DESCRIPTION-LAB SAMPLE-PID BORE LOGS.GPJ ENV MANAGEMENT.GDT 5/24/12

Project No.:	KUH0-11-006	Northing:		Logger:	EA
Project:	SVE PILOT INSTALL	Easting:		Drill Method:	Direct Push
Location:	CRYSTAL SPRINGS, MS	Elevation:		Driller:	WHE
Date:	4-28-12	Total Depth (ft. bls)	68.0	Checked By:	CJ
Begin		Complete		Diameter:	1 in.

Page: 2 of 2

Boring No.: SVE-OBS-DEEP-05

ENVIRONMENTAL MANAGEMENT SERVICES, INC.
7350 Highway 98
Hattiesburg, MS 39402

SUBSURFACE PROFILE				SAMPLE	
Depth (ft.)	Symbol	Water Depth	Description / Unified Soil Classification	Lab Sample No.	PID (ppm)
50			**NO RECOVERY**		0.0
			SAND (SW), white		
			- 1' gravel seam		0.0
55			**NO RECOVERY**		
			SAND (SW), white, with gravel		
					0.0
60			- white and yellow below 60'		
			- 6" gravel seam - with small pebbles		0.0
			NO RECOVERY	SVE-OBS-DEEP-05	
65			**FINE GRAINED SAND (FMS)**, white, saturated		0.0
			BORING TERMINATED AT 68 FEET		
70					
75					
80					
85					
90					
95					
100					

DESCRIPTION-LAB SAMPLE-PID BORE LOGS.GPJ ENV MANAGEMENT.GDT 5/24/12

APPENDIX C

LELAP Certification # 01960

6500 Sunplex Drive
Ocean Springs, MS 39564
228.875.6420 Phone
228.875.6423 Fax

May 07, 2012

Chris Johnson

Work Order # : 1205006

Purchase Order #: KUH0-11-006

Environmental Management Services
PO Box 15369
Hattiesburg, MS 39404-5369

RE: SVE Pilot Drilling

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 05/01/12 08:32. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Harry P. Howell

President
Micro-Methods Laboratory, Inc.

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services
PO Box 15369
Hattiesburg MS, 39404-5369

Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received
SVE-OBS-SHAL-05	1205006-01	Soil	04/28/12 13:00	*Ethan Allen*	05/01/12 08:32
SVE-OBS-DEEP-05	1205006-02	Soil	04/28/12 13:00	*Ethan Allen*	05/01/12 08:32
TBV 4011	1205006-03	Water	04/28/12 13:00	*Micro Methods*	05/01/12 08:32

Sample Receipt Conditions

Date/Time Received: 5/1/2012 8:32:00AM
Received by: Sarah E. Tomek
Date/Time Logged: 5/1/2012 9:01:00AM
Cooler ID: **#391**

Shipped by: Fed Ex
Submitted by: Fed Ex
Logged by: Sarah E. Tomek
Receipt Temperature: 0.30 °C

Custody Seals	*Yes*	*Received on Ice*	*Yes*
Containers Intact	*Yes*	*No Ice, Short Trip*	*No*
COC/Labels Agree	*Yes*	*Obvious Contamination*	*No*
Labels Complete	*Yes*	*Rush to meet HT*	*No*
COC Complete	*Yes*		

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services	Project: SVE Pilot Drilling	
PO Box 15369	Project Number: [none]	**Reported:**
Hattiesburg MS, 39404-5369	Project Manager: Chris Johnson	05/07/12 09:45

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments: *No Summary Comments*

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
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228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services	Project: SVE Pilot Drilling	
PO Box 15369	Project Number: [none]	**Reported:**
Hattiesburg MS, 39404-5369	Project Manager: Chris Johnson	05/07/12 09:45

Volatile Organic Compounds by GC/MS-EPA 8260B

Qualification:

CC-01 CCV above acceptance limits. Results reported from this calibration were below the reporting limits.

1,1-Dichloroethane, 1,4-Dioxane, Bromomethane, Chloromethane

1205006-03[TBV 4011]

CC-02 ICV exceeds the acceptance limit. Results reported from calibration were below the reporting limits.

Carbon disulfide

1205006-01[SVE-OBS-SHAL-05], 1205006-02[SVE-OBS-DEEP-05]

L1 LCS and/or LCSD Recovery Limit exceeded.

Acetone

2E03028-BS1

L2 LCS and/or LCSD Recovery below acceptance limit.

Bromomethane, Vinyl acetate

2E03028-BS1, 2E04015-BSD1

L3 LCS/LCSD Precision Limit exceeded.

Bromomethane

2E03028-BSD1

M1 MS/MSD Recovery limit exceeded.

Carbon disulfide

2E04015-MSD3

M2 MS/MSD Recovery below acceptable limit.

Bromomethane, Chloromethane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene

2E04015-MS3, 2E04015-MSD3, 2E04015-MS1

Z-01 Analyte spiked at a concentration below its method detection limit. Recovery of the analyte is therefore outside of established control limits.

1,4-Dioxane

2E03028-BS1, 2E03028-BSD1

MICRO-METHODS LABORATORY, INC.

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Environmental Management Services
PO Box 15369
Hattiesburg MS, 39404-5369

Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

SVE-OBS-SHAL-05

1205006-01 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	ND	4.19	ug/kg	1	2E04015	KRL	04/28/12 13:00	05/02/12 23:30	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	4.19	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	4.19	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	4.19	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	ND	4.19	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	4.19	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	4.19	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	168	"	"	"	KRL	"	"	"	
2-Butanone	ND	8.39	"	"	"	KRL	"	"	"	
2-Hexanone	ND	8.39	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	8.39	"	"	"	KRL	"	"	"	
Acetone	ND	41.9	"	"	"	KRL	"	"	"	
Benzene	ND	4.19	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	4.19	"	"	"	KRL	"	"	"	
Bromoform	ND	4.19	"	"	"	KRL	"	"	"	
Bromomethane	ND	4.19	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	4.19	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	4.19	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	4.19	"	"	"	KRL	"	"	"	
Chloroethane	ND	4.19	"	"	"	KRL	"	"	"	
Chloroform	ND	4.19	"	"	"	KRL	"	"	"	
Chloromethane	ND	4.19	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	4.19	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	4.19	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	4.19	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	4.19	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	4.19	"	"	"	KRL	"	"	"	
Methylene chloride	ND	4.19	"	"	"	KRL	"	"	"	
o-Xylene	ND	4.19	"	"	"	KRL	"	"	"	
Styrene	ND	4.19	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	4.19	"	"	"	KRL	"	"	"	
Toluene	ND	4.19	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	4.19	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	4.19	"	"	"	KRL	"	"	"	
Trichloroethene	ND	4.19	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	8.39	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	4.19	"	"	"	KRL	"	"	"	

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services
PO Box 15369
Hattiesburg MS, 39404-5369

Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

SVE-OBS-SHAL-05

1205006-01 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	55.3	*111 %*	*70-130*	*2E04015*	KRL	*04/28/12 13:00*	"	"	
1,2-Dichloroethane-d4	56.0	*112 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	49.2	*98.4 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	48.5	*97.1 %*	*70-130*	"	KRL	"	"	"	

MICRO-METHODS LABORATORY, INC.

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Environmental Management Services
PO Box 15369
Hattiesburg MS, 39404-5369

Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

SVE-OBS-DEEP-05

1205006-02 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	ND	4.32	ug/kg	1	2E04015	KRL	04/28/12 13:00	05/02/12 23:55	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	4.32	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	4.32	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	4.32	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	ND	4.32	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	4.32	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	4.32	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	173	"	"	"	KRL	"	"	"	
2-Butanone	ND	8.64	"	"	"	KRL	"	"	"	
2-Hexanone	ND	8.64	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	8.64	"	"	"	KRL	"	"	"	
Acetone	ND	43.2	"	"	"	KRL	"	"	"	
Benzene	ND	4.32	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	4.32	"	"	"	KRL	"	"	"	
Bromoform	ND	4.32	"	"	"	KRL	"	"	"	
Bromomethane	ND	4.32	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	4.32	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	4.32	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	4.32	"	"	"	KRL	"	"	"	
Chloroethane	ND	4.32	"	"	"	KRL	"	"	"	
Chloroform	ND	4.32	"	"	"	KRL	"	"	"	
Chloromethane	ND	4.32	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	4.32	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	4.32	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	4.32	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	4.32	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	4.32	"	"	"	KRL	"	"	"	
Methylene chloride	ND	4.32	"	"	"	KRL	"	"	"	
o-Xylene	ND	4.32	"	"	"	KRL	"	"	"	
Styrene	ND	4.32	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	4.32	"	"	"	KRL	"	"	"	
Toluene	ND	4.32	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	4.32	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	4.32	"	"	"	KRL	"	"	"	
Trichloroethene	ND	4.32	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	8.64	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	4.32	"	"	"	KRL	"	"	"	

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
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228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services
PO Box 15369
Hattiesburg MS, 39404-5369

Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

SVE-OBS-DEEP-05

1205006-02 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	55.6	*111 %*	*70-130*	*2E04015*	KRL	*04/28/12 13:00*	"	"	
1,2-Dichloroethane-d4	53.3	*107 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	49.9	*99.7 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	49.3	*98.6 %*	*70-130*	"	KRL	"	"	"	

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
Ocean Springs, MS 39564
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Environmental Management Services
PO Box 15369
Hattiesburg MS, 39404-5369

Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

TBV 4011

1205006-03 (Water)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	ND	5.00	ug/L	1	2E03028	KRL	05/01/12 10:30	05/01/12 13:33	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	5.00	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	5.00	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	5.00	"	"	"	KRL	"	"	"	CC-01
1,1-Dichloroethene	ND	5.00	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	5.00	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	5.00	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	50.0	"	"	"	KRL	"	"	"	CC-01
2-Butanone	ND	10.0	"	"	"	KRL	"	"	"	
2-Hexanone	ND	10.0	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	10.0	"	"	"	KRL	"	"	"	
Acetone	ND	10.0	"	"	"	KRL	"	"	"	
Benzene	ND	5.00	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	5.00	"	"	"	KRL	"	"	"	
Bromoform	ND	5.00	"	"	"	KRL	"	"	"	
Bromomethane	ND	5.00	"	"	"	KRL	"	"	"	CC-01
Carbon disulfide	ND	5.00	"	"	"	KRL	"	"	"	
Carbon Tetrachloride	ND	5.00	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	5.00	"	"	"	KRL	"	"	"	
Chloroethane	ND	5.00	"	"	"	KRL	"	"	"	
Chloroform	ND	5.00	"	"	"	KRL	"	"	"	
Chloromethane	ND	5.00	"	"	"	KRL	"	"	"	CC-01
cis-1,2-Dichloroethene	ND	5.00	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	5.00	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	5.00	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	5.00	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	5.00	"	"	"	KRL	"	"	"	
Methylene chloride	ND	5.00	"	"	"	KRL	"	"	"	
o-Xylene	ND	5.00	"	"	"	KRL	"	"	"	
Styrene	ND	5.00	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	5.00	"	"	"	KRL	"	"	"	
Toluene	ND	5.00	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	5.00	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	5.00	"	"	"	KRL	"	"	"	
Trichloroethene	ND	5.00	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	5.00	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	5.00	"	"	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

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05/07/12 09:45

TBV 4011

1205006-03 (Water)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	53.2	*106 %*	*70-130*	*2E03028*	KRL	*05/01/12 10:30*	"	"	
1,2-Dichloroethane-d4	54.4	*109 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	49.1	*98.3 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	48.6	*97.3 %*	*70-130*	"	KRL	"	"	"	

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Project Number: [none]
Project Manager: Chris Johnson

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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E03028 - EPA 5030B										
Blank (2E03028-BLK1)						***Prepared & Analyzed: 05/01/12***				
1,1,1-Trichloroethane	ND	5.00	ug/L							
1,1,2,2-Tetrachloroethane	ND	5.00	"							
1,1,2-Trichloroethane	ND	5.00	"							
1,1-Dichloroethane	ND	5.00	"							
1,1-Dichloroethene	ND	5.00	"							
1,2-Dichloroethane	ND	5.00	"							
1,2-Dichloropropane	ND	5.00	"							
1,4-Dioxane	ND	50.0	"							
2-Butanone	ND	10.0	"							
2-Hexanone	ND	10.0	"							
4-Methyl-2-pentanone	ND	10.0	"							
Acetone	ND	10.0	"							
Benzene	ND	5.00	"							
Bromodichloromethane	ND	5.00	"							
Bromoform	ND	5.00	"							
Bromomethane	ND	5.00	"							
Carbon disulfide	ND	5.00	"							
Carbon Tetrachloride	ND	5.00	"							
Chlorobenzene	ND	5.00	"							
Chloroethane	ND	5.00	"							
Chloroform	ND	5.00	"							
Chloromethane	ND	5.00	"							
cis-1,2-Dichloroethene	ND	5.00	"							
cis-1,3-Dichloropropene	ND	5.00	"							
Dibromochloromethane	ND	5.00	"							
Ethylbenzene	ND	5.00	"							
m,p-Xylene	ND	5.00	"							
Methylene chloride	ND	5.00	"							
o-Xylene	ND	5.00	"							
Styrene	ND	5.00	"							
Tetrachloroethene	ND	5.00	"							
Toluene	ND	5.00	"							
trans-1,2-Dichloroethene	ND	5.00	"							
trans-1,3-Dichloropropene	ND	5.00	"							
Trichloroethene	ND	5.00	"							
Vinyl acetate	ND	5.00	"							
Vinyl chloride	ND	5.00	"							
Surrogate: Dibromofluoromethane	*53.1*		"	*50.0*		*106*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*52.8*		"	*50.0*		*106*	*70-130*			
Surrogate: Toluene-d8	*49.8*		"	*50.0*		*99.6*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*49.9*		"	*50.0*		*99.8*	*70-130*			

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Project Number: [none]
Project Manager: Chris Johnson

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05/07/12 09:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E03028 - EPA 5030B										
LCS (2E03028-BS1)						***Prepared & Analyzed: 05/01/12***				
1,1,1-Trichloroethane	22.7	5.00	ug/L	20.0		114	70-130			
1,1,2,2-Tetrachloroethane	20.3	5.00	"	20.0		102	70-130			
1,1,2-Trichloroethane	22.1	5.00	"	20.0		110	70-130			
1,1-Dichloroethane	25.6	5.00	"	20.0		128	74.6-139			
1,1-Dichloroethene	21.5	5.00	"	20.0		108	72.8-138			
1,2-Dichloroethane	21.0	5.00	"	20.0		105	70-130			
1,2-Dichloropropane	20.6	5.00	"	20.0		103	70-130			
1,4-Dioxane	ND	50.0	"	20.0			5-215			Z-01
2-Butanone	20.0	10.0	"	20.0		99.8	58.5-136			
2-Hexanone	19.0	10.0	"	20.0		94.8	55.1-136			
4-Methyl-2-pentanone	19.8	10.0	"	20.0		99.1	50.2-131			
Acetone	38.8	10.0	"	20.0		194	27.7-177			L1
Benzene	21.1	5.00	"	20.0		105	70-130			
Bromodichloromethane	20.9	5.00	"	20.0		104	70-130			
Bromoform	21.7	5.00	"	20.0		109	70-130			
Bromomethane	9.66	5.00	"	20.0		48.3	58.1-148			L2
Carbon disulfide	22.0	5.00	"	20.0		110	65.3-138			
Carbon Tetrachloride	24.6	5.00	"	20.0		123	70-130			
Chlorobenzene	21.0	5.00	"	20.0		105	70-130			
Chloroethane	21.0	5.00	"	20.0		105	53.6-151			
Chloroform	21.4	5.00	"	20.0		107	70-130			
Chloromethane	14.2	5.00	"	20.0		70.8	58.8-115			
cis-1,2-Dichloroethene	21.2	5.00	"	20.0		106	70-130			
cis-1,3-Dichloropropene	18.9	5.00	"	20.0		94.4	70-130			
Dibromochloromethane	21.5	5.00	"	20.0		107	70-130			
Ethylbenzene	21.2	5.00	"	20.0		106	70-130			
m,p-Xylene	43.3	5.00	"	40.0		108	70-130			
Methylene chloride	26.4	5.00	"	20.0		132	71.6-142			
o-Xylene	21.4	5.00	"	20.0		107	70-130			
Styrene	21.8	5.00	"	20.0		109	70-130			
Tetrachloroethene	22.0	5.00	"	20.0		110	70-130			
Toluene	20.8	5.00	"	20.0		104	70-130			
trans-1,2-Dichloroethene	24.3	5.00	"	20.0		122	73.6-138			
trans-1,3-Dichloropropene	20.3	5.00	"	20.0		102	70-130			
Trichloroethene	20.5	5.00	"	20.0		103	70-130			
Vinyl acetate	3.99	5.00	"				66.6-129			
Vinyl chloride	16.3	5.00	"	20.0		81.3	70-130			
Surrogate: Dibromofluoromethane	*52.0*		"	*50.0*		*104*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*51.4*		"	*50.0*		*103*	*70-130*			
Surrogate: Toluene-d8	*49.3*		"	*50.0*		*98.5*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.0*		"	*50.0*		*100*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E03028 - EPA 5030B										
LCS Dup (2E03028-BSD1)						***Prepared & Analyzed: 05/01/12***				
1,1,1-Trichloroethane	22.6	5.00	ug/L	20.0		113	70-130	0.485	35	
1,1,2,2-Tetrachloroethane	22.2	5.00	"	20.0		111	70-130	8.57	35	
1,1,2-Trichloroethane	22.0	5.00	"	20.0		110	70-130	0.499	35	
1,1-Dichloroethane	22.2	5.00	"	20.0		111	74.6-139	14.1	35	
1,1-Dichloroethene	21.6	5.00	"	20.0		108	72.8-138	0.417	35	
1,2-Dichloroethane	20.7	5.00	"	20.0		104	70-130	1.29	35	
1,2-Dichloropropane	21.8	5.00	"	20.0		109	70-130	5.99	35	
1,4-Dioxane	ND	50.0	"	20.0			5-215		35	Z-01
2-Butanone	20.5	10.0	"	20.0		103	58.5-136	2.72	35	
2-Hexanone	19.5	10.0	"	20.0		97.5	55.1-136	2.81	35	
4-Methyl-2-pentanone	19.4	10.0	"	20.0		96.9	50.2-131	2.25	35	
Acetone	31.0	10.0	"	20.0		155	27.7-177	22.4	35	
Benzene	21.6	5.00	"	20.0		108	70-130	2.35	35	
Bromodichloromethane	20.9	5.00	"	20.0		104	70-130	0.0479	35	
Bromoform	22.5	5.00	"	20.0		113	70-130	3.80	35	
Bromomethane	14.8	5.00	"	20.0		74.1	58.1-148	42.1	35	L3
Carbon disulfide	20.5	5.00	"	20.0		102	65.3-138	7.07	35	
Carbon Tetrachloride	24.0	5.00	"	20.0		120	70-130	2.51	35	
Chlorobenzene	22.0	5.00	"	20.0		110	70-130	4.51	35	
Chloroethane	21.5	5.00	"	20.0		108	53.6-151	2.59	35	
Chloroform	21.6	5.00	"	20.0		108	70-130	0.930	35	
Chloromethane	15.8	5.00	"	20.0		78.8	58.8-115	10.8	35	
cis-1,2-Dichloroethene	21.0	5.00	"	20.0		105	70-130	0.664	35	
cis-1,3-Dichloropropene	20.2	5.00	"	20.0		101	70-130	6.76	35	
Dibromochloromethane	21.6	5.00	"	20.0		108	70-130	0.464	35	
Ethylbenzene	22.1	5.00	"	20.0		110	70-130	4.21	35	
m,p-Xylene	44.3	5.00	"	40.0		111	70-130	2.31	35	
Methylene chloride	22.7	5.00	"	20.0		113	71.6-142	15.2	35	
o-Xylene	22.0	5.00	"	20.0		110	70-130	2.58	35	
Styrene	22.6	5.00	"	20.0		113	70-130	3.92	35	
Tetrachloroethene	21.1	5.00	"	20.0		106	70-130	4.03	35	
Toluene	21.4	5.00	"	20.0		107	70-130	2.79	35	
trans-1,2-Dichloroethene	21.8	5.00	"	20.0		109	73.6-138	10.8	35	
trans-1,3-Dichloropropene	22.2	5.00	"	20.0		111	70-130	9.12	35	
Trichloroethene	21.4	5.00	"	20.0		107	70-130	4.01	35	
Vinyl acetate	4.12	5.00	"				66.6-129	3.21	35	
Vinyl chloride	17.7	5.00	"	20.0		88.6	70-130	8.60	35	
Surrogate: Dibromofluoromethane	*51.6*		"	*50.0*		*103*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*49.7*		"	*50.0*		*99.4*	*70-130*			
Surrogate: Toluene-d8	*49.8*		"	*50.0*		*99.7*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*51.0*		"	*50.0*		*102*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E03028 - EPA 5030B										
Matrix Spike (2E03028-MS1)	**Source: 1204402-01**					***Prepared & Analyzed: 05/01/12***				
1,1,1-Trichloroethane	22.1	5.00	ug/L	20.0	ND	110	70-130			
1,1,2,2-Tetrachloroethane	23.7	5.00	"	20.0	ND	118	71.9-140			
1,1,2-Trichloroethane	23.4	5.00	"	20.0	ND	117	70-130			
1,1-Dichloroethane	23.2	5.00	"	20.0	ND	116	78.8-143			
1,1-Dichloroethene	21.8	5.00	"	20.0	ND	109	72.8-143			
1,2-Dichloroethane	22.1	5.00	"	20.0	ND	110	70-130			
1,2-Dichloropropane	21.6	5.00	"	20.0	ND	108	70-130			
1,4-Dioxane	ND	50.0	"	20.0	ND		0-0			
2-Butanone	21.6	10.0	"	20.0	ND	108	56.9-131			
2-Hexanone	24.4	10.0	"	20.0	ND	122	54.7-128			
4-Methyl-2-pentanone	24.0	10.0	"	20.0	ND	120	45.7-133			
Acetone	28.2	10.0	"	20.0	7.56	103	48.4-154			
Benzene	23.6	5.00	"	20.0	1.50	110	70-130			
Bromodichloromethane	20.3	5.00	"	20.0	ND	102	70-130			
Bromoform	21.2	5.00	"	20.0	ND	106	60.7-127			
Bromomethane	16.5	5.00	"	20.0	ND	82.3	67.1-144			
Carbon disulfide	20.8	5.00	"	20.0	ND	104	46.2-151			
Carbon Tetrachloride	21.9	5.00	"	20.0	ND	110	69.8-136			
Chlorobenzene	22.2	5.00	"	20.0	ND	111	70-130			
Chloroethane	14.1	5.00	"	20.0	ND	70.7	54.8-152			
Chloroform	22.2	5.00	"	20.0	ND	111	70-130			
Chloromethane	16.0	5.00	"	20.0	ND	79.9	57.5-121			
cis-1,2-Dichloroethene	22.3	5.00	"	20.0	ND	112	70-130			
cis-1,3-Dichloropropene	19.6	5.00	"	20.0	ND	98.0	70-130			
Dibromochloromethane	20.1	5.00	"	20.0	ND	100	67.2-125			
Ethylbenzene	25.0	5.00	"	20.0	2.34	114	70-130			
m,p-Xylene	45.3	5.00	"	40.0	1.85	109	63.9-131			
Methylene chloride	26.6	5.00	"	20.0	3.90	114	74.2-144			
o-Xylene	23.4	5.00	"	20.0	0.890	112	60.7-129			
Styrene	23.1	5.00	"	20.0	ND	116	10.5-158			
Tetrachloroethene	21.3	5.00	"	20.0	ND	106	70-130			
Toluene	25.4	5.00	"	20.0	3.74	109	70-130			
trans-1,2-Dichloroethene	22.4	5.00	"	20.0	ND	112	71.7-144			
trans-1,3-Dichloropropene	21.4	5.00	"	20.0	ND	107	65-115			
Trichloroethene	21.8	5.00	"	20.0	ND	109	70-130			
Vinyl acetate	4.39	5.00	"		ND		55-132			
Vinyl chloride	18.1	5.00	"	20.0	ND	90.4	65-127			
Surrogate: Dibromofluoromethane	*51.2*		"	*50.0*		*102*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*52.7*		"	*50.0*		*105*	*70-130*			
Surrogate: Toluene-d8	*49.8*		"	*50.0*		*99.6*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.8*		"	*50.0*		*102*	*70-130*			

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Project: SVE Pilot Drilling
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Project Manager: Chris Johnson

Reported:
05/07/12 09:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E03028 - EPA 5030B										
Matrix Spike (2E03028-MS2)	**Source: 1204412-01**						***Prepared & Analyzed: 05/01/12***			
1,1,1-Trichloroethane	21.8	5.00	ug/L	20.0	ND	109	70-130			
1,1,2,2-Tetrachloroethane	21.8	5.00	"	20.0	ND	109	71.9-140			
1,1,2-Trichloroethane	22.1	5.00	"	20.0	ND	111	70-130			
1,1-Dichloroethane	22.1	5.00	"	20.0	ND	111	78.8-143			
1,1-Dichloroethene	21.0	5.00	"	20.0	ND	105	72.8-143			
1,2-Dichloroethane	21.1	5.00	"	20.0	ND	105	70-130			
1,2-Dichloropropane	21.0	5.00	"	20.0	ND	105	70-130			
1,4-Dioxane	ND	50.0	"	20.0	ND		0-0			
2-Butanone	20.8	10.0	"	20.0	ND	104	56.9-131			
2-Hexanone	20.3	10.0	"	20.0	ND	102	54.7-128			
4-Methyl-2-pentanone	21.6	10.0	"	20.0	ND	108	45.7-133			
Acetone	20.6	10.0	"	20.0	4.68	79.8	48.4-154			
Benzene	21.6	5.00	"	20.0	0.410	106	70-130			
Bromodichloromethane	19.2	5.00	"	20.0	ND	96.1	70-130			
Bromoform	19.5	5.00	"	20.0	ND	97.7	60.7-127			
Bromomethane	15.6	5.00	"	20.0	ND	77.9	67.1-144			
Carbon disulfide	19.3	5.00	"	20.0	ND	96.4	46.2-151			
Carbon Tetrachloride	21.1	5.00	"	20.0	ND	106	69.8-136			
Chlorobenzene	21.7	5.00	"	20.0	ND	109	70-130			
Chloroethane	18.1	5.00	"	20.0	ND	90.5	54.8-152			
Chloroform	21.2	5.00	"	20.0	ND	106	70-130			
Chloromethane	16.3	5.00	"	20.0	ND	81.7	57.5-121			
cis-1,2-Dichloroethene	20.7	5.00	"	20.0	ND	104	70-130			
cis-1,3-Dichloropropene	19.0	5.00	"	20.0	ND	95.2	70-130			
Dibromochloromethane	19.3	5.00	"	20.0	ND	96.7	67.2-125			
Ethylbenzene	21.9	5.00	"	20.0	ND	109	70-130			
m,p-Xylene	44.3	5.00	"	40.0	ND	111	63.9-131			
Methylene chloride	22.3	5.00	"	20.0	0.630	109	74.2-144			
o-Xylene	21.7	5.00	"	20.0	ND	109	60.7-129			
Styrene	22.6	5.00	"	20.0	ND	113	10.5-158			
Tetrachloroethene	21.4	5.00	"	20.0	ND	107	70-130			
Toluene	21.6	5.00	"	20.0	0.530	105	70-130			
trans-1,2-Dichloroethene	21.6	5.00	"	20.0	ND	108	71.7-144			
trans-1,3-Dichloropropene	21.0	5.00	"	20.0	ND	105	65-115			
Trichloroethene	21.3	5.00	"	20.0	ND	106	70-130			
Vinyl acetate	4.15	5.00	"		ND		55-132			
Vinyl chloride	17.1	5.00	"	20.0	ND	85.5	65-127			
Surrogate: Dibromofluoromethane	*51.3*		"	*50.0*		*103*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*50.9*		"	*50.0*		*102*	*70-130*			
Surrogate: Toluene-d8	*49.0*		"	*50.0*		*98.0*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.9*		"	*50.0*		*102*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
Blank (2E04015-BLK1)						***Prepared & Analyzed: 05/02/12***				
1,1,1-Trichloroethane	ND	5.00	ug/kg							
1,1,2,2-Tetrachloroethane	ND	5.00	"							
1,1,2-Trichloroethane	ND	5.00	"							
1,1-Dichloroethane	ND	5.00	"							
1,1-Dichloroethene	ND	5.00	"							
1,2-Dichloroethane	ND	5.00	"							
1,2-Dichloropropane	ND	5.00	"							
1,4-Dioxane	ND	200	"							
2-Butanone	ND	10.0	"							
2-Hexanone	ND	10.0	"							
4-Methyl-2-pentanone	ND	10.0	"							
Acetone	ND	50.0	"							
Benzene	ND	5.00	"							
Bromodichloromethane	ND	5.00	"							
Bromoform	ND	5.00	"							
Bromomethane	ND	5.00	"							
Carbon disulfide	ND	5.00	"							
Carbon Tetrachloride	ND	5.00	"							
Chlorobenzene	ND	5.00	"							
Chloroethane	ND	5.00	"							
Chloroform	ND	5.00	"							
Chloromethane	ND	5.00	"							
cis-1,2-Dichloroethene	ND	5.00	"							
cis-1,3-Dichloropropene	ND	5.00	"							
Dibromochloromethane	ND	5.00	"							
Ethylbenzene	ND	5.00	"							
m,p-Xylene	ND	5.00	"							
Methylene chloride	ND	5.00	"							
o-Xylene	ND	5.00	"							
Styrene	ND	5.00	"							
Tetrachloroethene	ND	5.00	"							
Toluene	ND	5.00	"							
trans-1,2-Dichloroethene	ND	5.00	"							
trans-1,3-Dichloropropene	ND	5.00	"							
Trichloroethene	ND	5.00	"							
Vinyl acetate	ND	10.0	"							
Vinyl chloride	ND	5.00	"							
Surrogate: Dibromofluoromethane	*51.2*		"	*50.0*		*102*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*51.8*		"	*50.0*		*104*	*70-130*			
Surrogate: Toluene-d8	*50.0*		"	*50.0*		*99.9*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.7*		"	*50.0*		*101*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
Blank (2E04015-BLK2)						***Prepared & Analyzed: 05/03/12***				
1,1,1-Trichloroethane	ND	5.00	ug/kg							
1,1,2,2-Tetrachloroethane	ND	5.00	"							
1,1,2-Trichloroethane	ND	5.00	"							
1,1-Dichloroethane	ND	5.00	"							
1,1-Dichloroethene	ND	5.00	"							
1,2-Dichloroethane	ND	5.00	"							
1,2-Dichloropropane	ND	5.00	"							
2-Butanone	ND	10.0	"							
2-Hexanone	ND	10.0	"							
4-Methyl-2-pentanone	ND	10.0	"							
Acetone	ND	50.0	"							
Benzene	ND	5.00	"							
Bromodichloromethane	ND	5.00	"							
Bromoform	ND	5.00	"							
Bromomethane	ND	5.00	"							
Carbon disulfide	ND	5.00	"							
Carbon Tetrachloride	ND	5.00	"							
Chlorobenzene	ND	5.00	"							
Chloroethane	ND	5.00	"							
Chloroform	ND	5.00	"							
Chloromethane	ND	5.00	"							
cis-1,2-Dichloroethene	ND	5.00	"							
cis-1,3-Dichloropropene	ND	5.00	"							
Dibromochloromethane	ND	5.00	"							
Ethylbenzene	ND	5.00	"							
m,p-Xylene	ND	5.00	"							
Methylene chloride	ND	5.00	"							
o-Xylene	ND	5.00	"							
Styrene	ND	5.00	"							
Tetrachloroethene	ND	5.00	"							
Toluene	ND	5.00	"							
trans-1,2-Dichloroethene	ND	5.00	"							
trans-1,3-Dichloropropene	ND	5.00	"							
Trichloroethene	ND	5.00	"							
Vinyl acetate	ND	10.0	"							
Vinyl chloride	ND	5.00	"							
Surrogate: Dibromofluoromethane	*50.0*		"	*50.0*		*100*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*50.3*		"	*50.0*		*101*	*70-130*			
Surrogate: Toluene-d8	*48.2*		"	*50.0*		*96.3*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*49.1*		"	*50.0*		*98.1*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
LCS (2E04015-BS1)						***Prepared & Analyzed: 05/02/12***				
1,1,1-Trichloroethane	20.1	5.00	ug/kg	20.0		101	70-130			
1,1,2,2-Tetrachloroethane	21.5	5.00	"	20.0		107	70-130			
1,1,2-Trichloroethane	20.0	5.00	"	20.0		100	70-130			
1,1-Dichloroethane	20.8	5.00	"	20.0		104	74.6-139			
1,1-Dichloroethene	19.7	5.00	"	20.0		98.3	72.8-138			
1,2-Dichloroethane	20.9	5.00	"	20.0		104	70-130			
1,2-Dichloropropane	19.1	5.00	"	20.0		95.6	70-130			
2-Butanone	21.6	10.0	"	20.0		108	58.5-136			
2-Hexanone	21.5	10.0	"	20.0		107	55.1-136			
4-Methyl-2-pentanone	19.7	10.0	"	20.0		98.3	50.2-131			
Acetone	25.1	50.0	"	20.0		125	27.7-177			
Benzene	19.6	5.00	"	20.0		98.1	70-130			
Bromodichloromethane	20.0	5.00	"	20.0		100	70-130			
Bromoform	20.5	5.00	"	20.0		102	70-130			
Bromomethane	18.7	5.00	"	20.0		93.6	58.1-148			
Carbon disulfide	20.3	5.00	"	20.0		102	65.3-138			
Carbon Tetrachloride	19.3	5.00	"	20.0		96.3	70-130			
Chlorobenzene	18.8	5.00	"	20.0		93.8	70-130			
Chloroethane	18.7	5.00	"	20.0		93.4	53.6-151			
Chloroform	20.5	5.00	"	20.0		103	70-130			
Chloromethane	18.8	5.00	"	20.0		93.8	58.8-115			
cis-1,2-Dichloroethene	20.4	5.00	"	20.0		102	70-130			
cis-1,3-Dichloropropene	18.0	5.00	"	20.0		90.1	70-130			
Dibromochloromethane	20.5	5.00	"	20.0		102	70-130			
Ethylbenzene	18.6	5.00	"	20.0		93.1	70-130			
m,p-Xylene	36.5	5.00	"	40.0		91.3	70-130			
Methylene chloride	19.6	5.00	"	20.0		98.2	71.6-142			
o-Xylene	18.4	5.00	"	20.0		91.8	70-130			
Styrene	18.1	5.00	"	20.0		90.5	70-130			
Tetrachloroethene	17.4	5.00	"	20.0		87.2	70-130			
Toluene	18.2	5.00	"	20.0		90.9	70-130			
trans-1,2-Dichloroethene	19.9	5.00	"	20.0		99.4	73.6-138			
trans-1,3-Dichloropropene	18.1	5.00	"	20.0		90.3	70-130			
Trichloroethene	18.7	5.00	"	20.0		93.7	70-130			
Vinyl acetate	14.2	10.0	"	20.0		70.9	66.6-129			
Vinyl chloride	18.9	5.00	"	20.0		94.4	70-130			
Surrogate: Dibromofluoromethane	*52.2*		"	*50.0*		*104*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*51.6*		"	*50.0*		*103*	*70-130*			
Surrogate: Toluene-d8	*49.7*		"	*50.0*		*99.4*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*52.4*		"	*50.0*		*105*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
LCS (2E04015-BS2)						***Prepared & Analyzed: 05/02/12***				
1,4-Dioxane	569	200	ug/kg	500		114	5-215			
Surrogate: Dibromofluoromethane	*52.6*		"	*50.0*		*105*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*47.0*		"	*50.0*		*94.0*	*70-130*			
Surrogate: Toluene-d8	*47.3*		"	*50.0*		*94.7*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*49.1*		"	*50.0*		*98.2*	*70-130*			
LCS (2E04015-BS3)						***Prepared & Analyzed: 05/03/12***				
1,1,1-Trichloroethane	19.4	5.00	ug/kg	20.0		97.0	70-130			
1,1,2,2-Tetrachloroethane	22.1	5.00	"	20.0		110	70-130			
1,1,2-Trichloroethane	19.2	5.00	"	20.0		96.0	70-130			
1,1-Dichloroethane	21.4	5.00	"	20.0		107	74.6-139			
1,1-Dichloroethene	20.4	5.00	"	20.0		102	72.8-138			
1,2-Dichloroethane	20.8	5.00	"	20.0		104	70-130			
1,2-Dichloropropane	19.0	5.00	"	20.0		95.0	70-130			
2-Butanone	21.7	10.0	"	20.0		108	58.5-136			
2-Hexanone	21.9	10.0	"	20.0		109	55.1-136			
4-Methyl-2-pentanone	20.1	10.0	"	20.0		101	50.2-131			
Acetone	25.0	50.0	"	20.0		125	27.7-177			
Benzene	20.4	5.00	"	20.0		102	70-130			
Bromodichloromethane	19.5	5.00	"	20.0		97.7	70-130			
Bromoform	19.2	5.00	"	20.0		95.8	70-130			
Bromomethane	19.0	5.00	"	20.0		95.0	58.1-148			
Carbon disulfide	22.4	5.00	"	20.0		112	65.3-138			
Carbon Tetrachloride	18.4	5.00	"	20.0		92.2	70-130			
Chlorobenzene	19.4	5.00	"	20.0		96.8	70-130			
Chloroethane	18.4	5.00	"	20.0		92.2	53.6-151			
Chloroform	20.6	5.00	"	20.0		103	70-130			
Chloromethane	16.9	5.00	"	20.0		84.7	58.8-115			
cis-1,2-Dichloroethene	20.3	5.00	"	20.0		101	70-130			
cis-1,3-Dichloropropene	16.9	5.00	"	20.0		84.6	70-130			
Dibromochloromethane	20.1	5.00	"	20.0		101	70-130			
Ethylbenzene	19.6	5.00	"	20.0		98.0	70-130			
m,p-Xylene	38.3	5.00	"	40.0		95.8	70-130			
Methylene chloride	20.5	5.00	"	20.0		102	71.6-142			
o-Xylene	19.8	5.00	"	20.0		98.8	70-130			
Styrene	19.2	5.00	"	20.0		95.8	70-130			
Tetrachloroethene	18.7	5.00	"	20.0		93.7	70-130			
Toluene	18.6	5.00	"	20.0		93.0	70-130			
trans-1,2-Dichloroethene	21.3	5.00	"	20.0		107	73.6-138			
trans-1,3-Dichloropropene	16.4	5.00	"	20.0		82.1	70-130			
Trichloroethene	19.5	5.00	"	20.0		97.5	70-130			
Vinyl acetate	19.7	10.0	"	20.0		98.4	66.6-129			
Vinyl chloride	17.6	5.00	"	20.0		88.1	70-130			
Surrogate: Dibromofluoromethane	*52.2*		"	*50.0*		*104*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
LCS (2E04015-BS3)						***Prepared & Analyzed: 05/03/12***				
Surrogate: 1,2-Dichloroethane-d4	*50.5*		*ug/kg*	*50.0*		*101*	*70-130*			
Surrogate: Toluene-d8	*48.3*		*"*	*50.0*		*96.5*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.9*		*"*	*50.0*		*102*	*70-130*			
LCS Dup (2E04015-BSD1)						***Prepared & Analyzed: 05/02/12***				
1,1,1-Trichloroethane	19.7	5.00	ug/kg	20.0		98.4	70-130	2.36	35	
1,1,2,2-Tetrachloroethane	20.8	5.00	"	20.0		104	70-130	3.26	35	
1,1,2-Trichloroethane	19.2	5.00	"	20.0		96.1	70-130	3.93	35	
1,1-Dichloroethane	20.4	5.00	"	20.0		102	74.6-139	1.70	35	
1,1-Dichloroethene	19.1	5.00	"	20.0		95.4	72.8-138	3.05	35	
1,2-Dichloroethane	19.9	5.00	"	20.0		99.4	70-130	4.96	35	
1,2-Dichloropropane	18.9	5.00	"	20.0		94.5	70-130	1.10	35	
2-Butanone	20.8	10.0	"	20.0		104	58.5-136	3.68	35	
2-Hexanone	21.4	10.0	"	20.0		107	55.1-136	0.280	35	
4-Methyl-2-pentanone	20.6	10.0	"	20.0		103	50.2-131	4.67	35	
Acetone	23.1	50.0	"	20.0		116	27.7-177	7.93	35	
Benzene	19.0	5.00	"	20.0		94.8	70-130	3.42	35	
Bromodichloromethane	20.1	5.00	"	20.0		100	70-130	0.0997	35	
Bromoform	20.1	5.00	"	20.0		100	70-130	1.92	35	
Bromomethane	18.5	5.00	"	20.0		92.5	58.1-148	1.18	35	
Carbon disulfide	19.7	5.00	"	20.0		98.4	65.3-138	3.30	35	
Carbon Tetrachloride	18.9	5.00	"	20.0		94.7	70-130	1.62	35	
Chlorobenzene	17.7	5.00	"	20.0		88.5	70-130	5.81	35	
Chloroethane	18.3	5.00	"	20.0		91.6	53.6-151	2.00	35	
Chloroform	19.3	5.00	"	20.0		96.7	70-130	5.87	35	
Chloromethane	17.8	5.00	"	20.0		88.9	58.8-115	5.36	35	
cis-1,2-Dichloroethene	19.7	5.00	"	20.0		98.3	70-130	3.45	35	
cis-1,3-Dichloropropene	17.8	5.00	"	20.0		89.0	70-130	1.28	35	
Dibromochloromethane	20.4	5.00	"	20.0		102	70-130	0.147	35	
Ethylbenzene	17.7	5.00	"	20.0		88.4	70-130	5.18	35	
m,p-Xylene	34.7	5.00	"	40.0		86.8	70-130	5.08	35	
Methylene chloride	19.6	5.00	"	20.0		97.8	71.6-142	0.459	35	
o-Xylene	17.9	5.00	"	20.0		89.4	70-130	2.65	35	
Styrene	17.4	5.00	"	20.0		86.9	70-130	4.06	35	
Tetrachloroethene	17.2	5.00	"	20.0		85.8	70-130	1.68	35	
Toluene	17.6	5.00	"	20.0		88.0	70-130	3.30	35	
trans-1,2-Dichloroethene	19.6	5.00	"	20.0		98.1	73.6-138	1.32	35	
trans-1,3-Dichloropropene	18.2	5.00	"	20.0		90.9	70-130	0.718	35	
Trichloroethene	18.1	5.00	"	20.0		90.6	70-130	3.31	35	
Vinyl acetate	13.2	10.0	"	20.0		66.2	66.6-129	6.86	35	L2
Vinyl chloride	18.3	5.00	"	20.0		91.4	70-130	3.28	35	
Surrogate: Dibromofluoromethane	*52.6*		*"*	*50.0*		*105*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*49.9*		*"*	*50.0*		*99.8*	*70-130*			
Surrogate: Toluene-d8	*49.1*		*"*	*50.0*		*98.2*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
LCS Dup (2E04015-BSD1)						***Prepared & Analyzed: 05/02/12***				
Surrogate: 4-Bromofluorobenzene	*51.1*		*ug/kg*	*50.0*		*102*	*70-130*			
LCS Dup (2E04015-BSD2)						***Prepared & Analyzed: 05/02/12***				
1,4-Dioxane	469	200	ug/kg	500		93.9	5-215	19.3	35	
Surrogate: Dibromofluoromethane	*55.2*		*"*	*50.0*		*110*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*54.1*		*"*	*50.0*		*108*	*70-130*			
Surrogate: Toluene-d8	*47.4*		*"*	*50.0*		*94.8*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.3*		*"*	*50.0*		*101*	*70-130*			
LCS Dup (2E04015-BSD3)						***Prepared & Analyzed: 05/03/12***				
1,1,1-Trichloroethane	17.5	5.00	ug/kg	20.0		87.5	70-130	10.3	35	
1,1,2,2-Tetrachloroethane	21.1	5.00	"	20.0		106	70-130	4.40	35	
1,1,2-Trichloroethane	19.8	5.00	"	20.0		99.1	70-130	3.13	35	
1,1-Dichloroethane	19.0	5.00	"	20.0		95.2	74.6-139	11.6	35	
1,1-Dichloroethene	17.8	5.00	"	20.0		88.8	72.8-138	13.8	35	
1,2-Dichloroethane	20.3	5.00	"	20.0		102	70-130	2.19	35	
1,2-Dichloropropane	18.8	5.00	"	20.0		94.0	70-130	1.06	35	
2-Butanone	23.1	10.0	"	20.0		116	58.5-136	6.57	35	
2-Hexanone	25.1	10.0	"	20.0		125	55.1-136	13.6	35	
4-Methyl-2-pentanone	20.7	10.0	"	20.0		104	50.2-131	3.09	35	
Acetone	26.1	50.0	"	20.0		130	27.7-177	4.23	35	
Benzene	19.2	5.00	"	20.0		95.8	70-130	6.37	35	
Bromodichloromethane	19.6	5.00	"	20.0		97.9	70-130	0.153	35	
Bromoform	20.9	5.00	"	20.0		105	70-130	8.79	35	
Bromomethane	18.5	5.00	"	20.0		92.7	58.1-148	2.50	35	
Carbon disulfide	18.5	5.00	"	20.0		92.5	65.3-138	19.2	35	
Carbon Tetrachloride	16.6	5.00	"	20.0		83.1	70-130	10.3	35	
Chlorobenzene	19.0	5.00	"	20.0		94.9	70-130	1.93	35	
Chloroethane	17.1	5.00	"	20.0		85.3	53.6-151	7.78	35	
Chloroform	18.4	5.00	"	20.0		91.9	70-130	11.2	35	
Chloromethane	15.5	5.00	"	20.0		77.6	58.8-115	8.69	35	
cis-1,2-Dichloroethene	18.1	5.00	"	20.0		90.4	70-130	11.4	35	
cis-1,3-Dichloropropene	18.3	5.00	"	20.0		91.7	70-130	8.05	35	
Dibromochloromethane	20.7	5.00	"	20.0		104	70-130	2.99	35	
Ethylbenzene	18.5	5.00	"	20.0		92.7	70-130	5.51	35	
m,p-Xylene	36.4	5.00	"	40.0		91.1	70-130	5.08	35	
Methylene chloride	17.6	5.00	"	20.0		87.8	71.6-142	15.2	35	
o-Xylene	18.1	5.00	"	20.0		90.4	70-130	8.83	35	
Styrene	19.2	5.00	"	20.0		96.2	70-130	0.469	35	
Tetrachloroethene	17.6	5.00	"	20.0		87.8	70-130	6.45	35	
Toluene	18.6	5.00	"	20.0		92.9	70-130	0.161	35	
trans-1,2-Dichloroethene	18.2	5.00	"	20.0		91.2	73.6-138	15.6	35	
trans-1,3-Dichloropropene	18.0	5.00	"	20.0		90.0	70-130	9.18	35	
Trichloroethene	19.0	5.00	"	20.0		95.2	70-130	2.44	35	
Vinyl acetate	19.0	10.0	"	20.0		95.1	66.6-129	3.36	35	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
LCS Dup (2E04015-BSD3)						***Prepared & Analyzed: 05/03/12***				
Vinyl chloride	14.9	5.00	ug/kg	20.0		74.6	70-130	16.6	35	
Surrogate: Dibromofluoromethane	*49.0*		"	*50.0*		*98.0*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*52.6*		"	*50.0*		*105*	*70-130*			
Surrogate: Toluene-d8	*48.4*		"	*50.0*		*96.8*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*52.5*		"	*50.0*		*105*	*70-130*			
Matrix Spike (2E04015-MS1)	**Source: 1204322-04**					***Prepared & Analyzed: 05/02/12***				
1,1,1-Trichloroethane	19.4	4.85	ug/kg	19.4	ND	99.9	70-130			
1,1,2,2-Tetrachloroethane	18.3	4.85	"	19.4	ND	94.5	71.9-140			
1,1,2-Trichloroethane	16.5	4.85	"	19.4	ND	84.9	70-130			
1,1-Dichloroethane	19.9	4.85	"	19.4	ND	103	78.8-143			
1,1-Dichloroethene	20.3	4.85	"	19.4	ND	104	72.8-143			
1,2-Dichloroethane	17.9	4.85	"	19.4	ND	92.1	70-130			
1,2-Dichloropropane	16.2	4.85	"	19.4	ND	83.3	70-130			
2-Butanone	18.0	9.71	"	19.4	ND	92.6	56.9-131			
2-Hexanone	17.5	9.71	"	19.4	ND	90.2	54.7-128			
4-Methyl-2-pentanone	14.3	9.71	"	19.4	ND	73.7	45.7-133			
Acetone	20.2	48.5	"	19.4	ND	104	48.4-154			
Benzene	17.7	4.85	"	19.4	ND	91.0	70-130			
Bromodichloromethane	16.5	4.85	"	19.4	ND	85.2	70-130			
Bromoform	16.2	4.85	"	19.4	ND	83.5	60.7-127			
Bromomethane	19.2	4.85	"	19.4	ND	98.8	67.1-144			
Carbon disulfide	19.3	4.85	"	19.4	ND	99.3	46.2-151			
Carbon Tetrachloride	17.9	4.85	"	19.4	ND	92.1	69.8-136			
Chlorobenzene	17.0	4.85	"	19.4	ND	87.3	70-130			
Chloroethane	20.0	4.85	"	19.4	ND	103	54.8-152			
Chloroform	18.6	4.85	"	19.4	ND	95.7	70-130			
Chloromethane	17.0	4.85	"	19.4	ND	87.8	57.5-121			
cis-1,2-Dichloroethene	18.1	4.85	"	19.4	ND	93.3	70-130			
cis-1,3-Dichloropropene	13.9	4.85	"	19.4	ND	71.6	70-130			
Dibromochloromethane	16.1	4.85	"	19.4	ND	82.9	67.2-125			
Ethylbenzene	17.9	4.85	"	19.4	ND	92.3	70-130			
m,p-Xylene	35.4	4.85	"	38.8	ND	91.1	63.9-131			
Methylene chloride	18.8	4.85	"	19.4	ND	96.9	74.2-144			
o-Xylene	17.7	4.85	"	19.4	ND	91.3	60.7-129			
Styrene	16.6	4.85	"	19.4	ND	85.4	10.5-158			
Tetrachloroethene	16.8	4.85	"	19.4	ND	86.5	70-130			
Toluene	15.9	4.85	"	19.4	ND	82.0	70-130			
trans-1,2-Dichloroethene	20.2	4.85	"	19.4	ND	104	71.7-144			
trans-1,3-Dichloropropene	12.1	4.85	"	19.4	ND	62.4	65-115			M2
Trichloroethene	17.1	4.85	"	19.4	ND	88.1	70-130			
Vinyl acetate	14.4	9.71	"	19.4	ND	74.3	55-132			
Vinyl chloride	18.7	4.85	"	19.4	ND	96.1	65-127			
Surrogate: Dibromofluoromethane	*52.9*		"	*50.0*		*106*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
Matrix Spike (2E04015-MS1)	**Source: 1204322-04**						***Prepared & Analyzed: 05/02/12***			
Surrogate: 1,2-Dichloroethane-d4	*51.8*		*ug/kg*	*50.0*		*104*	*70-130*			
Surrogate: Toluene-d8	*50.2*		*"*	*50.0*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.3*		*"*	*50.0*		*101*	*70-130*			
Matrix Spike (2E04015-MS2)	**Source: 1204322-02**						***Prepared & Analyzed: 05/02/12***			
1,4-Dioxane	851	189	ug/kg	473	ND	180	0-0			
Surrogate: Dibromofluoromethane	*55.5*		*"*	*50.0*		*111*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*49.0*		*"*	*50.0*		*98.1*	*70-130*			
Surrogate: Toluene-d8	*48.0*		*"*	*50.0*		*95.9*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*49.6*		*"*	*50.0*		*99.1*	*70-130*			
Matrix Spike (2E04015-MS3)	**Source: 1204405-02**						***Prepared: 05/02/12 Analyzed: 05/03/12***			
1,1,1-Trichloroethane	20.0	4.93	ug/kg	19.7	ND	102	70-130			
1,1,2,2-Tetrachloroethane	18.2	4.93	"	19.7	ND	92.5	71.9-140			
1,1,2-Trichloroethane	15.7	4.93	"	19.7	ND	79.7	70-130			
1,1-Dichloroethane	22.0	4.93	"	19.7	ND	111	78.8-143			
1,1-Dichloroethene	20.8	4.93	"	19.7	ND	106	72.8-143			
1,2-Dichloroethane	19.1	4.93	"	19.7	ND	96.7	70-130			
1,2-Dichloropropane	16.9	4.93	"	19.7	ND	85.7	70-130			
2-Butanone	19.6	9.86	"	19.7	ND	99.5	56.9-131			
2-Hexanone	16.7	9.86	"	19.7	ND	84.9	54.7-128			
4-Methyl-2-pentanone	14.4	9.86	"	19.7	ND	72.8	45.7-133			
Acetone	37.0	49.3	"	19.7	11.7	128	48.4-154			
Benzene	18.7	4.93	"	19.7	ND	94.6	70-130			
Bromodichloromethane	18.4	4.93	"	19.7	ND	93.3	70-130			
Bromoform	16.6	4.93	"	19.7	ND	84.3	60.7-127			
Bromomethane	10.0	4.93	"	19.7	ND	50.9	67.1-144			M2
Carbon disulfide	30.0	4.93	"	19.7	3.54	134	46.2-151			
Carbon Tetrachloride	18.1	4.93	"	19.7	ND	91.8	69.8-136			
Chlorobenzene	16.5	4.93	"	19.7	ND	83.8	70-130			
Chloroethane	22.6	4.93	"	19.7	ND	115	54.8-152			
Chloroform	20.3	4.93	"	19.7	ND	103	70-130			
Chloromethane	8.78	4.93	"	19.7	ND	44.5	57.5-121			M2
cis-1,2-Dichloroethene	19.5	4.93	"	19.7	ND	99.0	70-130			
cis-1,3-Dichloropropene	13.6	4.93	"	19.7	ND	69.1	70-130			M2
Dibromochloromethane	17.1	4.93	"	19.7	ND	86.9	67.2-125			
Ethylbenzene	17.2	4.93	"	19.7	ND	87.4	70-130			
m,p-Xylene	34.1	4.93	"	39.4	ND	86.5	63.9-131			
Methylene chloride	21.5	4.93	"	19.7	ND	109	74.2-144			
o-Xylene	17.8	4.93	"	19.7	ND	90.4	60.7-129			
Styrene	9.29	4.93	"	19.7	ND	47.1	10.5-158			
Tetrachloroethene	16.0	4.93	"	19.7	ND	80.9	70-130			
Toluene	15.8	4.93	"	19.7	ND	80.2	70-130			
trans-1,2-Dichloroethene	21.6	4.93	"	19.7	ND	110	71.7-144			
trans-1,3-Dichloropropene	11.6	4.93	"	19.7	ND	59.0	65-115			M2

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
Matrix Spike (2E04015-MS3)	**Source: 1204405-02**					***Prepared: 05/02/12 Analyzed: 05/03/12***				
Trichloroethene	18.3	4.93	ug/kg	19.7	ND	92.9	70-130			
Vinyl acetate	13.1	9.86	"	19.7	ND	66.2	55-132			
Vinyl chloride	14.4	4.93	"	19.7	ND	73.2	65-127			
Surrogate: Dibromofluoromethane	*56.5*		"	*50.0*		*113*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*49.1*		"	*50.0*		*98.2*	*70-130*			
Surrogate: Toluene-d8	*50.2*		"	*50.0*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*49.1*		"	*50.0*		*98.2*	*70-130*			
Matrix Spike Dup (2E04015-MSD3)	**Source: 1204405-02**					***Prepared: 05/02/12 Analyzed: 05/03/12***				
1,1,1-Trichloroethane	21.2	4.92	ug/kg	19.7	ND	108	70-130	5.58	40	
1,1,2,2-Tetrachloroethane	19.4	4.92	"	19.7	ND	98.8	71.9-140	6.34	40	
1,1,2-Trichloroethane	16.4	4.92	"	19.7	ND	83.5	70-130	4.34	40	
1,1-Dichloroethane	22.7	4.92	"	19.7	ND	116	78.8-143	3.46	40	
1,1-Dichloroethene	22.3	4.92	"	19.7	ND	113	72.8-143	6.88	40	
1,2-Dichloroethane	19.1	4.92	"	19.7	ND	97.2	70-130	0.267	40	
1,2-Dichloropropane	17.7	4.92	"	19.7	ND	89.9	70-130	4.64	40	
2-Butanone	19.3	9.84	"	19.7	ND	97.8	56.9-131	1.92	40	
2-Hexanone	18.3	9.84	"	19.7	ND	93.1	54.7-128	9.02	40	
4-Methyl-2-pentanone	18.0	9.84	"	19.7	ND	91.6	45.7-133	22.7	40	
Acetone	36.8	49.2	"	19.7	11.7	127	48.4-154	0.518	40	
Benzene	19.2	4.92	"	19.7	ND	97.3	70-130	2.56	40	
Bromodichloromethane	19.8	4.92	"	19.7	ND	101	70-130	7.33	40	
Bromoform	19.0	4.92	"	19.7	ND	96.4	60.7-127	13.2	40	
Bromomethane	10.3	4.92	"	19.7	ND	52.2	67.1-144	2.33	40	M2
Carbon disulfide	34.3	4.92	"	19.7	3.54	156	46.2-151	13.2	40	M1
Carbon Tetrachloride	19.4	4.92	"	19.7	ND	98.6	69.8-136	6.90	40	
Chlorobenzene	17.7	4.92	"	19.7	ND	89.7	70-130	6.60	40	
Chloroethane	22.9	4.92	"	19.7	ND	116	54.8-152	1.19	40	
Chloroform	20.3	4.92	"	19.7	ND	103	70-130	0.148	40	
Chloromethane	8.58	4.92	"	19.7	ND	43.6	57.5-121	2.24	40	M2
cis-1,2-Dichloroethene	20.3	4.92	"	19.7	ND	103	70-130	3.67	40	
cis-1,3-Dichloropropene	14.4	4.92	"	19.7	ND	73.0	70-130	5.29	40	
Dibromochloromethane	18.3	4.92	"	19.7	ND	93.1	67.2-125	6.80	40	
Ethylbenzene	19.0	4.92	"	19.7	ND	96.6	70-130	9.75	40	
m,p-Xylene	36.9	4.92	"	39.4	ND	93.8	63.9-131	7.96	40	
Methylene chloride	21.1	4.92	"	19.7	ND	107	74.2-144	1.77	40	
o-Xylene	18.7	4.92	"	19.7	ND	95.2	60.7-129	4.98	40	
Styrene	7.64	4.92	"	19.7	ND	38.8	10.5-158	19.5	40	
Tetrachloroethene	17.5	4.92	"	19.7	ND	88.7	70-130	9.00	40	
Toluene	16.6	4.92	"	19.7	ND	84.3	70-130	4.79	40	
trans-1,2-Dichloroethene	21.7	4.92	"	19.7	ND	110	71.7-144	0.484	40	
trans-1,3-Dichloropropene	12.8	4.92	"	19.7	ND	64.9	65-115	9.40	40	M2
Trichloroethene	18.1	4.92	"	19.7	ND	92.1	70-130	1.06	40	
Vinyl acetate	12.8	9.84	"	19.7	ND	64.9	55-132	2.26	40	
Vinyl chloride	14.3	4.92	"	19.7	ND	72.4	65-127	1.36	40	

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Environmental Management Services	Project: SVE Pilot Drilling	
PO Box 15369	Project Number: [none]	**Reported:**
Hattiesburg MS, 39404-5369	Project Manager: Chris Johnson	05/07/12 09:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
Matrix Spike Dup (2E04015-MSD3)	**Source: 1204405-02**						***Prepared: 05/02/12 Analyzed: 05/03/12***			
Surrogate: Dibromofluoromethane	*56.5*		*ug/kg*	*50.0*		*113*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*52.2*		*"*	*50.0*		*104*	*70-130*			
Surrogate: Toluene-d8	*51.0*		*"*	*50.0*		*102*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.8*		*"*	*50.0*		*102*	*70-130*			

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05/07/12 09:45

Certified Analyses Included in this Report

Analyte	Certification Code
EPA 8260B in Soil	
1,1,1,2-Tetrachloroethane	C01,C02
1,1,1-Trichloroethane	C01,C02
1,1,2,2-Tetrachloroethane	C01,C02
1,1,2-Trichloroethane	C01,C02
1,1,2-Trichlorotrifluoroethane	C01,C02
1,1-Dichloroethane	C01,C02
1,1-Dichloroethene	C01,C02
1,1-Dichloropropene	C01,C02
1,2,3-Trichlorobenzene	C01,C02
1,2,3-Trichloropropane	C01,C02
1,2,4- Trimethylbenzene	C01,C02
1,2,4-Trichlorobenzene	C01,C02
1,2-Dibromo-3-chloropropane	C01,C02
1,2-Dibromoethane (EDB)	C01,C02
1,2-Dichlorobenzene	C01,C02
1,2-Dichloroethane	C01,C02
1,2-Dichloropropane	C01,C02
1,3,5-Trimethylbenzene	C01,C02
1,3-Dichlorobenzene	C01,C02
1,3-Dichloropropane	C01,C02
1,4-Dichlorobenzene	C01,C02
1,4-Dioxane	C01,C02
2,2-Dichloropropane	C01,C02
2-Butanone	C01,C02
2-Chloroethylvinyl ether	C01,C02
2-Chlorotoluene	C01,C02
2-Hexanone	C01,C02
4-Chlorotoluene	C01,C02
4-Isopropyltoluene	C01,C02
4-Methyl-2-pentanone	C01,C02
Acetone	C01,C02
Acrolein	C01,C02
Acrylonitrile	C01,C02
Benzene	C01,C02
Bromobenzene	C01,C02
Bromochloromethane	C01,C02
Bromodichloromethane	C01,C02
Bromoform	C01,C02
Bromomethane	C01,C02
Carbon disulfide	C01,C02
Carbon Tetrachloride	C01,C02

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services	Project: SVE Pilot Drilling	
PO Box 15369	Project Number: [none]	**Reported:**
Hattiesburg MS, 39404-5369	Project Manager: Chris Johnson	05/07/12 09:45

Chlorobenzene	C01,C02
Chloroethane	C01,C02
Chloroform	C01,C02
Chloromethane	C01,C02
cis-1,2-Dichloroethene	C01,C02
cis-1,3-Dichloropropene	C01,C02
cis-1,4-Dichloro-2-butene	C01,C02
Dibromochloromethane	C01,C02
Dibromomethane	C01,C02
Dichlorodifluoromethane	C01,C02
Diethyl ether	C01,C02
Ethylbenzene	C01,C02
Hexachlorobutadiene	C01,C02
Hexane	C01,C02
Iodomethane	C01,C02
Isobutanol	C01,C02
Isopropylbenzene	C01,C02
m,p-Xylene	C01,C02
Methyl Acrylate	C01,C02
Methyl tert-Butyl Ether	C01,C02
Methylene chloride	C01,C02
Naphthalene	C01,C02
n-Butylbenzene	C01,C02
n-Propyl Benzene	C01,C02
o-Xylene	C01,C02
sec-Butyl Benzene	C01,C02
Styrene	C01,C02
t-Butyl Benzene	C01,C02
Tert-butyl alcohol	C01,C02
Tetrachloroethene	C01,C02
Tetrahydrofuran	C01,C02
Toluene	C01,C02
trans-1,2-Dichloroethene	C01,C02
trans-1,3-Dichloropropene	C01,C02
trans-1,4-Dichloro-2-butene	C01,C02
Trichloroethene	C01,C02
Trichlorofluoromethane	C01,C02
Vinyl acetate	C01,C02
Vinyl chloride	C01,C02

EPA 8260B in Water

1,1,1,2-Tetrachloroethane	C01,C02
1,1,1-Trichloroethane	C01,C02
1,1,2,2-Tetrachloroethane	C01,C02
1,1,2-Trichloroethane	C01,C02
1,1,2-Trichlorotrifluoroethane	C01,C02
1,1-Dichloroethane	C01,C02

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Environmental Management Services
PO Box 15369
Hattiesburg MS, 39404-5369

Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

1,1-Dichloroethene	C01,C02
1,1-Dichloropropene	C01,C02
1,2,3-Trichlorobenzene	C01,C02
1,2,3-Trichloropropane	C01,C02
1,2,4- Trimethylbenzene	C01,C02
1,2,4-Trichlorobenzene	C01,C02
1,2-Dibromo-3-chloropropane	C01,C02
1,2-Dibromoethane (EDB)	C01,C02
1,2-Dichlorobenzene	C01,C02
1,2-Dichloroethane	C01,C02
1,2-Dichloropropane	C01,C02
1,3,5-Trimethylbenzene	C01,C02
1,3-Dichlorobenzene	C01,C02
1,3-Dichloropropane	C01,C02
1,4-Dichlorobenzene	C01,C02
1,4-Dioxane	C01,C02
2,2-Dichloropropane	C01,C02
2-Butanone	C01,C02
2-Chloroethylvinyl ether	C01,C02
2-Chlorotoluene	C01,C02
2-Hexanone	C01,C02
2-Methyl-1,3 Dioxolane (MDO)	C01,C02
4-Chlorotoluene	C01,C02
4-Isopropyltoluene	C01,C02
4-Methyl-2-pentanone	C01,C02
Acetone	C01,C02
Acrolein	C01,C02
Acrylonitrile	C01,C02
Benzene	C01,C02
Bromobenzene	C01,C02
Bromochloromethane	C01,C02
Bromodichloromethane	C01,C02
Bromoform	C01,C02
Bromomethane	C01,C02
Carbon disulfide	C01,C02
Carbon Tetrachloride	C01,C02
Chlorobenzene	C01,C02
Chloroethane	C01,C02
Chloroform	C01,C02
Chloromethane	C01,C02
cis-1,2-Dichloroethene	C01,C02
cis-1,3-Dichloropropene	C01,C02
cis-1,4-Dichloro-2-butene	C01,C02
Dibromochloromethane	C01,C02
Dibromomethane	C01,C02
Dichlorodifluoromethane	C01,C02

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Environmental Management Services	Project: SVE Pilot Drilling	
PO Box 15369	Project Number: [none]	**Reported:**
Hattiesburg MS, 39404-5369	Project Manager: Chris Johnson	05/07/12 09:45

Diethyl ether	C01,C02
Ethylbenzene	C01,C02
Hexachlorobutadiene	C01,C02
Hexane	C01,C02
Iodomethane	C01,C02
Isobutanol	C01,C02
Isopropylbenzene	C01,C02
m,p-Xylene	C01,C02
Methyl Acrylate	C01,C02
Methyl tert-Butyl Ether	C01,C02
Methylene chloride	C01,C02
Naphthalene	C01,C02
n-Butylbenzene	C01,C02
n-Propyl Benzene	C01,C02
o-Xylene	C01,C02
sec-Butyl Benzene	C01,C02
Styrene	C01,C02
t-Butyl Benzene	C01,C02
Tert-butyl alcohol	C01,C02
Tetrachloroethene	C01,C02
Tetrahydrofuran	C01,C02
Toluene	C01,C02
trans-1,2-Dichloroethene	C01,C02
trans-1,3-Dichloropropene	C01,C02
trans-1,4-Dichloro-2-butene	C01,C02
Trichloroethene	C01,C02
Trichlorofluoromethane	C01,C02
Vinyl acetate	C01,C02
Vinyl chloride	C01,C02

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Environmental Management Services
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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:45

Laboratory Accreditations/Certifications

Code	Description	Number	Expires
C01	La Environmental Lab Accreditation Program	01960	06/30/2012
C02	National Environmental Lab Accreditation Program		06/30/2012
C03	Ms Dept of Health (Coliform)	MS00007	11/30/2012
C04	Ms Dept of Health (Drinking Water Certificate)	MS00021-2009	12/31/2012
C05	Ms DEQ Lead Firm Certification	PBF-00000028	10/18/2012
C06	MsDEQ Asbestos Inspector : C.D. Bingham	ABI-00001348	04/21/2012
C07	MsDEQ Air Monitor : C.D. Bingham	AM-011572	04/20/2012
C08	MsDEQ Asbestos Inspector: C. W. Meins	ABI-00001821	09/22/2012
C09	MsDEQ Air Monitor : C.W. Meins	AM-011189	04/20/2012
C12	MsDEQ Asbestos Inspector : H.P. Howell	ABI-00001345	04/21/2012
C13	MsDEQ Air Monitor: H.P. Howell	ABM-00001344	04/20/2012

Report Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the minimum reporting limit
NR	Not Reported
RPD	Relative Percent Difference
ICV	Initial Calibration Verfiication
CCV	Continuing Calibration Verification Standard
SSV	Secondary Source Verfication Standard
LCS	Lab Control Spike - Lab matrix prepared with known concentration of analyte/s of interest analyzed by method.
MS	Matrix Spike - Sample prepared with known concentration of analyte/s of interest analyzed by method.
MSD	Matrix Spike Duplicate - Duplicate sample prepared with known concentration of anlayte/s of interest analyzed by method.
MRL	Minimum Reporting Limit
%REC	Percentage Recovery of known concentration added to matrix
Batch	Group of samples prepared for analysis not to exceed 20 samples.
Matrix	Material containing analyte/s of interest
Surrogate	Analyte added to sample to determine extraction efficiency of method.

Environmental Management Services PO Box 15369 Hattiesburg MS, 39404-5369	Project: SVE Pilot Drilling Project Number: [none] Project Manager: Chris Johnson	Reported: 05/07/12 09:45

cooler # 391

Micro-Methods Lab, Inc.
6500 Sunplex Drive, Ocean Springs, MS 39564
Ph: 228-875-6420 • Fax: 228-875-6423
www.micromethodslab.com

Chain of Custody / Analysis Request Form

Print ALL Information. Put N/A in blanks not applicable

Field pH: Tech: ST Time: 0832
Field Temperature: temp blank
Iced: (Yes) No
Sample Receipt Temperature: 0.3°C #3

REPORT RESULTS TO:	SEND INVOICE TO:	TURNAROUND TIME
Company: EMS	Company: EMS PO#: KUHO-11006	Date Results needed by:
Name: Chris Johnson	Name: Bryan Sherman	Standard turnaround time is 10 working days ☑
Address P.O. Box 15369	Address Same	The following turnaround times require lab approval:
City Hattiesburg	City	☐ 7-10 days ☐ 72 Hrs ☐ 48 Hrs
State MS ZIP 39404	State ZIP	☐ 24 Hrs Approved by
TEL: 601-544-3674 FAX: 601-544-0501	TEL: FAX:	
Sampled by: (Signature) [signature] (Print) Ethan Allen	Project Name: KCC SVE Pilot	Date of Sample Shipment: 4/30/12

Failure to complete shaded areas will hinder processing of samples.

1205004

For Lab Use Only Sample Number	Station Location / Sample ID	DATE	TIME	Sampling COMP	Sampling GRAB	VOC 8260	1,4-Dioxane										# CONTAINERS
1.	SVE-OBS-SHAL-05	4/26/12	1300	X		X	X										5
2.	SVE-OBS-DEEP-05	4/27/12	1300	X		X	X										5
3.	TBV# 4011	4/28/12	1300		X	X											2
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

Released By Signature	Date & Time Released	Received By Signature	Date & Time Received	Please indicate reporting requirements:
[signature]	4/30/12	Fedex		☐ 1. Results Only (EPA Level I)
Printed Name Ethan Allen	17:00	Printed Name		☑ 2. Results & QC (EPA Level II)
Released By Signature Fedex	Date & Time Released 5/1/12	Received By Signature Sarah Tomek	Date & Time Received 5/1/12	☐ 3. Results, QC and Raw Data (EPA Level III)
Printed Name	0832	Printed Name Sarah Tomek	0832	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services	Project: SVE Pilot Drilling	
PO Box 15369	Project Number: [none]	**Reported:**
Hattiesburg MS, 39404-5369	Project Manager: Chris Johnson	05/07/12 09:45

	Issue Date: 7/18/11 Implementation Date: 7/18/11	**Micro-Methods Laboratory Log-In Checklist**	DCN: F207 Date Revised: 7-18-11 Revision: 4

Client EMS **WO** 1205006 **Shipped By** Fed-ex
Date/Time Received 5/1/12 0832 **Unpacked/Checked By** ST

Cooler ID	Ice Present Yes/No	Temperature	Thermometer ID	Custody Sealed Yes/No	Custody Seal Intact Yes/No
#391	YES	0.3°C	T#3	YES	YES

If not iced, were samples received within one hour of collection? Yes ___ No ___ N/A X
Temperature Blank Used Yes X No _____ If not, temperature taken from cooler ____ or bottle____
Multi Cooler shipment: ID of samples in coolers that exceed 6°C_____

Custody Seals on Bottles Present Yes ___ No X
Containers Intact Yes X No___
Proper Containers for Requested Analysis Yes X No___

Correct Preservation Used for All Samples Yes X No___
Adequate Sample for Analysis Requested Yes X No___

Volatile Vials Headspace Greater than 6mm in Diameter Yes ___ No X N/A ___

Chain of Custody Form Included Yes X No___
Chain of Custody Form Complete Yes X No___
Chain of Custody Form Properly Relinquished Yes X No___
Field Sheets/Special Instructions Included Yes ___No___ N/A X
Samples Missing on COC or From Cooler Yes ___No X
Sample Container Labels Match COC Yes X No___

Samples Received Within Holding Time Yes X No___
Dept. Manager Notified of Rush/Short Holding Times Yes ___No___N/A X

Does work order meet Micro Methods sample acceptance criteria Yes X No ___
Note: Samples that do not meet acceptance criteria must be documented in the Sample Rejection Log.

Client Contacted _____ **Contacted By** _____ **Date/Time**_____
Client Instructions: Cancel Work Order _____
Proceed with Work Order _____ **(Data will be qualified)**
Comments: _____

Controlled Document

LELAP Certification # 01960

6500 Sunplex Drive
Ocean Springs, MS 39564
228.875.6420 Phone
228.875.6423 Fax

May 07, 2012

Chris Johnson

Work Order # : 1204322

Purchase Order #: KUH0-11-006

Environmental Management Services
PO Box 15369
Hattiesburg, MS 39404-5369

RE: SVE Pilot Drilling

Enclosed are Micro-Methods Laboratory, Inc. results of analyses performed on samples received 04/23/12 13:50. If you have any questions concerning this report, please feel free to contact the office.

Sincerely,

Harry P. Howell

President
Micro-Methods Laboratory, Inc.

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services
PO Box 15369
Hattiesburg MS, 39404-5369

Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date/Time Sampled	Sampled by	Date/Time Received
SVE-EXT-Deep-6'	1204322-01	Soil	04/21/12 11:00	*Chris Johnson*	04/23/12 13:50
SVE-EXT-Deep-30'	1204322-02	Soil	04/21/12 11:30	*Chris Johnson*	04/23/12 13:50
SVE-OBS-Deep-01-6'	1204322-03	Soil	04/21/12 14:00	*Chris Johnson*	04/23/12 13:50
SVE-OBS-Deep-01-30'	1204322-04	Soil	04/21/12 14:50	*Chris Johnson*	04/23/12 13:50
SVE-OBS-Deep-02-6'	1204322-05	Soil	04/21/12 18:15	*Chris Johnson*	04/23/12 13:50
SVE-OBS-Deep-02-26'	1204322-06	Soil	04/21/12 19:00	*Chris Johnson*	04/23/12 13:50
SVE-OBS-Deep-02-66'	1204322-07	Soil	04/21/12 19:40	*Chris Johnson*	04/23/12 13:50
SVE-OBS-Deep-03-6'	1204322-08	Soil	04/22/12 10:00	*Chris Johnson*	04/23/12 13:50
SVE-OBS-Deep-03-66'	1204322-09	Soil	04/22/12 10:30	*Chris Johnson*	04/23/12 13:50
SVE-OBS-Deep-04-2'	1204322-10	Soil	04/22/12 11:30	*Chris Johnson*	04/23/12 13:50
SVE-OBS-Deep-04-54'	1204322-11	Soil	04/22/12 12:00	*Chris Johnson*	04/23/12 13:50
TBV 4050	1204322-12	Water	04/21/12 11:00	*Micro Methods*	04/23/12 13:50

Sample Receipt Conditions

Date/Time Received: 4/23/2012 1:50:00PM
Received by: Sarah E. Tomek
Date/Time Logged: 4/23/2012 3:01:00PM
Cooler ID: **Default Cooler**

Shipped by: Client Delivery
Submitted by: Chris Johnson
Logged by: Cindy Dupree
Receipt Temperature: 0.90 °C

Custody Seals	*No*	*Received on Ice*	*Yes*
Containers Intact	*Yes*	*No Ice, Short Trip*	*No*
COC/Labels Agree	*Yes*	*Obvious Contamination*	*No*
Labels Complete	*Yes*	*Rush to meet HT*	*No*
COC Complete	*Yes*		

MICRO-METHODS LABORATORY, INC.

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Environmental Management Services	Project: SVE Pilot Drilling	
PO Box 15369	Project Number: [none]	**Reported:**
Hattiesburg MS, 39404-5369	Project Manager: Chris Johnson	05/07/12 09:41

CASE NARRATIVE SUMMARY

All reported results are within Micro-Methods Laboratory, Inc.defined laboratory quality control objectives unless detailed in narrative summary or identified as qualifications. NOTE: All results listed on this report are calculated on a wet weight basis (as received by the laboratory) unless otherwise noted in the analysis qualification sections.

Summary Comments: *No Summary Comments*

Volatile Organic Compounds by GC/MS-EPA 8260B

Qualification:

CC-01 CCV above acceptance limits. Results reported from this calibration were below the reporting limits.

1,4-Dioxane, Acetone, Chloromethane

1204322-12[TBV 4050]

CC-02 ICV exceeds the acceptance limit. Results reported from calibration were below the reporting limits.

Carbon disulfide

1204322-01[SVE-EXT-Deep-6'], 1204322-02[SVE-EXT-Deep-30'], 1204322-03[SVE-OBS-Deep-01-6'], 1204322-04[SVE-OBS-Deep-01-30'], 1204322-05[SVE-OBS-Deep-02-6'], 1204322-06[SVE-OBS-Deep-02-26'], 1204322-07[SVE-OBS-Deep-02-66'], 1204322-08[SVE-OBS-Deep-03-6'], 1204322-09[SVE-OBS-Deep-03-66'], 1204322-10[SVE-OBS-Deep-04-2'], 1204322-11[SVE-OBS-Deep-04-54']

L2 LCS and/or LCSD Recovery below acceptance limit.

Vinyl acetate

2E04015-BSD1

M1 MS/MSD Recovery limit exceeded.

Carbon disulfide

2E04015-MSD3

M2 MS/MSD Recovery below acceptable limit.

Bromomethane, Chloromethane, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene

2D30006-MS1, 2E04015-MS3, 2E04015-MSD3, 2E04015-MS1

Z-01 Analyte spiked at a concentration below its method detection limit. Recovery of the analyte is therefore outside of established control limits.

1,4-Dioxane

2D30006-BS1, 2D30006-BSD1, 2D30006-MS1

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Environmental Management Services
PO Box 15369
Hattiesburg MS, 39404-5369

Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-EXT-Deep-6'

1204322-01 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	**42.3**	4.35	ug/kg	1	2E04015	KRL	04/21/12 11:00	05/02/12 18:00	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	4.35	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	4.35	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	4.35	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	**12.3**	4.35	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	4.35	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	4.35	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	174	"	"	"	KRL	"	"	"	
2-Butanone	ND	8.70	"	"	"	KRL	"	"	"	
2-Hexanone	ND	8.70	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	8.70	"	"	"	KRL	"	"	"	
Acetone	ND	43.5	"	"	"	KRL	"	"	"	
Benzene	ND	4.35	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	4.35	"	"	"	KRL	"	"	"	
Bromoform	ND	4.35	"	"	"	KRL	"	"	"	
Bromomethane	ND	4.35	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	4.35	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	4.35	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	4.35	"	"	"	KRL	"	"	"	
Chloroethane	ND	4.35	"	"	"	KRL	"	"	"	
Chloroform	ND	4.35	"	"	"	KRL	"	"	"	
Chloromethane	ND	4.35	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	4.35	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	4.35	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	4.35	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	4.35	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	4.35	"	"	"	KRL	"	"	"	
Methylene chloride	ND	4.35	"	"	"	KRL	"	"	"	
o-Xylene	ND	4.35	"	"	"	KRL	"	"	"	
Styrene	ND	4.35	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	4.35	"	"	"	KRL	"	"	"	
Toluene	ND	4.35	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	4.35	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	4.35	"	"	"	KRL	"	"	"	
Trichloroethene	ND	4.35	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	8.70	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	4.35	"	"	"	KRL	"	"	"	

MICRO-METHODS LABORATORY, INC.

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Environmental Management Services
PO Box 15369
Hattiesburg MS, 39404-5369

Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-EXT-Deep-6'

1204322-01 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	55.0	*110 %*	*70-130*	*2E04015*	KRL	*04/21/12 11:00*	"	"	
1,2-Dichloroethane-d4	54.2	*108 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	48.9	*97.8 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	49.3	*98.7 %*	*70-130*	"	KRL	"	"	"	

MICRO-METHODS LABORATORY, INC.

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Environmental Management Services
PO Box 15369
Hattiesburg MS, 39404-5369

Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-EXT-Deep-30'

1204322-02 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	ND	4.82	ug/kg	1	2E04015	KRL	04/21/12 11:30	05/02/12 18:26	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	4.82	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	4.82	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	4.82	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	ND	4.82	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	4.82	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	4.82	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	193	"	"	"	KRL	"	"	"	
2-Butanone	ND	9.63	"	"	"	KRL	"	"	"	
2-Hexanone	ND	9.63	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	9.63	"	"	"	KRL	"	"	"	
Acetone	ND	48.2	"	"	"	KRL	"	"	"	
Benzene	ND	4.82	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	4.82	"	"	"	KRL	"	"	"	
Bromoform	ND	4.82	"	"	"	KRL	"	"	"	
Bromomethane	ND	4.82	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	4.82	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	4.82	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	4.82	"	"	"	KRL	"	"	"	
Chloroethane	ND	4.82	"	"	"	KRL	"	"	"	
Chloroform	ND	4.82	"	"	"	KRL	"	"	"	
Chloromethane	ND	4.82	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	4.82	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	4.82	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	4.82	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	4.82	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	4.82	"	"	"	KRL	"	"	"	
Methylene chloride	ND	4.82	"	"	"	KRL	"	"	"	
o-Xylene	ND	4.82	"	"	"	KRL	"	"	"	
Styrene	ND	4.82	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	4.82	"	"	"	KRL	"	"	"	
Toluene	ND	4.82	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	4.82	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	4.82	"	"	"	KRL	"	"	"	
Trichloroethene	ND	4.82	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	9.63	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	4.82	"	"	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-EXT-Deep-30'

1204322-02 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	54.0	*108 %*	*70-130*	*2E04015*	KRL	*04/21/12 11:30*	"	"	
1,2-Dichloroethane-d4	52.6	*105 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	50.8	*102 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	50.0	*100 %*	*70-130*	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-01-6'

1204322-03 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	**47.8**	4.22	ug/kg	1	2E04015	KRL	04/21/12 14:00	05/02/12 19:16	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	4.22	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	4.22	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	4.22	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	**31.3**	4.22	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	4.22	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	4.22	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	169	"	"	"	KRL	"	"	"	
2-Butanone	ND	8.45	"	"	"	KRL	"	"	"	
2-Hexanone	ND	8.45	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	8.45	"	"	"	KRL	"	"	"	
Acetone	ND	42.2	"	"	"	KRL	"	"	"	
Benzene	ND	4.22	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	4.22	"	"	"	KRL	"	"	"	
Bromoform	ND	4.22	"	"	"	KRL	"	"	"	
Bromomethane	ND	4.22	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	4.22	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	4.22	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	4.22	"	"	"	KRL	"	"	"	
Chloroethane	ND	4.22	"	"	"	KRL	"	"	"	
Chloroform	ND	4.22	"	"	"	KRL	"	"	"	
Chloromethane	ND	4.22	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	4.22	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	4.22	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	4.22	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	4.22	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	4.22	"	"	"	KRL	"	"	"	
Methylene chloride	ND	4.22	"	"	"	KRL	"	"	"	
o-Xylene	ND	4.22	"	"	"	KRL	"	"	"	
Styrene	ND	4.22	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	4.22	"	"	"	KRL	"	"	"	
Toluene	ND	4.22	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	4.22	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	4.22	"	"	"	KRL	"	"	"	
Trichloroethene	ND	4.22	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	8.45	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	4.22	"	"	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

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SVE-OBS-Deep-01-6'

1204322-03 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	56.9	*114 %*	*70-130*	*2E04015*	KRL	*04/21/12 14:00*	"	"	
1,2-Dichloroethane-d4	53.6	*107 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	50.0	*99.9 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	48.6	*97.3 %*	*70-130*	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

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05/07/12 09:41

SVE-OBS-Deep-01-30'

1204322-04 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	ND	4.36	ug/kg	1	2E04015	KRL	04/21/12 14:50	05/02/12 19:42	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	4.36	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	4.36	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	4.36	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	ND	4.36	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	4.36	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	4.36	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	174	"	"	"	KRL	"	"	"	
2-Butanone	ND	8.71	"	"	"	KRL	"	"	"	
2-Hexanone	ND	8.71	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	8.71	"	"	"	KRL	"	"	"	
Acetone	ND	43.6	"	"	"	KRL	"	"	"	
Benzene	ND	4.36	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	4.36	"	"	"	KRL	"	"	"	
Bromoform	ND	4.36	"	"	"	KRL	"	"	"	
Bromomethane	ND	4.36	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	4.36	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	4.36	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	4.36	"	"	"	KRL	"	"	"	
Chloroethane	ND	4.36	"	"	"	KRL	"	"	"	
Chloroform	ND	4.36	"	"	"	KRL	"	"	"	
Chloromethane	ND	4.36	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	4.36	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	4.36	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	4.36	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	4.36	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	4.36	"	"	"	KRL	"	"	"	
Methylene chloride	ND	4.36	"	"	"	KRL	"	"	"	
o-Xylene	ND	4.36	"	"	"	KRL	"	"	"	
Styrene	ND	4.36	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	4.36	"	"	"	KRL	"	"	"	
Toluene	ND	4.36	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	4.36	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	4.36	"	"	"	KRL	"	"	"	
Trichloroethene	ND	4.36	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	8.71	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	4.36	"	"	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

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05/07/12 09:41

SVE-OBS-Deep-01-30'

1204322-04 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	53.9	*108 %*	*70-130*	*2E04015*	KRL	*04/21/12 14:50*	"	"	
1,2-Dichloroethane-d4	51.7	*103 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	50.9	*102 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	48.9	*97.8 %*	*70-130*	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

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05/07/12 09:41

SVE-OBS-Deep-02-6'

1204322-05 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	**15.6**	4.40	ug/kg	1	2E04015	KRL	04/21/12 18:15	05/02/12 20:32	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	4.40	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	4.40	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	4.40	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	**13.6**	4.40	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	4.40	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	4.40	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	176	"	"	"	KRL	"	"	"	
2-Butanone	ND	8.80	"	"	"	KRL	"	"	"	
2-Hexanone	ND	8.80	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	8.80	"	"	"	KRL	"	"	"	
Acetone	ND	44.0	"	"	"	KRL	"	"	"	
Benzene	ND	4.40	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	4.40	"	"	"	KRL	"	"	"	
Bromoform	ND	4.40	"	"	"	KRL	"	"	"	
Bromomethane	ND	4.40	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	4.40	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	4.40	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	4.40	"	"	"	KRL	"	"	"	
Chloroethane	ND	4.40	"	"	"	KRL	"	"	"	
Chloroform	ND	4.40	"	"	"	KRL	"	"	"	
Chloromethane	ND	4.40	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	4.40	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	4.40	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	4.40	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	4.40	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	4.40	"	"	"	KRL	"	"	"	
Methylene chloride	ND	4.40	"	"	"	KRL	"	"	"	
o-Xylene	ND	4.40	"	"	"	KRL	"	"	"	
Styrene	ND	4.40	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	4.40	"	"	"	KRL	"	"	"	
Toluene	ND	4.40	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	4.40	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	4.40	"	"	"	KRL	"	"	"	
Trichloroethene	ND	4.40	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	8.80	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	4.40	"	"	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-02-6'

1204322-05 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	55.0	*110 %*	*70-130*	*2E04015*	KRL	*04/21/12 18:15*	"	"	
1,2-Dichloroethane-d4	52.1	*104 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	49.5	*99.0 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	48.4	*96.9 %*	*70-130*	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-02-26'

1204322-06 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	**16.6**	4.95	ug/kg	1	2E04015	KRL	04/21/12 19:00	05/02/12 20:58	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	4.95	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	4.95	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	4.95	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	ND	4.95	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	4.95	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	4.95	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	198	"	"	"	KRL	"	"	"	
2-Butanone	ND	9.90	"	"	"	KRL	"	"	"	
2-Hexanone	ND	9.90	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	9.90	"	"	"	KRL	"	"	"	
Acetone	ND	49.5	"	"	"	KRL	"	"	"	
Benzene	ND	4.95	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	4.95	"	"	"	KRL	"	"	"	
Bromoform	ND	4.95	"	"	"	KRL	"	"	"	
Bromomethane	ND	4.95	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	4.95	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	4.95	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	4.95	"	"	"	KRL	"	"	"	
Chloroethane	ND	4.95	"	"	"	KRL	"	"	"	
Chloroform	ND	4.95	"	"	"	KRL	"	"	"	
Chloromethane	ND	4.95	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	4.95	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	4.95	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	4.95	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	4.95	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	4.95	"	"	"	KRL	"	"	"	
Methylene chloride	ND	4.95	"	"	"	KRL	"	"	"	
o-Xylene	ND	4.95	"	"	"	KRL	"	"	"	
Styrene	ND	4.95	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	4.95	"	"	"	KRL	"	"	"	
Toluene	ND	4.95	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	4.95	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	4.95	"	"	"	KRL	"	"	"	
Trichloroethene	ND	4.95	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	9.90	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	4.95	"	"	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-02-26'

1204322-06 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	55.0	*110 %*	*70-130*	*2E04015*	KRL	*04/21/12 19:00*	"	"	
1,2-Dichloroethane-d4	50.1	*100 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	51.2	*102 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	49.4	*98.9 %*	*70-130*	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-02-66'

1204322-07 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	ND	4.76	ug/kg	1	2E04015	KRL	04/21/12 19:40	05/02/12 21:23	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	4.76	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	4.76	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	4.76	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	ND	4.76	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	4.76	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	4.76	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	190	"	"	"	KRL	"	"	"	
2-Butanone	ND	9.52	"	"	"	KRL	"	"	"	
2-Hexanone	ND	9.52	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	9.52	"	"	"	KRL	"	"	"	
Acetone	ND	47.6	"	"	"	KRL	"	"	"	
Benzene	ND	4.76	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	4.76	"	"	"	KRL	"	"	"	
Bromoform	ND	4.76	"	"	"	KRL	"	"	"	
Bromomethane	ND	4.76	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	4.76	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	4.76	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	4.76	"	"	"	KRL	"	"	"	
Chloroethane	ND	4.76	"	"	"	KRL	"	"	"	
Chloroform	ND	4.76	"	"	"	KRL	"	"	"	
Chloromethane	ND	4.76	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	4.76	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	4.76	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	4.76	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	4.76	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	4.76	"	"	"	KRL	"	"	"	
Methylene chloride	ND	4.76	"	"	"	KRL	"	"	"	
o-Xylene	ND	4.76	"	"	"	KRL	"	"	"	
Styrene	ND	4.76	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	4.76	"	"	"	KRL	"	"	"	
Toluene	ND	4.76	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	4.76	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	4.76	"	"	"	KRL	"	"	"	
Trichloroethene	ND	4.76	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	9.52	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	4.76	"	"	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-02-66'

1204322-07 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	53.2	*106 %*	*70-130*	*2E04015*	KRL	*04/21/12 19:40*	"	"	
1,2-Dichloroethane-d4	50.2	*100 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	49.7	*99.4 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	50.2	*100 %*	*70-130*	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-03-6'

1204322-08 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	**5.54**	4.29	ug/kg	1	2E04015	KRL	04/22/12 10:00	05/02/12 21:48	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	4.29	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	4.29	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	4.29	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	**7.60**	4.29	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	4.29	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	4.29	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	172	"	"	"	KRL	"	"	"	
2-Butanone	ND	8.58	"	"	"	KRL	"	"	"	
2-Hexanone	ND	8.58	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	8.58	"	"	"	KRL	"	"	"	
Acetone	ND	42.9	"	"	"	KRL	"	"	"	
Benzene	ND	4.29	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	4.29	"	"	"	KRL	"	"	"	
Bromoform	ND	4.29	"	"	"	KRL	"	"	"	
Bromomethane	ND	4.29	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	4.29	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	4.29	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	4.29	"	"	"	KRL	"	"	"	
Chloroethane	ND	4.29	"	"	"	KRL	"	"	"	
Chloroform	ND	4.29	"	"	"	KRL	"	"	"	
Chloromethane	ND	4.29	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	4.29	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	4.29	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	4.29	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	4.29	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	4.29	"	"	"	KRL	"	"	"	
Methylene chloride	ND	4.29	"	"	"	KRL	"	"	"	
o-Xylene	ND	4.29	"	"	"	KRL	"	"	"	
Styrene	ND	4.29	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	4.29	"	"	"	KRL	"	"	"	
Toluene	ND	4.29	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	4.29	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	4.29	"	"	"	KRL	"	"	"	
Trichloroethene	ND	4.29	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	8.58	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	4.29	"	"	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-03-6'

1204322-08 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	54.1	*108 %*	*70-130*	*2E04015*	KRL	*04/22/12 10:00*	"	"	
1,2-Dichloroethane-d4	49.0	*98.1 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	49.9	*99.8 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	48.2	*96.5 %*	*70-130*	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-03-66'

1204322-09 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	ND	4.29	ug/kg	1	2E04015	KRL	04/22/12 10:30	05/02/12 22:14	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	4.29	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	4.29	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	4.29	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	ND	4.29	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	4.29	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	4.29	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	172	"	"	"	KRL	"	"	"	
2-Butanone	ND	8.58	"	"	"	KRL	"	"	"	
2-Hexanone	ND	8.58	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	8.58	"	"	"	KRL	"	"	"	
Acetone	ND	42.9	"	"	"	KRL	"	"	"	
Benzene	ND	4.29	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	4.29	"	"	"	KRL	"	"	"	
Bromoform	ND	4.29	"	"	"	KRL	"	"	"	
Bromomethane	ND	4.29	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	4.29	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	4.29	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	4.29	"	"	"	KRL	"	"	"	
Chloroethane	ND	4.29	"	"	"	KRL	"	"	"	
Chloroform	ND	4.29	"	"	"	KRL	"	"	"	
Chloromethane	ND	4.29	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	4.29	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	4.29	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	4.29	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	4.29	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	4.29	"	"	"	KRL	"	"	"	
Methylene chloride	ND	4.29	"	"	"	KRL	"	"	"	
o-Xylene	ND	4.29	"	"	"	KRL	"	"	"	
Styrene	ND	4.29	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	4.29	"	"	"	KRL	"	"	"	
Toluene	ND	4.29	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	4.29	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	4.29	"	"	"	KRL	"	"	"	
Trichloroethene	ND	4.29	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	8.58	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	4.29	"	"	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-03-66'

1204322-09 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	53.5	*107 %*	*70-130*	*2E04015*	KRL	*04/22/12 10:30*	"	"	
1,2-Dichloroethane-d4	50.6	*101 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	48.9	*97.9 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	48.1	*96.2 %*	*70-130*	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-04-2'

1204322-10 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	ND	4.48	ug/kg	1	2E04015	KRL	04/22/12 11:30	05/02/12 22:39	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	4.48	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	4.48	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	4.48	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	ND	4.48	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	4.48	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	4.48	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	179	"	"	"	KRL	"	"	"	
2-Butanone	**15.4**	8.96	"	"	"	KRL	"	"	"	
2-Hexanone	ND	8.96	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	8.96	"	"	"	KRL	"	"	"	
Acetone	**117**	44.8	"	"	"	KRL	"	"	"	
Benzene	ND	4.48	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	4.48	"	"	"	KRL	"	"	"	
Bromoform	ND	4.48	"	"	"	KRL	"	"	"	
Bromomethane	ND	4.48	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	4.48	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	4.48	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	4.48	"	"	"	KRL	"	"	"	
Chloroethane	ND	4.48	"	"	"	KRL	"	"	"	
Chloroform	ND	4.48	"	"	"	KRL	"	"	"	
Chloromethane	ND	4.48	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	4.48	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	4.48	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	4.48	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	4.48	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	4.48	"	"	"	KRL	"	"	"	
Methylene chloride	ND	4.48	"	"	"	KRL	"	"	"	
o-Xylene	ND	4.48	"	"	"	KRL	"	"	"	
Styrene	ND	4.48	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	4.48	"	"	"	KRL	"	"	"	
Toluene	ND	4.48	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	4.48	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	4.48	"	"	"	KRL	"	"	"	
Trichloroethene	ND	4.48	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	8.96	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	4.48	"	"	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-04-2'

1204322-10 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	54.3	*109 %*	*70-130*	*2E04015*	KRL	*04/22/12 11:30*	"	"	
1,2-Dichloroethane-d4	53.3	*107 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	53.0	*106 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	44.6	*89.1 %*	*70-130*	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-04-54'

1204322-11 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	ND	5.32	ug/kg	1	2E04015	KRL	04/22/12 12:00	05/02/12 23:04	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	5.32	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	5.32	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	5.32	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	ND	5.32	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	5.32	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	5.32	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	213	"	"	"	KRL	"	"	"	
2-Butanone	ND	10.6	"	"	"	KRL	"	"	"	
2-Hexanone	ND	10.6	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	10.6	"	"	"	KRL	"	"	"	
Acetone	ND	53.2	"	"	"	KRL	"	"	"	
Benzene	ND	5.32	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	5.32	"	"	"	KRL	"	"	"	
Bromoform	ND	5.32	"	"	"	KRL	"	"	"	
Bromomethane	ND	5.32	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	5.32	"	"	"	KRL	"	"	"	CC-02
Carbon Tetrachloride	ND	5.32	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	5.32	"	"	"	KRL	"	"	"	
Chloroethane	ND	5.32	"	"	"	KRL	"	"	"	
Chloroform	ND	5.32	"	"	"	KRL	"	"	"	
Chloromethane	ND	5.32	"	"	"	KRL	"	"	"	
cis-1,2-Dichloroethene	ND	5.32	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	5.32	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	5.32	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	5.32	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	5.32	"	"	"	KRL	"	"	"	
Methylene chloride	ND	5.32	"	"	"	KRL	"	"	"	
o-Xylene	ND	5.32	"	"	"	KRL	"	"	"	
Styrene	ND	5.32	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	5.32	"	"	"	KRL	"	"	"	
Toluene	ND	5.32	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	5.32	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	5.32	"	"	"	KRL	"	"	"	
Trichloroethene	ND	5.32	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	10.6	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	5.32	"	"	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

SVE-OBS-Deep-04-54'

1204322-11 (Soil)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	53.1	*106 %*	*70-130*	*2E04015*	KRL	*04/22/12 12:00*	"	"	
1,2-Dichloroethane-d4	52.9	*106 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	49.2	*98.4 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	47.4	*94.8 %*	*70-130*	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

TBV 4050

1204322-12 (Water)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes
Volatile Organic Compounds by EPA Method 8260B										
1,1,1-Trichloroethane	ND	5.00	ug/L	1	2D30006	KRL	04/26/12 10:30	04/26/12 14:44	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	5.00	"	"	"	KRL	"	"	"	
1,1,2-Trichloroethane	ND	5.00	"	"	"	KRL	"	"	"	
1,1-Dichloroethane	ND	5.00	"	"	"	KRL	"	"	"	
1,1-Dichloroethene	ND	5.00	"	"	"	KRL	"	"	"	
1,2-Dichloroethane	ND	5.00	"	"	"	KRL	"	"	"	
1,2-Dichloropropane	ND	5.00	"	"	"	KRL	"	"	"	
1,4-Dioxane	ND	50.0	"	"	"	KRL	"	"	"	CC-01
2-Butanone	ND	10.0	"	"	"	KRL	"	"	"	
2-Hexanone	ND	10.0	"	"	"	KRL	"	"	"	
4-Methyl-2-pentanone	ND	10.0	"	"	"	KRL	"	"	"	
Acetone	ND	10.0	"	"	"	KRL	"	"	"	CC-01
Benzene	ND	5.00	"	"	"	KRL	"	"	"	
Bromodichloromethane	ND	5.00	"	"	"	KRL	"	"	"	
Bromoform	ND	5.00	"	"	"	KRL	"	"	"	
Bromomethane	ND	5.00	"	"	"	KRL	"	"	"	
Carbon disulfide	ND	5.00	"	"	"	KRL	"	"	"	
Carbon Tetrachloride	ND	5.00	"	"	"	KRL	"	"	"	
Chlorobenzene	ND	5.00	"	"	"	KRL	"	"	"	
Chloroethane	ND	5.00	"	"	"	KRL	"	"	"	
Chloroform	ND	5.00	"	"	"	KRL	"	"	"	
Chloromethane	ND	5.00	"	"	"	KRL	"	"	"	CC-01
cis-1,2-Dichloroethene	ND	5.00	"	"	"	KRL	"	"	"	
cis-1,3-Dichloropropene	ND	5.00	"	"	"	KRL	"	"	"	
Dibromochloromethane	ND	5.00	"	"	"	KRL	"	"	"	
Ethylbenzene	ND	5.00	"	"	"	KRL	"	"	"	
m,p-Xylene	ND	5.00	"	"	"	KRL	"	"	"	
Methylene chloride	ND	5.00	"	"	"	KRL	"	"	"	
o-Xylene	ND	5.00	"	"	"	KRL	"	"	"	
Styrene	ND	5.00	"	"	"	KRL	"	"	"	
Tetrachloroethene	ND	5.00	"	"	"	KRL	"	"	"	
Toluene	ND	5.00	"	"	"	KRL	"	"	"	
trans-1,2-Dichloroethene	ND	5.00	"	"	"	KRL	"	"	"	
trans-1,3-Dichloropropene	ND	5.00	"	"	"	KRL	"	"	"	
Trichloroethene	ND	5.00	"	"	"	KRL	"	"	"	
Vinyl acetate	ND	5.00	"	"	"	KRL	"	"	"	
Vinyl chloride	ND	5.00	"	"	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

TBV 4050

1204322-12 (Water)

Analyte	Result	MRL	Units	Dil	Batch	Analyst	Date Time Prepared	Date Time Analyzed	Method	Notes

Volatile Organic Compounds by EPA Method 8260B

Surrogate		*% Rec*	*Rec Limits*	*Batch*		*Date Time Prepared*	*Date Time Analyzed*	*Method*	*Notes*
Dibromofluoromethane	54.5	*109 %*	*70-130*	*2D30006*	KRL	*04/26/12 10:30*	"	"	
1,2-Dichloroethane-d4	55.1	*110 %*	*70-130*	"	KRL	"	"	"	
Toluene-d8	49.2	*98.3 %*	*70-130*	"	KRL	"	"	"	
4-Bromofluorobenzene	49.0	*98.0 %*	*70-130*	"	KRL	"	"	"	

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Project: SVE Pilot Drilling
Project Number: [none]
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Reported:
05/07/12 09:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2D30006 - EPA 5030B										
Blank (2D30006-BLK1)						***Prepared & Analyzed: 04/26/12***				
1,1,1-Trichloroethane	ND	5.00	ug/L							
1,1,2,2-Tetrachloroethane	ND	5.00	"							
1,1,2-Trichloroethane	ND	5.00	"							
1,1-Dichloroethane	ND	5.00	"							
1,1-Dichloroethene	ND	5.00	"							
1,2-Dichloroethane	ND	5.00	"							
1,2-Dichloropropane	ND	5.00	"							
1,4-Dioxane	ND	50.0	"							
2-Butanone	ND	10.0	"							
2-Hexanone	ND	10.0	"							
4-Methyl-2-pentanone	ND	10.0	"							
Acetone	ND	10.0	"							
Benzene	ND	5.00	"							
Bromodichloromethane	ND	5.00	"							
Bromoform	ND	5.00	"							
Bromomethane	ND	5.00	"							
Carbon disulfide	ND	5.00	"							
Carbon Tetrachloride	ND	5.00	"							
Chlorobenzene	ND	5.00	"							
Chloroethane	ND	5.00	"							
Chloroform	ND	5.00	"							
Chloromethane	ND	5.00	"							
cis-1,2-Dichloroethene	ND	5.00	"							
cis-1,3-Dichloropropene	ND	5.00	"							
Dibromochloromethane	ND	5.00	"							
Ethylbenzene	ND	5.00	"							
m,p-Xylene	ND	5.00	"							
Methylene chloride	ND	5.00	"							
o-Xylene	ND	5.00	"							
Styrene	ND	5.00	"							
Tetrachloroethene	ND	5.00	"							
Toluene	ND	5.00	"							
trans-1,2-Dichloroethene	ND	5.00	"							
trans-1,3-Dichloropropene	ND	5.00	"							
Trichloroethene	ND	5.00	"							
Vinyl acetate	ND	5.00	"							
Vinyl chloride	ND	5.00	"							
Surrogate: Dibromofluoromethane	*54.8*		"	*50.0*		*110*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*53.8*		"	*50.0*		*108*	*70-130*			
Surrogate: Toluene-d8	*49.5*		"	*50.0*		*98.9*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*49.0*		"	*50.0*		*98.0*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2D30006 - EPA 5030B										
LCS (2D30006-BS1)						***Prepared & Analyzed: 04/26/12***				
1,1,1-Trichloroethane	22.0	5.00	ug/L	20.0		110	70-130			
1,1,2,2-Tetrachloroethane	22.6	5.00	"	20.0		113	70-130			
1,1,2-Trichloroethane	22.4	5.00	"	20.0		112	70-130			
1,1-Dichloroethane	22.6	5.00	"	20.0		113	74.6-139			
1,1-Dichloroethene	21.1	5.00	"	20.0		106	72.8-138			
1,2-Dichloroethane	22.2	5.00	"	20.0		111	70-130			
1,2-Dichloropropane	21.5	5.00	"	20.0		108	70-130			
1,4-Dioxane	ND	50.0	"	20.0			5-215			Z-01
2-Butanone	20.3	10.0	"	20.0		101	58.5-136			
2-Hexanone	20.2	10.0	"	20.0		101	55.1-136			
4-Methyl-2-pentanone	21.4	10.0	"	20.0		107	50.2-131			
Acetone	18.8	10.0	"	20.0		93.8	27.7-177			
Benzene	21.8	5.00	"	20.0		109	70-130			
Bromodichloromethane	20.4	5.00	"	20.0		102	70-130			
Bromoform	21.0	5.00	"	20.0		105	70-130			
Bromomethane	21.5	5.00	"	20.0		108	58.1-148			
Carbon disulfide	20.6	5.00	"	20.0		103	65.3-138			
Carbon Tetrachloride	21.9	5.00	"	20.0		109	70-130			
Chlorobenzene	22.3	5.00	"	20.0		112	70-130			
Chloroethane	21.1	5.00	"	20.0		106	53.6-151			
Chloroform	21.8	5.00	"	20.0		109	70-130			
Chloromethane	19.3	5.00	"	20.0		96.3	58.8-115			
cis-1,2-Dichloroethene	21.5	5.00	"	20.0		107	70-130			
cis-1,3-Dichloropropene	19.3	5.00	"	20.0		96.4	70-130			
Dibromochloromethane	19.8	5.00	"	20.0		99.1	70-130			
Ethylbenzene	21.7	5.00	"	20.0		109	70-130			
m,p-Xylene	44.4	5.00	"	40.0		111	70-130			
Methylene chloride	20.9	5.00	"	20.0		104	71.6-142			
o-Xylene	22.0	5.00	"	20.0		110	70-130			
Styrene	23.1	5.00	"	20.0		116	70-130			
Tetrachloroethene	22.3	5.00	"	20.0		111	70-130			
Toluene	21.4	5.00	"	20.0		107	70-130			
trans-1,2-Dichloroethene	21.6	5.00	"	20.0		108	73.6-138			
trans-1,3-Dichloropropene	21.1	5.00	"	20.0		105	70-130			
Trichloroethene	20.9	5.00	"	20.0		105	70-130			
Vinyl acetate	22.9	5.00	"	20.0		114	66.6-129			
Vinyl chloride	19.4	5.00	"	20.0		96.8	70-130			
Surrogate: Dibromofluoromethane	*54.4*		"	*50.0*		*109*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*54.4*		"	*50.0*		*109*	*70-130*			
Surrogate: Toluene-d8	*49.3*		"	*50.0*		*98.6*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*49.9*		"	*50.0*		*99.9*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2D30006 - EPA 5030B										
LCS Dup (2D30006-BSD1)						***Prepared & Analyzed: 04/26/12***				
1,1,1-Trichloroethane	21.1	5.00	ug/L	20.0		105	70-130	4.28	35	
1,1,2,2-Tetrachloroethane	20.9	5.00	"	20.0		105	70-130	7.72	35	
1,1,2-Trichloroethane	21.2	5.00	"	20.0		106	70-130	5.42	35	
1,1-Dichloroethane	21.4	5.00	"	20.0		107	74.6-139	5.31	35	
1,1-Dichloroethene	20.3	5.00	"	20.0		102	72.8-138	3.96	35	
1,2-Dichloroethane	21.4	5.00	"	20.0		107	70-130	3.76	35	
1,2-Dichloropropane	21.1	5.00	"	20.0		105	70-130	2.12	35	
1,4-Dioxane	ND	50.0	"	20.0			5-215		35	Z-01
2-Butanone	19.8	10.0	"	20.0		99.2	58.5-136	2.14	35	
2-Hexanone	20.3	10.0	"	20.0		101	55.1-136	0.445	35	
4-Methyl-2-pentanone	21.1	10.0	"	20.0		105	50.2-131	1.51	35	
Acetone	17.0	10.0	"	20.0		85.1	27.7-177	9.73	35	
Benzene	21.0	5.00	"	20.0		105	70-130	3.92	35	
Bromodichloromethane	19.0	5.00	"	20.0		95.2	70-130	7.05	35	
Bromoform	20.9	5.00	"	20.0		105	70-130	0.239	35	
Bromomethane	19.5	5.00	"	20.0		97.7	58.1-148	9.70	35	
Carbon disulfide	19.5	5.00	"	20.0		97.5	65.3-138	5.34	35	
Carbon Tetrachloride	21.6	5.00	"	20.0		108	70-130	1.10	35	
Chlorobenzene	21.4	5.00	"	20.0		107	70-130	4.26	35	
Chloroethane	20.4	5.00	"	20.0		102	53.6-151	3.52	35	
Chloroform	21.0	5.00	"	20.0		105	70-130	3.93	35	
Chloromethane	18.7	5.00	"	20.0		93.4	58.8-115	3.11	35	
cis-1,2-Dichloroethene	20.7	5.00	"	20.0		103	70-130	3.75	35	
cis-1,3-Dichloropropene	19.1	5.00	"	20.0		95.7	70-130	0.781	35	
Dibromochloromethane	19.4	5.00	"	20.0		96.9	70-130	2.25	35	
Ethylbenzene	20.9	5.00	"	20.0		105	70-130	3.75	35	
m,p-Xylene	42.3	5.00	"	40.0		106	70-130	4.98	35	
Methylene chloride	20.8	5.00	"	20.0		104	71.6-142	0.240	35	
o-Xylene	21.6	5.00	"	20.0		108	70-130	1.65	35	
Styrene	22.3	5.00	"	20.0		111	70-130	3.61	35	
Tetrachloroethene	21.4	5.00	"	20.0		107	70-130	4.17	35	
Toluene	20.7	5.00	"	20.0		103	70-130	3.61	35	
trans-1,2-Dichloroethene	20.4	5.00	"	20.0		102	73.6-138	5.87	35	
trans-1,3-Dichloropropene	20.0	5.00	"	20.0		99.9	70-130	5.31	35	
Trichloroethene	20.2	5.00	"	20.0		101	70-130	3.65	35	
Vinyl acetate	21.1	5.00	"	20.0		105	66.6-129	8.01	35	
Vinyl chloride	18.5	5.00	"	20.0		92.3	70-130	4.81	35	
Surrogate: Dibromofluoromethane	*54.1*		"	*50.0*		*108*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*54.4*		"	*50.0*		*109*	*70-130*			
Surrogate: Toluene-d8	*49.7*		"	*50.0*		*99.5*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.0*		"	*50.0*		*100*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2D30006 - EPA 5030B										
Matrix Spike (2D30006-MS1)	**Source: 1204351-01**					***Prepared & Analyzed: 04/26/12***				
1,1,1-Trichloroethane	20.9	5.00	ug/L	20.0	ND	105	70-130			
1,1,2,2-Tetrachloroethane	21.0	5.00	"	20.0	ND	105	71.9-140			
1,1,2-Trichloroethane	21.2	5.00	"	20.0	ND	106	70-130			
1,1-Dichloroethane	20.1	5.00	"	20.0	ND	101	78.8-143			
1,1-Dichloroethene	17.2	5.00	"	20.0	ND	86.2	72.8-143			
1,2-Dichloroethane	21.0	5.00	"	20.0	ND	105	70-130			
1,2-Dichloropropane	20.0	5.00	"	20.0	ND	99.8	70-130			
1,4-Dioxane	ND	50.0	"	20.0	ND		0-0			Z-01
2-Butanone	19.5	10.0	"	20.0	ND	97.5	56.9-131			
2-Hexanone	21.5	10.0	"	20.0	ND	108	54.7-128			
4-Methyl-2-pentanone	20.9	10.0	"	20.0	ND	105	45.7-133			
Acetone	18.3	10.0	"	20.0	ND	91.7	48.4-154			
Benzene	19.3	5.00	"	20.0	ND	96.4	70-130			
Bromodichloromethane	19.4	5.00	"	20.0	ND	97.0	70-130			
Bromoform	21.5	5.00	"	20.0	ND	108	60.7-127			
Bromomethane	9.44	5.00	"	20.0	ND	47.2	67.1-144			M2
Carbon disulfide	18.8	5.00	"	20.0	0.810	89.9	46.2-151			
Carbon Tetrachloride	22.3	5.00	"	20.0	ND	112	69.8-136			
Chlorobenzene	19.6	5.00	"	20.0	ND	97.9	70-130			
Chloroethane	14.1	5.00	"	20.0	1.10	65.1	54.8-152			
Chloroform	19.8	5.00	"	20.0	ND	98.8	70-130			
Chloromethane	13.8	5.00	"	20.0	ND	68.9	57.5-121			
cis-1,2-Dichloroethene	18.6	5.00	"	20.0	ND	93.2	70-130			
cis-1,3-Dichloropropene	18.8	5.00	"	20.0	ND	94.1	70-130			
Dibromochloromethane	20.7	5.00	"	20.0	ND	103	67.2-125			
Ethylbenzene	19.2	5.00	"	20.0	ND	95.9	70-130			
m,p-Xylene	40.1	5.00	"	40.0	ND	100	63.9-131			
Methylene chloride	18.7	5.00	"	20.0	ND	93.4	74.2-144			
o-Xylene	19.8	5.00	"	20.0	ND	99.0	60.7-129			
Styrene	20.1	5.00	"	20.0	ND	101	10.5-158			
Tetrachloroethene	19.7	5.00	"	20.0	ND	98.7	70-130			
Toluene	19.5	5.00	"	20.0	ND	97.5	70-130			
trans-1,2-Dichloroethene	18.4	5.00	"	20.0	ND	92.0	71.7-144			
trans-1,3-Dichloropropene	20.5	5.00	"	20.0	ND	103	65-115			
Trichloroethene	18.6	5.00	"	20.0	ND	92.9	70-130			
Vinyl acetate	24.9	5.00	"	20.0	ND	124	55-132			
Vinyl chloride	14.0	5.00	"	20.0	ND	70.2	65-127			
Surrogate: Dibromofluoromethane	*55.8*		"	*50.0*		*112*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*54.2*		"	*50.0*		*108*	*70-130*			
Surrogate: Toluene-d8	*49.1*		"	*50.0*		*98.2*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*49.7*		"	*50.0*		*99.4*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
Blank (2E04015-BLK1)						***Prepared & Analyzed: 05/02/12***				
1,1,1-Trichloroethane	ND	5.00	ug/kg							
1,1,2,2-Tetrachloroethane	ND	5.00	"							
1,1,2-Trichloroethane	ND	5.00	"							
1,1-Dichloroethane	ND	5.00	"							
1,1-Dichloroethene	ND	5.00	"							
1,2-Dichloroethane	ND	5.00	"							
1,2-Dichloropropane	ND	5.00	"							
1,4-Dioxane	ND	200	"							
2-Butanone	ND	10.0	"							
2-Hexanone	ND	10.0	"							
4-Methyl-2-pentanone	ND	10.0	"							
Acetone	ND	50.0	"							
Benzene	ND	5.00	"							
Bromodichloromethane	ND	5.00	"							
Bromoform	ND	5.00	"							
Bromomethane	ND	5.00	"							
Carbon disulfide	ND	5.00	"							
Carbon Tetrachloride	ND	5.00	"							
Chlorobenzene	ND	5.00	"							
Chloroethane	ND	5.00	"							
Chloroform	ND	5.00	"							
Chloromethane	ND	5.00	"							
cis-1,2-Dichloroethene	ND	5.00	"							
cis-1,3-Dichloropropene	ND	5.00	"							
Dibromochloromethane	ND	5.00	"							
Ethylbenzene	ND	5.00	"							
m,p-Xylene	ND	5.00	"							
Methylene chloride	ND	5.00	"							
o-Xylene	ND	5.00	"							
Styrene	ND	5.00	"							
Tetrachloroethene	ND	5.00	"							
Toluene	ND	5.00	"							
trans-1,2-Dichloroethene	ND	5.00	"							
trans-1,3-Dichloropropene	ND	5.00	"							
Trichloroethene	ND	5.00	"							
Vinyl acetate	ND	10.0	"							
Vinyl chloride	ND	5.00	"							
Surrogate: Dibromofluoromethane	*51.2*		"	*50.0*		*102*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*51.8*		"	*50.0*		*104*	*70-130*			
Surrogate: Toluene-d8	*50.0*		"	*50.0*		*99.9*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.7*		"	*50.0*		*101*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
Blank (2E04015-BLK2)						***Prepared & Analyzed: 05/03/12***				
1,1,1-Trichloroethane	ND	5.00	ug/kg							
1,1,2,2-Tetrachloroethane	ND	5.00	"							
1,1,2-Trichloroethane	ND	5.00	"							
1,1-Dichloroethane	ND	5.00	"							
1,1-Dichloroethene	ND	5.00	"							
1,2-Dichloroethane	ND	5.00	"							
1,2-Dichloropropane	ND	5.00	"							
2-Butanone	ND	10.0	"							
2-Hexanone	ND	10.0	"							
4-Methyl-2-pentanone	ND	10.0	"							
Acetone	ND	50.0	"							
Benzene	ND	5.00	"							
Bromodichloromethane	ND	5.00	"							
Bromoform	ND	5.00	"							
Bromomethane	ND	5.00	"							
Carbon disulfide	ND	5.00	"							
Carbon Tetrachloride	ND	5.00	"							
Chlorobenzene	ND	5.00	"							
Chloroethane	ND	5.00	"							
Chloroform	ND	5.00	"							
Chloromethane	ND	5.00	"							
cis-1,2-Dichloroethene	ND	5.00	"							
cis-1,3-Dichloropropene	ND	5.00	"							
Dibromochloromethane	ND	5.00	"							
Ethylbenzene	ND	5.00	"							
m,p-Xylene	ND	5.00	"							
Methylene chloride	ND	5.00	"							
o-Xylene	ND	5.00	"							
Styrene	ND	5.00	"							
Tetrachloroethene	ND	5.00	"							
Toluene	ND	5.00	"							
trans-1,2-Dichloroethene	ND	5.00	"							
trans-1,3-Dichloropropene	ND	5.00	"							
Trichloroethene	ND	5.00	"							
Vinyl acetate	ND	10.0	"							
Vinyl chloride	ND	5.00	"							
Surrogate: Dibromofluoromethane	*50.0*		"	*50.0*		*100*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*50.3*		"	*50.0*		*101*	*70-130*			
Surrogate: Toluene-d8	*48.2*		"	*50.0*		*96.3*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*49.1*		"	*50.0*		*98.1*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
LCS (2E04015-BS1)						***Prepared & Analyzed: 05/02/12***				
1,1,1-Trichloroethane	20.1	5.00	ug/kg	20.0		101	70-130			
1,1,2,2-Tetrachloroethane	21.5	5.00	"	20.0		107	70-130			
1,1,2-Trichloroethane	20.0	5.00	"	20.0		100	70-130			
1,1-Dichloroethane	20.8	5.00	"	20.0		104	74.6-139			
1,1-Dichloroethene	19.7	5.00	"	20.0		98.3	72.8-138			
1,2-Dichloroethane	20.9	5.00	"	20.0		104	70-130			
1,2-Dichloropropane	19.1	5.00	"	20.0		95.6	70-130			
2-Butanone	21.6	10.0	"	20.0		108	58.5-136			
2-Hexanone	21.5	10.0	"	20.0		107	55.1-136			
4-Methyl-2-pentanone	19.7	10.0	"	20.0		98.3	50.2-131			
Acetone	25.1	50.0	"	20.0		125	27.7-177			
Benzene	19.6	5.00	"	20.0		98.1	70-130			
Bromodichloromethane	20.0	5.00	"	20.0		100	70-130			
Bromoform	20.5	5.00	"	20.0		102	70-130			
Bromomethane	18.7	5.00	"	20.0		93.6	58.1-148			
Carbon disulfide	20.3	5.00	"	20.0		102	65.3-138			
Carbon Tetrachloride	19.3	5.00	"	20.0		96.3	70-130			
Chlorobenzene	18.8	5.00	"	20.0		93.8	70-130			
Chloroethane	18.7	5.00	"	20.0		93.4	53.6-151			
Chloroform	20.5	5.00	"	20.0		103	70-130			
Chloromethane	18.8	5.00	"	20.0		93.8	58.8-115			
cis-1,2-Dichloroethene	20.4	5.00	"	20.0		102	70-130			
cis-1,3-Dichloropropene	18.0	5.00	"	20.0		90.1	70-130			
Dibromochloromethane	20.5	5.00	"	20.0		102	70-130			
Ethylbenzene	18.6	5.00	"	20.0		93.1	70-130			
m,p-Xylene	36.5	5.00	"	40.0		91.3	70-130			
Methylene chloride	19.6	5.00	"	20.0		98.2	71.6-142			
o-Xylene	18.4	5.00	"	20.0		91.8	70-130			
Styrene	18.1	5.00	"	20.0		90.5	70-130			
Tetrachloroethene	17.4	5.00	"	20.0		87.2	70-130			
Toluene	18.2	5.00	"	20.0		90.9	70-130			
trans-1,2-Dichloroethene	19.9	5.00	"	20.0		99.4	73.6-138			
trans-1,3-Dichloropropene	18.1	5.00	"	20.0		90.3	70-130			
Trichloroethene	18.7	5.00	"	20.0		93.7	70-130			
Vinyl acetate	14.2	10.0	"	20.0		70.9	66.6-129			
Vinyl chloride	18.9	5.00	"	20.0		94.4	70-130			
Surrogate: Dibromofluoromethane	*52.2*		"	*50.0*		*104*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*51.6*		"	*50.0*		*103*	*70-130*			
Surrogate: Toluene-d8	*49.7*		"	*50.0*		*99.4*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*52.4*		"	*50.0*		*105*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
LCS (2E04015-BS2)						***Prepared & Analyzed: 05/02/12***				
1,4-Dioxane	569	200	ug/kg	500		114	5-215			
Surrogate: Dibromofluoromethane	*52.6*		"	*50.0*		*105*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*47.0*		"	*50.0*		*94.0*	*70-130*			
Surrogate: Toluene-d8	*47.3*		"	*50.0*		*94.7*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*49.1*		"	*50.0*		*98.2*	*70-130*			
LCS (2E04015-BS3)						***Prepared & Analyzed: 05/03/12***				
1,1,1-Trichloroethane	19.4	5.00	ug/kg	20.0		97.0	70-130			
1,1,2,2-Tetrachloroethane	22.1	5.00	"	20.0		110	70-130			
1,1,2-Trichloroethane	19.2	5.00	"	20.0		96.0	70-130			
1,1-Dichloroethane	21.4	5.00	"	20.0		107	74.6-139			
1,1-Dichloroethene	20.4	5.00	"	20.0		102	72.8-138			
1,2-Dichloroethane	20.8	5.00	"	20.0		104	70-130			
1,2-Dichloropropane	19.0	5.00	"	20.0		95.0	70-130			
2-Butanone	21.7	10.0	"	20.0		108	58.5-136			
2-Hexanone	21.9	10.0	"	20.0		109	55.1-136			
4-Methyl-2-pentanone	20.1	10.0	"	20.0		101	50.2-131			
Acetone	25.0	50.0	"	20.0		125	27.7-177			
Benzene	20.4	5.00	"	20.0		102	70-130			
Bromodichloromethane	19.5	5.00	"	20.0		97.7	70-130			
Bromoform	19.2	5.00	"	20.0		95.8	70-130			
Bromomethane	19.0	5.00	"	20.0		95.0	58.1-148			
Carbon disulfide	22.4	5.00	"	20.0		112	65.3-138			
Carbon Tetrachloride	18.4	5.00	"	20.0		92.2	70-130			
Chlorobenzene	19.4	5.00	"	20.0		96.8	70-130			
Chloroethane	18.4	5.00	"	20.0		92.2	53.6-151			
Chloroform	20.6	5.00	"	20.0		103	70-130			
Chloromethane	16.9	5.00	"	20.0		84.7	58.8-115			
cis-1,2-Dichloroethene	20.3	5.00	"	20.0		101	70-130			
cis-1,3-Dichloropropene	16.9	5.00	"	20.0		84.6	70-130			
Dibromochloromethane	20.1	5.00	"	20.0		101	70-130			
Ethylbenzene	19.6	5.00	"	20.0		98.0	70-130			
m,p-Xylene	38.3	5.00	"	40.0		95.8	70-130			
Methylene chloride	20.5	5.00	"	20.0		102	71.6-142			
o-Xylene	19.8	5.00	"	20.0		98.8	70-130			
Styrene	19.2	5.00	"	20.0		95.8	70-130			
Tetrachloroethene	18.7	5.00	"	20.0		93.7	70-130			
Toluene	18.6	5.00	"	20.0		93.0	70-130			
trans-1,2-Dichloroethene	21.3	5.00	"	20.0		107	73.6-138			
trans-1,3-Dichloropropene	16.4	5.00	"	20.0		82.1	70-130			
Trichloroethene	19.5	5.00	"	20.0		97.5	70-130			
Vinyl acetate	19.7	10.0	"	20.0		98.4	66.6-129			
Vinyl chloride	17.6	5.00	"	20.0		88.1	70-130			
Surrogate: Dibromofluoromethane	*52.2*		"	*50.0*		*104*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
LCS (2E04015-BS3)						***Prepared & Analyzed: 05/03/12***				
Surrogate: 1,2-Dichloroethane-d4	*50.5*		*ug/kg*	*50.0*		*101*	*70-130*			
Surrogate: Toluene-d8	*48.3*		*"*	*50.0*		*96.5*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.9*		*"*	*50.0*		*102*	*70-130*			
LCS Dup (2E04015-BSD1)						***Prepared & Analyzed: 05/02/12***				
1,1,1-Trichloroethane	19.7	5.00	ug/kg	20.0		98.4	70-130	2.36	35	
1,1,2,2-Tetrachloroethane	20.8	5.00	"	20.0		104	70-130	3.26	35	
1,1,2-Trichloroethane	19.2	5.00	"	20.0		96.1	70-130	3.93	35	
1,1-Dichloroethane	20.4	5.00	"	20.0		102	74.6-139	1.70	35	
1,1-Dichloroethene	19.1	5.00	"	20.0		95.4	72.8-138	3.05	35	
1,2-Dichloroethane	19.9	5.00	"	20.0		99.4	70-130	4.96	35	
1,2-Dichloropropane	18.9	5.00	"	20.0		94.5	70-130	1.10	35	
2-Butanone	20.8	10.0	"	20.0		104	58.5-136	3.68	35	
2-Hexanone	21.4	10.0	"	20.0		107	55.1-136	0.280	35	
4-Methyl-2-pentanone	20.6	10.0	"	20.0		103	50.2-131	4.67	35	
Acetone	23.1	50.0	"	20.0		116	27.7-177	7.93	35	
Benzene	19.0	5.00	"	20.0		94.8	70-130	3.42	35	
Bromodichloromethane	20.1	5.00	"	20.0		100	70-130	0.0997	35	
Bromoform	20.1	5.00	"	20.0		100	70-130	1.92	35	
Bromomethane	18.5	5.00	"	20.0		92.5	58.1-148	1.18	35	
Carbon disulfide	19.7	5.00	"	20.0		98.4	65.3-138	3.30	35	
Carbon Tetrachloride	18.9	5.00	"	20.0		94.7	70-130	1.62	35	
Chlorobenzene	17.7	5.00	"	20.0		88.5	70-130	5.81	35	
Chloroethane	18.3	5.00	"	20.0		91.6	53.6-151	2.00	35	
Chloroform	19.3	5.00	"	20.0		96.7	70-130	5.87	35	
Chloromethane	17.8	5.00	"	20.0		88.9	58.8-115	5.36	35	
cis-1,2-Dichloroethene	19.7	5.00	"	20.0		98.3	70-130	3.45	35	
cis-1,3-Dichloropropene	17.8	5.00	"	20.0		89.0	70-130	1.28	35	
Dibromochloromethane	20.4	5.00	"	20.0		102	70-130	0.147	35	
Ethylbenzene	17.7	5.00	"	20.0		88.4	70-130	5.18	35	
m,p-Xylene	34.7	5.00	"	40.0		86.8	70-130	5.08	35	
Methylene chloride	19.6	5.00	"	20.0		97.8	71.6-142	0.459	35	
o-Xylene	17.9	5.00	"	20.0		89.4	70-130	2.65	35	
Styrene	17.4	5.00	"	20.0		86.9	70-130	4.06	35	
Tetrachloroethene	17.2	5.00	"	20.0		85.8	70-130	1.68	35	
Toluene	17.6	5.00	"	20.0		88.0	70-130	3.30	35	
trans-1,2-Dichloroethene	19.6	5.00	"	20.0		98.1	73.6-138	1.32	35	
trans-1,3-Dichloropropene	18.2	5.00	"	20.0		90.9	70-130	0.718	35	
Trichloroethene	18.1	5.00	"	20.0		90.6	70-130	3.31	35	
Vinyl acetate	13.2	10.0	"	20.0		66.2	66.6-129	6.86	35	L2
Vinyl chloride	18.3	5.00	"	20.0		91.4	70-130	3.28	35	
Surrogate: Dibromofluoromethane	*52.6*		*"*	*50.0*		*105*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*49.9*		*"*	*50.0*		*99.8*	*70-130*			
Surrogate: Toluene-d8	*49.1*		*"*	*50.0*		*98.2*	*70-130*			

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Project Manager: Chris Johnson

Reported:
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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
LCS Dup (2E04015-BSD1)						***Prepared & Analyzed: 05/02/12***				
Surrogate: 4-Bromofluorobenzene	*51.1*		*ug/kg*	*50.0*		*102*	*70-130*			
LCS Dup (2E04015-BSD2)						***Prepared & Analyzed: 05/02/12***				
1,4-Dioxane	469	200	ug/kg	500		93.9	5-215	19.3	35	
Surrogate: Dibromofluoromethane	*55.2*		*"*	*50.0*		*110*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*54.1*		*"*	*50.0*		*108*	*70-130*			
Surrogate: Toluene-d8	*47.4*		*"*	*50.0*		*94.8*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.3*		*"*	*50.0*		*101*	*70-130*			
LCS Dup (2E04015-BSD3)						***Prepared & Analyzed: 05/03/12***				
1,1,1-Trichloroethane	17.5	5.00	ug/kg	20.0		87.5	70-130	10.3	35	
1,1,2,2-Tetrachloroethane	21.1	5.00	"	20.0		106	70-130	4.40	35	
1,1,2-Trichloroethane	19.8	5.00	"	20.0		99.1	70-130	3.13	35	
1,1-Dichloroethane	19.0	5.00	"	20.0		95.2	74.6-139	11.6	35	
1,1-Dichloroethene	17.8	5.00	"	20.0		88.8	72.8-138	13.8	35	
1,2-Dichloroethane	20.3	5.00	"	20.0		102	70-130	2.19	35	
1,2-Dichloropropane	18.8	5.00	"	20.0		94.0	70-130	1.06	35	
2-Butanone	23.1	10.0	"	20.0		116	58.5-136	6.57	35	
2-Hexanone	25.1	10.0	"	20.0		125	55.1-136	13.6	35	
4-Methyl-2-pentanone	20.7	10.0	"	20.0		104	50.2-131	3.09	35	
Acetone	26.1	50.0	"	20.0		130	27.7-177	4.23	35	
Benzene	19.2	5.00	"	20.0		95.8	70-130	6.37	35	
Bromodichloromethane	19.6	5.00	"	20.0		97.9	70-130	0.153	35	
Bromoform	20.9	5.00	"	20.0		105	70-130	8.79	35	
Bromomethane	18.5	5.00	"	20.0		92.7	58.1-148	2.50	35	
Carbon disulfide	18.5	5.00	"	20.0		92.5	65.3-138	19.2	35	
Carbon Tetrachloride	16.6	5.00	"	20.0		83.1	70-130	10.3	35	
Chlorobenzene	19.0	5.00	"	20.0		94.9	70-130	1.93	35	
Chloroethane	17.1	5.00	"	20.0		85.3	53.6-151	7.78	35	
Chloroform	18.4	5.00	"	20.0		91.9	70-130	11.2	35	
Chloromethane	15.5	5.00	"	20.0		77.6	58.8-115	8.69	35	
cis-1,2-Dichloroethene	18.1	5.00	"	20.0		90.4	70-130	11.4	35	
cis-1,3-Dichloropropene	18.3	5.00	"	20.0		91.7	70-130	8.05	35	
Dibromochloromethane	20.7	5.00	"	20.0		104	70-130	2.99	35	
Ethylbenzene	18.5	5.00	"	20.0		92.7	70-130	5.51	35	
m,p-Xylene	36.4	5.00	"	40.0		91.1	70-130	5.08	35	
Methylene chloride	17.6	5.00	"	20.0		87.8	71.6-142	15.2	35	
o-Xylene	18.1	5.00	"	20.0		90.4	70-130	8.83	35	
Styrene	19.2	5.00	"	20.0		96.2	70-130	0.469	35	
Tetrachloroethene	17.6	5.00	"	20.0		87.8	70-130	6.45	35	
Toluene	18.6	5.00	"	20.0		92.9	70-130	0.161	35	
trans-1,2-Dichloroethene	18.2	5.00	"	20.0		91.2	73.6-138	15.6	35	
trans-1,3-Dichloropropene	18.0	5.00	"	20.0		90.0	70-130	9.18	35	
Trichloroethene	19.0	5.00	"	20.0		95.2	70-130	2.44	35	
Vinyl acetate	19.0	10.0	"	20.0		95.1	66.6-129	3.36	35	

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
LCS Dup (2E04015-BSD3)						***Prepared & Analyzed: 05/03/12***				
Vinyl chloride	14.9	5.00	ug/kg	20.0		74.6	70-130	16.6	35	
Surrogate: Dibromofluoromethane	*49.0*		"	*50.0*		*98.0*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*52.6*		"	*50.0*		*105*	*70-130*			
Surrogate: Toluene-d8	*48.4*		"	*50.0*		*96.8*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*52.5*		"	*50.0*		*105*	*70-130*			
Matrix Spike (2E04015-MS1)	**Source: 1204322-04**					***Prepared & Analyzed: 05/02/12***				
1,1,1-Trichloroethane	19.4	4.85	ug/kg	19.4	ND	99.9	70-130			
1,1,2,2-Tetrachloroethane	18.3	4.85	"	19.4	ND	94.5	71.9-140			
1,1,2-Trichloroethane	16.5	4.85	"	19.4	ND	84.9	70-130			
1,1-Dichloroethane	19.9	4.85	"	19.4	ND	103	78.8-143			
1,1-Dichloroethene	20.3	4.85	"	19.4	ND	104	72.8-143			
1,2-Dichloroethane	17.9	4.85	"	19.4	ND	92.1	70-130			
1,2-Dichloropropane	16.2	4.85	"	19.4	ND	83.3	70-130			
2-Butanone	18.0	9.71	"	19.4	ND	92.6	56.9-131			
2-Hexanone	17.5	9.71	"	19.4	ND	90.2	54.7-128			
4-Methyl-2-pentanone	14.3	9.71	"	19.4	ND	73.7	45.7-133			
Acetone	20.2	48.5	"	19.4	ND	104	48.4-154			
Benzene	17.7	4.85	"	19.4	ND	91.0	70-130			
Bromodichloromethane	16.5	4.85	"	19.4	ND	85.2	70-130			
Bromoform	16.2	4.85	"	19.4	ND	83.5	60.7-127			
Bromomethane	19.2	4.85	"	19.4	ND	98.8	67.1-144			
Carbon disulfide	19.3	4.85	"	19.4	ND	99.3	46.2-151			
Carbon Tetrachloride	17.9	4.85	"	19.4	ND	92.1	69.8-136			
Chlorobenzene	17.0	4.85	"	19.4	ND	87.3	70-130			
Chloroethane	20.0	4.85	"	19.4	ND	103	54.8-152			
Chloroform	18.6	4.85	"	19.4	ND	95.7	70-130			
Chloromethane	17.0	4.85	"	19.4	ND	87.8	57.5-121			
cis-1,2-Dichloroethene	18.1	4.85	"	19.4	ND	93.3	70-130			
cis-1,3-Dichloropropene	13.9	4.85	"	19.4	ND	71.6	70-130			
Dibromochloromethane	16.1	4.85	"	19.4	ND	82.9	67.2-125			
Ethylbenzene	17.9	4.85	"	19.4	ND	92.3	70-130			
m,p-Xylene	35.4	4.85	"	38.8	ND	91.1	63.9-131			
Methylene chloride	18.8	4.85	"	19.4	ND	96.9	74.2-144			
o-Xylene	17.7	4.85	"	19.4	ND	91.3	60.7-129			
Styrene	16.6	4.85	"	19.4	ND	85.4	10.5-158			
Tetrachloroethene	16.8	4.85	"	19.4	ND	86.5	70-130			
Toluene	15.9	4.85	"	19.4	ND	82.0	70-130			
trans-1,2-Dichloroethene	20.2	4.85	"	19.4	ND	104	71.7-144			
trans-1,3-Dichloropropene	12.1	4.85	"	19.4	ND	62.4	65-115			M2
Trichloroethene	17.1	4.85	"	19.4	ND	88.1	70-130			
Vinyl acetate	14.4	9.71	"	19.4	ND	74.3	55-132			
Vinyl chloride	18.7	4.85	"	19.4	ND	96.1	65-127			
Surrogate: Dibromofluoromethane	*52.9*		"	*50.0*		*106*	*70-130*			

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
Matrix Spike (2E04015-MS1)	**Source: 1204322-04**						***Prepared & Analyzed: 05/02/12***			
Surrogate: 1,2-Dichloroethane-d4	*51.8*		*ug/kg*	*50.0*		*104*	*70-130*			
Surrogate: Toluene-d8	*50.2*		*"*	*50.0*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.3*		*"*	*50.0*		*101*	*70-130*			
Matrix Spike (2E04015-MS2)	**Source: 1204322-02**						***Prepared & Analyzed: 05/02/12***			
1,4-Dioxane	851	189	ug/kg	473	ND	180	0-0			
Surrogate: Dibromofluoromethane	*55.5*		*"*	*50.0*		*111*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*49.0*		*"*	*50.0*		*98.1*	*70-130*			
Surrogate: Toluene-d8	*48.0*		*"*	*50.0*		*95.9*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*49.6*		*"*	*50.0*		*99.1*	*70-130*			
Matrix Spike (2E04015-MS3)	**Source: 1204405-02**						***Prepared: 05/02/12 Analyzed: 05/03/12***			
1,1,1-Trichloroethane	20.0	4.93	ug/kg	19.7	ND	102	70-130			
1,1,2,2-Tetrachloroethane	18.2	4.93	"	19.7	ND	92.5	71.9-140			
1,1,2-Trichloroethane	15.7	4.93	"	19.7	ND	79.7	70-130			
1,1-Dichloroethane	22.0	4.93	"	19.7	ND	111	78.8-143			
1,1-Dichloroethene	20.8	4.93	"	19.7	ND	106	72.8-143			
1,2-Dichloroethane	19.1	4.93	"	19.7	ND	96.7	70-130			
1,2-Dichloropropane	16.9	4.93	"	19.7	ND	85.7	70-130			
2-Butanone	19.6	9.86	"	19.7	ND	99.5	56.9-131			
2-Hexanone	16.7	9.86	"	19.7	ND	84.9	54.7-128			
4-Methyl-2-pentanone	14.4	9.86	"	19.7	ND	72.8	45.7-133			
Acetone	37.0	49.3	"	19.7	11.7	128	48.4-154			
Benzene	18.7	4.93	"	19.7	ND	94.6	70-130			
Bromodichloromethane	18.4	4.93	"	19.7	ND	93.3	70-130			
Bromoform	16.6	4.93	"	19.7	ND	84.3	60.7-127			
Bromomethane	10.0	4.93	"	19.7	ND	50.9	67.1-144			M2
Carbon disulfide	30.0	4.93	"	19.7	3.54	134	46.2-151			
Carbon Tetrachloride	18.1	4.93	"	19.7	ND	91.8	69.8-136			
Chlorobenzene	16.5	4.93	"	19.7	ND	83.8	70-130			
Chloroethane	22.6	4.93	"	19.7	ND	115	54.8-152			
Chloroform	20.3	4.93	"	19.7	ND	103	70-130			
Chloromethane	8.78	4.93	"	19.7	ND	44.5	57.5-121			M2
cis-1,2-Dichloroethene	19.5	4.93	"	19.7	ND	99.0	70-130			
cis-1,3-Dichloropropene	13.6	4.93	"	19.7	ND	69.1	70-130			M2
Dibromochloromethane	17.1	4.93	"	19.7	ND	86.9	67.2-125			
Ethylbenzene	17.2	4.93	"	19.7	ND	87.4	70-130			
m,p-Xylene	34.1	4.93	"	39.4	ND	86.5	63.9-131			
Methylene chloride	21.5	4.93	"	19.7	ND	109	74.2-144			
o-Xylene	17.8	4.93	"	19.7	ND	90.4	60.7-129			
Styrene	9.29	4.93	"	19.7	ND	47.1	10.5-158			
Tetrachloroethene	16.0	4.93	"	19.7	ND	80.9	70-130			
Toluene	15.8	4.93	"	19.7	ND	80.2	70-130			
trans-1,2-Dichloroethene	21.6	4.93	"	19.7	ND	110	71.7-144			
trans-1,3-Dichloropropene	11.6	4.93	"	19.7	ND	59.0	65-115			M2

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Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
Matrix Spike (2E04015-MS3)	**Source: 1204405-02**					***Prepared: 05/02/12 Analyzed: 05/03/12***				
Trichloroethene	18.3	4.93	ug/kg	19.7	ND	92.9	70-130			
Vinyl acetate	13.1	9.86	"	19.7	ND	66.2	55-132			
Vinyl chloride	14.4	4.93	"	19.7	ND	73.2	65-127			
Surrogate: Dibromofluoromethane	*56.5*		"	*50.0*		*113*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*49.1*		"	*50.0*		*98.2*	*70-130*			
Surrogate: Toluene-d8	*50.2*		"	*50.0*		*100*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*49.1*		"	*50.0*		*98.2*	*70-130*			
Matrix Spike Dup (2E04015-MSD3)	**Source: 1204405-02**					***Prepared: 05/02/12 Analyzed: 05/03/12***				
1,1,1-Trichloroethane	21.2	4.92	ug/kg	19.7	ND	108	70-130	5.58	40	
1,1,2,2-Tetrachloroethane	19.4	4.92	"	19.7	ND	98.8	71.9-140	6.34	40	
1,1,2-Trichloroethane	16.4	4.92	"	19.7	ND	83.5	70-130	4.34	40	
1,1-Dichloroethane	22.7	4.92	"	19.7	ND	116	78.8-143	3.46	40	
1,1-Dichloroethene	22.3	4.92	"	19.7	ND	113	72.8-143	6.88	40	
1,2-Dichloroethane	19.1	4.92	"	19.7	ND	97.2	70-130	0.267	40	
1,2-Dichloropropane	17.7	4.92	"	19.7	ND	89.9	70-130	4.64	40	
2-Butanone	19.3	9.84	"	19.7	ND	97.8	56.9-131	1.92	40	
2-Hexanone	18.3	9.84	"	19.7	ND	93.1	54.7-128	9.02	40	
4-Methyl-2-pentanone	18.0	9.84	"	19.7	ND	91.6	45.7-133	22.7	40	
Acetone	36.8	49.2	"	19.7	11.7	127	48.4-154	0.518	40	
Benzene	19.2	4.92	"	19.7	ND	97.3	70-130	2.56	40	
Bromodichloromethane	19.8	4.92	"	19.7	ND	101	70-130	7.33	40	
Bromoform	19.0	4.92	"	19.7	ND	96.4	60.7-127	13.2	40	
Bromomethane	10.3	4.92	"	19.7	ND	52.2	67.1-144	2.33	40	M2
Carbon disulfide	34.3	4.92	"	19.7	3.54	156	46.2-151	13.2	40	M1
Carbon Tetrachloride	19.4	4.92	"	19.7	ND	98.6	69.8-136	6.90	40	
Chlorobenzene	17.7	4.92	"	19.7	ND	89.7	70-130	6.60	40	
Chloroethane	22.9	4.92	"	19.7	ND	116	54.8-152	1.19	40	
Chloroform	20.3	4.92	"	19.7	ND	103	70-130	0.148	40	
Chloromethane	8.58	4.92	"	19.7	ND	43.6	57.5-121	2.24	40	M2
cis-1,2-Dichloroethene	20.3	4.92	"	19.7	ND	103	70-130	3.67	40	
cis-1,3-Dichloropropene	14.4	4.92	"	19.7	ND	73.0	70-130	5.29	40	
Dibromochloromethane	18.3	4.92	"	19.7	ND	93.1	67.2-125	6.80	40	
Ethylbenzene	19.0	4.92	"	19.7	ND	96.6	70-130	9.75	40	
m,p-Xylene	36.9	4.92	"	39.4	ND	93.8	63.9-131	7.96	40	
Methylene chloride	21.1	4.92	"	19.7	ND	107	74.2-144	1.77	40	
o-Xylene	18.7	4.92	"	19.7	ND	95.2	60.7-129	4.98	40	
Styrene	7.64	4.92	"	19.7	ND	38.8	10.5-158	19.5	40	
Tetrachloroethene	17.5	4.92	"	19.7	ND	88.7	70-130	9.00	40	
Toluene	16.6	4.92	"	19.7	ND	84.3	70-130	4.79	40	
trans-1,2-Dichloroethene	21.7	4.92	"	19.7	ND	110	71.7-144	0.484	40	
trans-1,3-Dichloropropene	12.8	4.92	"	19.7	ND	64.9	65-115	9.40	40	M2
Trichloroethene	18.1	4.92	"	19.7	ND	92.1	70-130	1.06	40	
Vinyl acetate	12.8	9.84	"	19.7	ND	64.9	55-132	2.26	40	
Vinyl chloride	14.3	4.92	"	19.7	ND	72.4	65-127	1.36	40	

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Environmental Management Services	Project: SVE Pilot Drilling	
PO Box 15369	Project Number: [none]	**Reported:**
Hattiesburg MS, 39404-5369	Project Manager: Chris Johnson	05/07/12 09:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2E04015 - EPA 5035										
Matrix Spike Dup (2E04015-MSD3)	**Source: 1204405-02**						***Prepared: 05/02/12 Analyzed: 05/03/12***			
Surrogate: Dibromofluoromethane	*56.5*		*ug/kg*	*50.0*		*113*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*52.2*		*"*	*50.0*		*104*	*70-130*			
Surrogate: Toluene-d8	*51.0*		*"*	*50.0*		*102*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*50.8*		*"*	*50.0*		*102*	*70-130*			

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05/07/12 09:41

Certified Analyses Included in this Report

Analyte	Certification Code
EPA 8260B in Soil	
1,1,1,2-Tetrachloroethane	C01,C02
1,1,1-Trichloroethane	C01,C02
1,1,2,2-Tetrachloroethane	C01,C02
1,1,2-Trichloroethane	C01,C02
1,1,2-Trichlorotrifluoroethane	C01,C02
1,1-Dichloroethane	C01,C02
1,1-Dichloroethene	C01,C02
1,1-Dichloropropene	C01,C02
1,2,3-Trichlorobenzene	C01,C02
1,2,3-Trichloropropane	C01,C02
1,2,4- Trimethylbenzene	C01,C02
1,2,4-Trichlorobenzene	C01,C02
1,2-Dibromo-3-chloropropane	C01,C02
1,2-Dibromoethane (EDB)	C01,C02
1,2-Dichlorobenzene	C01,C02
1,2-Dichloroethane	C01,C02
1,2-Dichloropropane	C01,C02
1,3,5-Trimethylbenzene	C01,C02
1,3-Dichlorobenzene	C01,C02
1,3-Dichloropropane	C01,C02
1,4-Dichlorobenzene	C01,C02
1,4-Dioxane	C01,C02
2,2-Dichloropropane	C01,C02
2-Butanone	C01,C02
2-Chloroethylvinyl ether	C01,C02
2-Chlorotoluene	C01,C02
2-Hexanone	C01,C02
4-Chlorotoluene	C01,C02
4-Isopropyltoluene	C01,C02
4-Methyl-2-pentanone	C01,C02
Acetone	C01,C02
Acrolein	C01,C02
Acrylonitrile	C01,C02
Benzene	C01,C02
Bromobenzene	C01,C02
Bromochloromethane	C01,C02
Bromodichloromethane	C01,C02
Bromoform	C01,C02
Bromomethane	C01,C02
Carbon disulfide	C01,C02
Carbon Tetrachloride	C01,C02

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Chlorobenzene	C01,C02
Chloroethane	C01,C02
Chloroform	C01,C02
Chloromethane	C01,C02
cis-1,2-Dichloroethene	C01,C02
cis-1,3-Dichloropropene	C01,C02
cis-1,4-Dichloro-2-butene	C01,C02
Dibromochloromethane	C01,C02
Dibromomethane	C01,C02
Dichlorodifluoromethane	C01,C02
Diethyl ether	C01,C02
Ethylbenzene	C01,C02
Hexachlorobutadiene	C01,C02
Hexane	C01,C02
Iodomethane	C01,C02
Isobutanol	C01,C02
Isopropylbenzene	C01,C02
m,p-Xylene	C01,C02
Methyl Acrylate	C01,C02
Methyl tert-Butyl Ether	C01,C02
Methylene chloride	C01,C02
Naphthalene	C01,C02
n-Butylbenzene	C01,C02
n-Propyl Benzene	C01,C02
o-Xylene	C01,C02
sec-Butyl Benzene	C01,C02
Styrene	C01,C02
t-Butyl Benzene	C01,C02
Tert-butyl alcohol	C01,C02
Tetrachloroethene	C01,C02
Tetrahydrofuran	C01,C02
Toluene	C01,C02
trans-1,2-Dichloroethene	C01,C02
trans-1,3-Dichloropropene	C01,C02
trans-1,4-Dichloro-2-butene	C01,C02
Trichloroethene	C01,C02
Trichlorofluoromethane	C01,C02
Vinyl acetate	C01,C02
Vinyl chloride	C01,C02

EPA 8260B in Water

1,1,1,2-Tetrachloroethane	C01,C02
1,1,1-Trichloroethane	C01,C02
1,1,2,2-Tetrachloroethane	C01,C02
1,1,2-Trichloroethane	C01,C02
1,1,2-Trichlorotrifluoroethane	C01,C02
1,1-Dichloroethane	C01,C02

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services	Project: SVE Pilot Drilling	
PO Box 15369	Project Number: [none]	**Reported:**
Hattiesburg MS, 39404-5369	Project Manager: Chris Johnson	05/07/12 09:41

1,1-Dichloroethene	C01,C02
1,1-Dichloropropene	C01,C02
1,2,3-Trichlorobenzene	C01,C02
1,2,3-Trichloropropane	C01,C02
1,2,4- Trimethylbenzene	C01,C02
1,2,4-Trichlorobenzene	C01,C02
1,2-Dibromo-3-chloropropane	C01,C02
1,2-Dibromoethane (EDB)	C01,C02
1,2-Dichlorobenzene	C01,C02
1,2-Dichloroethane	C01,C02
1,2-Dichloropropane	C01,C02
1,3,5-Trimethylbenzene	C01,C02
1,3-Dichlorobenzene	C01,C02
1,3-Dichloropropane	C01,C02
1,4-Dichlorobenzene	C01,C02
1,4-Dioxane	C01,C02
2,2-Dichloropropane	C01,C02
2-Butanone	C01,C02
2-Chloroethylvinyl ether	C01,C02
2-Chlorotoluene	C01,C02
2-Hexanone	C01,C02
2-Methyl-1,3 Dioxolane (MDO)	C01,C02
4-Chlorotoluene	C01,C02
4-Isopropyltoluene	C01,C02
4-Methyl-2-pentanone	C01,C02
Acetone	C01,C02
Acrolein	C01,C02
Acrylonitrile	C01,C02
Benzene	C01,C02
Bromobenzene	C01,C02
Bromochloromethane	C01,C02
Bromodichloromethane	C01,C02
Bromoform	C01,C02
Bromomethane	C01,C02
Carbon disulfide	C01,C02
Carbon Tetrachloride	C01,C02
Chlorobenzene	C01,C02
Chloroethane	C01,C02
Chloroform	C01,C02
Chloromethane	C01,C02
cis-1,2-Dichloroethene	C01,C02
cis-1,3-Dichloropropene	C01,C02
cis-1,4-Dichloro-2-butene	C01,C02
Dibromochloromethane	C01,C02
Dibromomethane	C01,C02
Dichlorodifluoromethane	C01,C02

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services	Project: SVE Pilot Drilling	
PO Box 15369	Project Number: [none]	**Reported:**
Hattiesburg MS, 39404-5369	Project Manager: Chris Johnson	05/07/12 09:41

Diethyl ether	C01,C02
Ethylbenzene	C01,C02
Hexachlorobutadiene	C01,C02
Hexane	C01,C02
Iodomethane	C01,C02
Isobutanol	C01,C02
Isopropylbenzene	C01,C02
m,p-Xylene	C01,C02
Methyl Acrylate	C01,C02
Methyl tert-Butyl Ether	C01,C02
Methylene chloride	C01,C02
Naphthalene	C01,C02
n-Butylbenzene	C01,C02
n-Propyl Benzene	C01,C02
o-Xylene	C01,C02
sec-Butyl Benzene	C01,C02
Styrene	C01,C02
t-Butyl Benzene	C01,C02
Tert-butyl alcohol	C01,C02
Tetrachloroethene	C01,C02
Tetrahydrofuran	C01,C02
Toluene	C01,C02
trans-1,2-Dichloroethene	C01,C02
trans-1,3-Dichloropropene	C01,C02
trans-1,4-Dichloro-2-butene	C01,C02
Trichloroethene	C01,C02
Trichlorofluoromethane	C01,C02
Vinyl acetate	C01,C02
Vinyl chloride	C01,C02

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services
PO Box 15369
Hattiesburg MS, 39404-5369

Project: SVE Pilot Drilling
Project Number: [none]
Project Manager: Chris Johnson

Reported:
05/07/12 09:41

Laboratory Accreditations/Certifications

Code	Description	Number	Expires
C01	La Environmental Lab Accreditation Program	01960	06/30/2012
C02	National Environmental Lab Accreditation Program		06/30/2012
C03	Ms Dept of Health (Coliform)	MS00007	11/30/2012
C04	Ms Dept of Health (Drinking Water Certificate)	MS00021-2009	12/31/2012
C05	Ms DEQ Lead Firm Certification	PBF-00000028	10/18/2012
C06	MsDEQ Asbestos Inspector : C.D. Bingham	ABI-00001348	04/21/2012
C07	MsDEQ Air Monitor : C.D. Bingham	AM-011572	04/20/2012
C08	MsDEQ Asbestos Inspector: C. W. Meins	ABI-00001821	09/22/2012
C09	MsDEQ Air Monitor : C.W. Meins	AM-011189	04/20/2012
C12	MsDEQ Asbestos Inspector : H.P. Howell	ABI-00001345	04/21/2012
C13	MsDEQ Air Monitor: H.P. Howell	ABM-00001344	04/20/2012

Report Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the minimum reporting limit
NR	Not Reported
RPD	Relative Percent Difference
ICV	Initial Calibration Verfiication
CCV	Continuing Calibration Verification Standard
SSV	Secondary Source Verfication Standard
LCS	Lab Control Spike - Lab matrix prepared with known concentration of analyte/s of interest analyzed by method.
MS	Matrix Spike - Sample prepared with known concentration of analyte/s of interest analyzed by method.
MSD	Matrix Spike Duplicate - Duplicate sample prepared with known concentration of anlayte/s of interest analyzed by method.
MRL	Minimum Reporting Limit
%REC	Percentage Recovery of known concentration added to matrix
Batch	Group of samples prepared for analysis not to exceed 20 samples.
Matrix	Material containing analyte/s of interest
Surrogate	Analyte added to sample to determine extraction efficiency of method.

client cooler

Micro-Methods Lab, Inc.
6500 Sunplex Drive, Ocean Springs, MS 39564
Ph: 228-875-6420 • Fax: 228-875-6423
www.micromethodslab.com

Chain of Custody / Analysis Request Form

Print ALL Information. Put N/A in blanks not applicable

Field pH: Tech: ST Time: 1347
Field Temperature: temp blank
Iced: (Yes) No
Sample Receipt Temperature: 0.9°C #3

REPORT RESULTS TO:	SEND INVOICE TO:	TURNAROUND TIME
Company: EMS	Company: EMS PO#: KUHB-11-006	Date Results needed by:
Name: CHRIS JOHNSON	Name: SAME	Standard turnaround time is 10 working days ☑
Address P.O. Box 15369	Address	The following turnaround times require lab approval:
City HATTIESBURG	City	☐ 7-10 days ☐ 72 Hrs ☐ 48 Hrs
State MS ZIP	State ZIP	☐ 24 Hrs Approved by
TEL: 601-544-3674 FAX:	TEL: FAX:	
Sampled by: (Signature) [signature] (Print) CHRIS T. JOHNSON	Project Name: SVE PILOT DRILLING	Date of Sample Shipment: 4/23/12

Failure to complete shaded areas will hinder processing of samples.

Sample Number	For Lab Use Only	Station Location / Sample ID (WO# 1204322)	DATE	TIME	COMP	GRAB	8260 VOC's	1,4-DIOXANE											# CONTAINERS
1.		SVE-EXT-DEEP-6'	4/21/12	1100		X	X	X											5
2.		SVE-EXT-DEEP-30'	↓	1130		X	↓	↓											5
3.		SVE-OBS-DEEP-01-6' CVO	↓	1400		X	↓	↓											5
4.		SVE-OBS-DEEP-01-30'	↓	1450		X	↓	↓											5
5.		SVE-OBS-DEEP-02-6'	↓	1815		X	↓	↓											5
6.		SVE-OBS-DEEP-02-26'	↓	1900		X	↓	↓											5
7.		SVE-OBS-DEEP-02-66'	↓	1940		X	↓	↓											5
8.		SVE-OBS-DEEP-03-6'	4/22/12	1000		X	↓	↓											5
9.		SVE-OBS-DEEP-03-66'	↓	1030		X	↓	↓											5
10.		SVE-OBS-DEEP-04-2'	↓	1130		X	↓	↓											5

Released By Signature	Date & Time Released	Received By Signature	Date & Time Received	Please indicate reporting requirements:
[signature]		[signature]		☐ 1. Results Only (EPA Level I)
Printed Name CHRIS T. JOHNSON	4/23/12 1050	Printed Name C. W. Russell	4/23/12 1050	☑ 2. Results & QC (EPA Level II)
Released By Signature [signature]	Date & Time Released	Received By Signature [signature]	Date & Time Received 4/23/12	☐ 3. Results, QC and Raw Data (EPA Level III)
Printed Name C.W. Russell	4/23/12 1350	Printed Name Sarah Tomek	1350	

client cooler

Micro-Methods Lab, Inc.
6500 Sunplex Drive, Ocean Springs, MS 39564
Ph: 228-875-6420 • Fax: 228-875-6423
www.micromethodslab.com

Chain of Custody / Analysis Request Form

Print ALL Information. Put N/A in blanks not applicable

Field pH: Tech: ST Time: 1347
Field Temperature: tempblank
Iced: (Yes) No
Sample Receipt Temperature: 0.9°C T#3

REPORT RESULTS TO:	SEND INVOICE TO:	TURNAROUND TIME
Company: EMS	Company: EMS PO#: KUH0-11-006	Date Results needed by:
Name: CHRIS JOHNSON	Name: SAME	Standard turnaround time is 10 working days ☑
Address ~~1338~~ P.O. Box 15369	Address	The following turnaround times require lab approval:
City HATTIESBURG	City	❒ 7-10 days ❒ 72 Hrs ❒ 48 Hrs
State MS ZIP 39404	State ZIP	❒ 24 Hrs Approved by
TEL: 601-544-3674 FAX:	TEL: FAX:	
Sampled by: (Signature) [signature] (Print) CHRIS F. JOHNSON	Project Name: SVE PILOT DRILLING	Date of Sample Shipment: 4/23/12

Failure to complete shaded areas will hinder processing of samples.

WO# 1204328

For Lab Use Only Sample Number	Station Location / Sample ID	DATE	TIME	Sampling COMP	Sampling GRAB	8260 VOCs	1,4-Dioxane										# CONTAINERS
1.	SVE-OBS-DEEP-04-54'	4/22/12	1200		X												~~1~~ 1ST
2.	TBU 4050																
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

ACKD

Released By Signature	Date & Time Released	Received By Signature	Date & Time Received	Please indicate reporting requirements:
[signature]		[signature]		❒ 1. Results Only (EPA Level I)
Printed Name CHRIS F. JOHNSON	4/23/12 1050	Printed Name C.W. Russell	4/23/12 1050	☑ 2. Results & QC (EPA Level II)
Released By Signature [signature]	Date & Time Released	Received By Signature [signature]	Date & Time Received 4/23/12	❒ 3. Results, QC and Raw Data (EPA Level III)
Printed Name 4/23/12 C.W. Russell	4/23/12 1350	Printed Name Sarah Tomek	1350	

MICRO-METHODS LABORATORY, INC.

6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services	Project: SVE Pilot Drilling	
PO Box 15369	Project Number: [none]	**Reported:**
Hattiesburg MS, 39404-5369	Project Manager: Chris Johnson	05/07/12 09:41

Volatiles 36

	Compound Name
1	1,1,1-Trichloroethane
2	1,1,2,2-Tetrachloroethane
3	1,1,2-Trichloroethane
4	1,1-Dichloroethane
5	1,1-Dichloroethene
6	1,2-Dichloroethane
7	1,2-Dichloropropane
8	2-Butanone (MEK)
9	2-Hexanone
10	4-Methyl-2-Pentanone (MIBK)
11	Acetone
12	Benzene
13	Bromodichloromethane
14	Bromoform
15	Bromomethane
16	Carbon Disulfide
17	Carbon Tetrachloride
18	Chlorobenzene
19	Chloroethane
20	Chloroform
21	Chloromethane
22	Cis-1,2-Dichloroethene
23	Cis-1,3-Dichloropropene
24	Dibromochloromethane
25	Ethylbenzene
26	M&P-Xylene (Meta & Para)
27	Methylene Chloride
28	O-Xylene (Ortho)
29	Styrene
30	Tetrachloroethene
31	Toluene
32	Trans-1,2-Dichloroethene
33	Trans-1,3-Dichloropropene
34	Trichloroethene
35	Vinyl Acetate
36	Vinyl Chloride

+ 1,4-Dioxane

Can add compounds to this list from the FULL list if needed (Contact for pricing)

6500 Sunplex Drive
Ocean Springs, MS 39564
228-875-6420 Phone
228-875-6423 Fax

Environmental Management Services	Project: SVE Pilot Drilling	
PO Box 15369	Project Number: [none]	Reported:
Hattiesburg MS, 39404-5369	Project Manager: Chris Johnson	05/07/12 09:41

Issue Date: 7/18/11 Implementation Date: 7/18/11	**Micro-Methods Laboratory Log-In Checklist**	DCN: F207 Date Revised: 7-18-11 Revision: 4

Client EMS **WO** 1204322 **Shipped By** client
Date/Time Received 4/23/12 1350 **Unpacked/Checked By** ST

Cooler ID	Ice Present Yes/No	Temperature	Thermometer ID	Custody Sealed Yes/No	Custody Seal Intact Yes/No
client	yes	0.9°C	T#3	no	n/a

If not iced, were samples received within one hour of collection? Yes ___ No ___ N/A X
Temperature Blank Used Yes X No ___ If not, temperature taken from cooler ___ or bottle ___
Multi Cooler shipment: ID of samples in coolers that exceed 6°C ___

Custody Seals on Bottles Present Yes ___ No X
Containers Intact Yes X No ___
Proper Containers for Requested Analysis Yes X No ___

Correct Preservation Used for All Samples Yes X No ___
Adequate Sample for Analysis Requested Yes X No ___

Volatile Vials Headspace Greater than 6mm in Diameter Yes ___ No X N/A ___

Chain of Custody Form Included Yes X No ___
Chain of Custody Form Complete Yes X No ___
Chain of Custody Form Properly Relinquished Yes X No ___
Field Sheets/Special Instructions Included Yes ___ No ___ N/A X
Samples Missing on COC or From Cooler Yes ___ No X
Sample Container Labels Match COC Yes X No ___

Samples Received Within Holding Time Yes X No ___
Dept. Manager Notified of Rush/Short Holding Times Yes ___ No ___ N/A X

Does work order meet Micro Methods sample acceptance criteria Yes X No ___
Note: Samples that do not meet acceptance criteria must be documented in the Sample Rejection Log.

Client Contacted ___ **Contacted By** ___ **Date/Time** ___
Client Instructions: Cancel Work Order ___
Proceed with Work Order ___ **(Data will be qualified)**
Comments: Sample three listed on COC had incomplete ID listed. used label ID. 2 vials on sample 1D not listed on COC. ER

Controlled Document

APPENDIX D

GEOCON Laboratories, Inc.

P. O. Box 16371 • 104 N. 12th Avenue • Hattiesburg, MS 39404 Phone (601) 544-TEST (8378) • Fax (601) 545-TEST (8378)

Hydraulic Conductivity of Saturated Porous Materials - ASTM D5084

Project SVE Pilot and Install
KUHO-11-006

Our Project No. H-0005.09

Report Date 6/26/2012

Client EMS

Reported to EMS

Test Method: Method C
Sample Type: Remolded

Permeant: De-Aired Tap Water
Project Requirements, Permeability N/A

Sample No.	Date Sampled	Date Tested	Location	Depth	Sample Length, cm	Sample Diameter, cm	In-Place Moisture	Wet weight, lbs./ft.³	Dry weight, lbs./ft.³	Plasticity Index	Permeability, cm/sec.
12-087-1	5/22/12	6/20/12	Combination of OBS & EXT	0'-8'	10.10	7.13	18.5%	129.2	109.0	14	3.41E-07
12-087-2	5/22/12	6/18/12	Combination of OBS & EXT	8'-28'	10.10	7.11	12.4%	133.0	118.3	NP	4.43E-05

Notes

GeoCon Laboratories, Inc.

GEOCON Laboratories, Inc.

P. O. Box 16371 • 104 N. 12th Ave. • Hattiesburg, MS 39404 Phone (601) 544-TEST (8378) • Fax (601) 545-TEST (8378)

Permeability of Granular Soils - ASTM D2434

Project SVE Pilot and Install
KUHO-11-006

Project No. 005.09

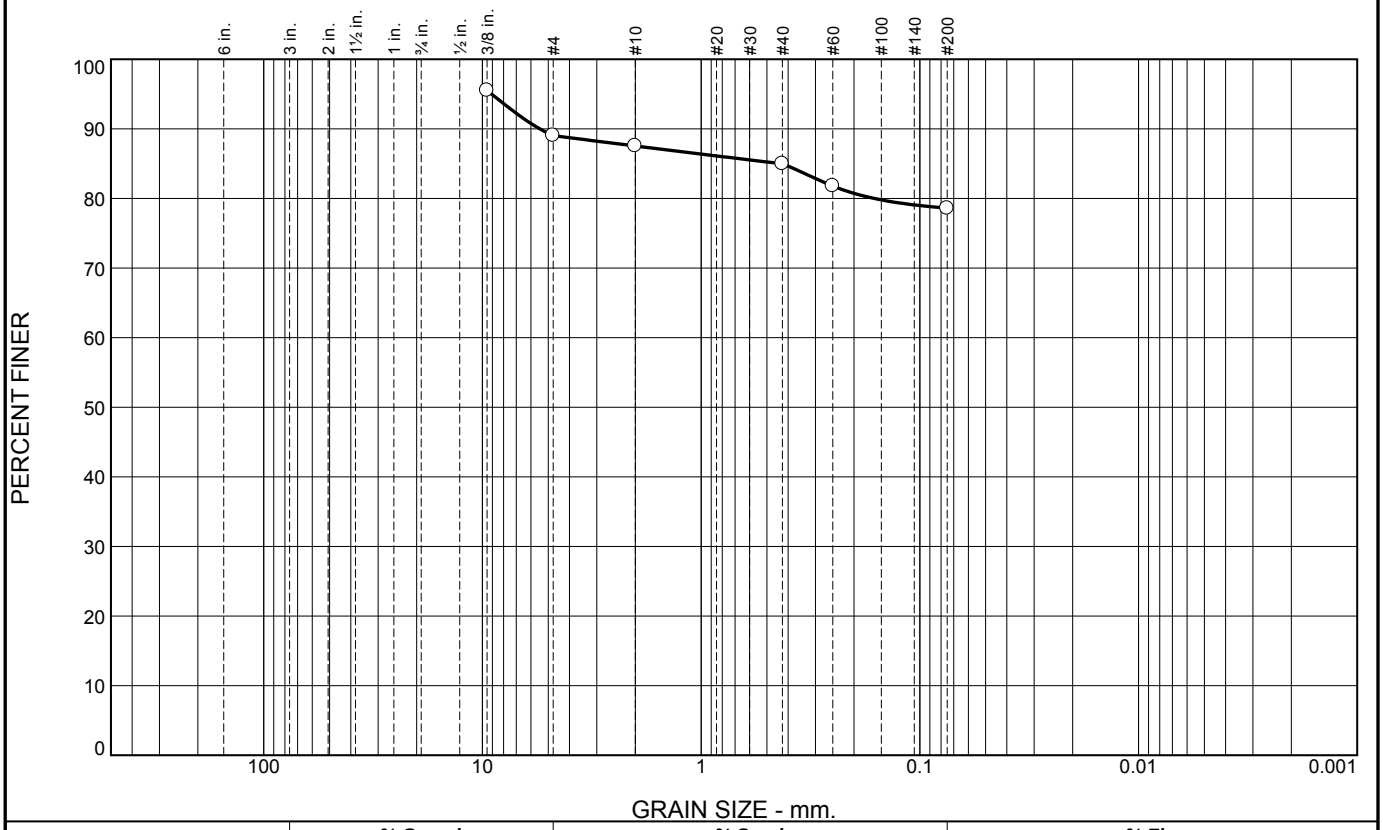
Report Date 6/13/12

Client EMS

Sample No.	Date Sampled	Date Tested	Location	Depth	Dry Unit Wt., Lb./ft.^{3}	Permeability, cm/second
12-087-4	5/22/12	6/11/12	SVE-OBS-DEEP-03	28-68'	99.3	1.45E-02
12-087-5	5/22/12	6/12/12	SVE-EXT-DEEP	40-72'	98.0	1.01E-02

Notes

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
			1	3	6	79	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	96		
#4	89		
#10	88		
#40	85		
#60	82		
#200	79		

* (no specification provided)

Material Description

Brown lean clay with gravel

Atterberg Limits

PL= 19 LL= 33 PI= 14

Coefficients

D_{90}= 5.4674 D_{85}= 0.4293 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(10)

Remarks

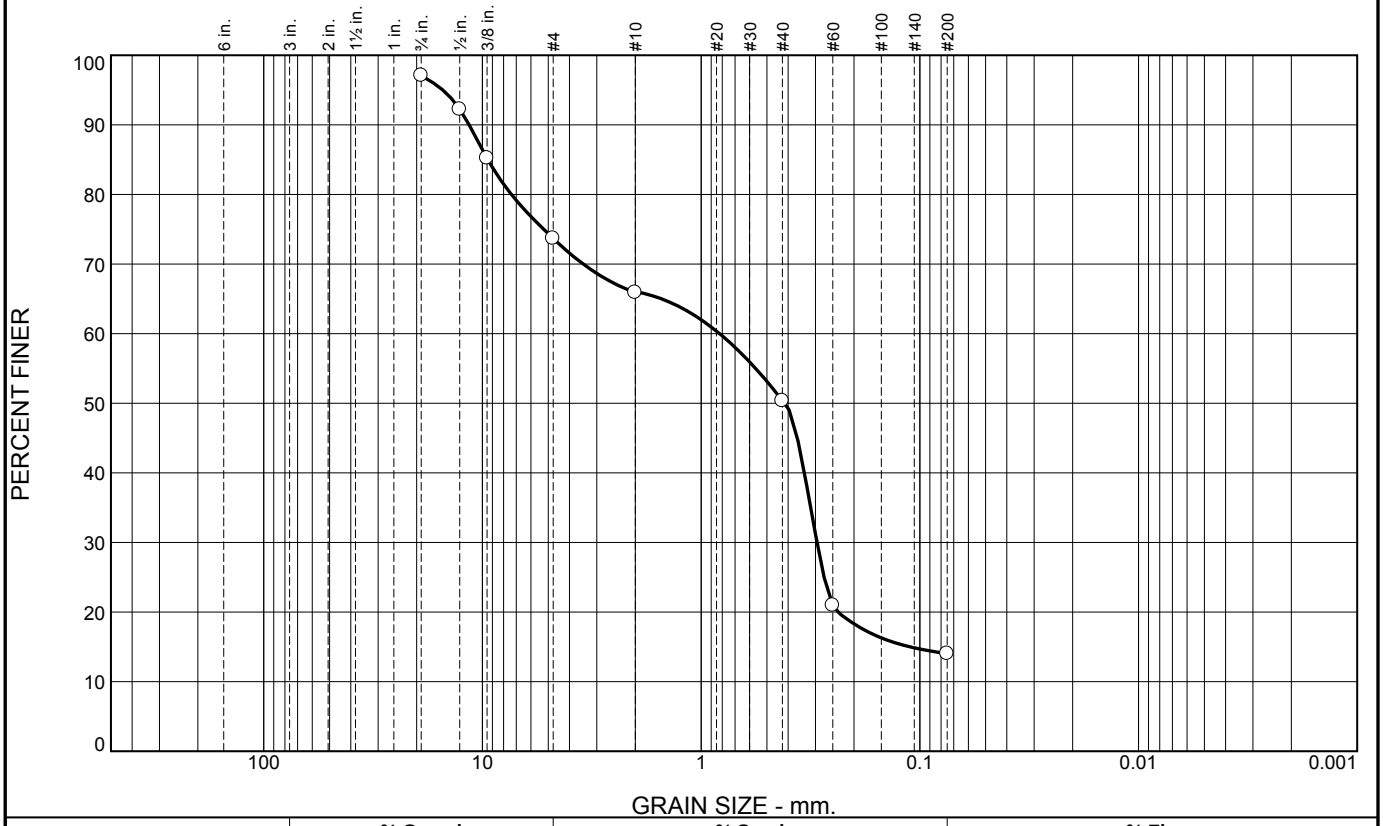
Combination of samples from SVE-DEEP-03 & SVE-EXT-DEEP

Source of Sample: SVE-OBS-DEEP-03 & SVE-EXT-DEEP **Depth:** 0-8
Sample Number: 087-1 **Date:**

GeoCon Laboratories, Inc.
Hattiesburg, MS

Client: EMS
Project: SVE Pilot Design and Install
KUHO-11-006
Project No: 0005.09 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
		23	8	16	36	14	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	97		
1/2"	92		
3/8"	85		
#4	74		
#10	66		
#40	50		
#60	21		
#200	14		

* (no specification provided)

Material Description

Red silty sand with gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 11.5065 D_{85}= 9.4421 D_{60}= 0.8231
D_{50}= 0.4146 D_{30}= 0.2953 D_{15}= 0.1104
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-1-b

Remarks

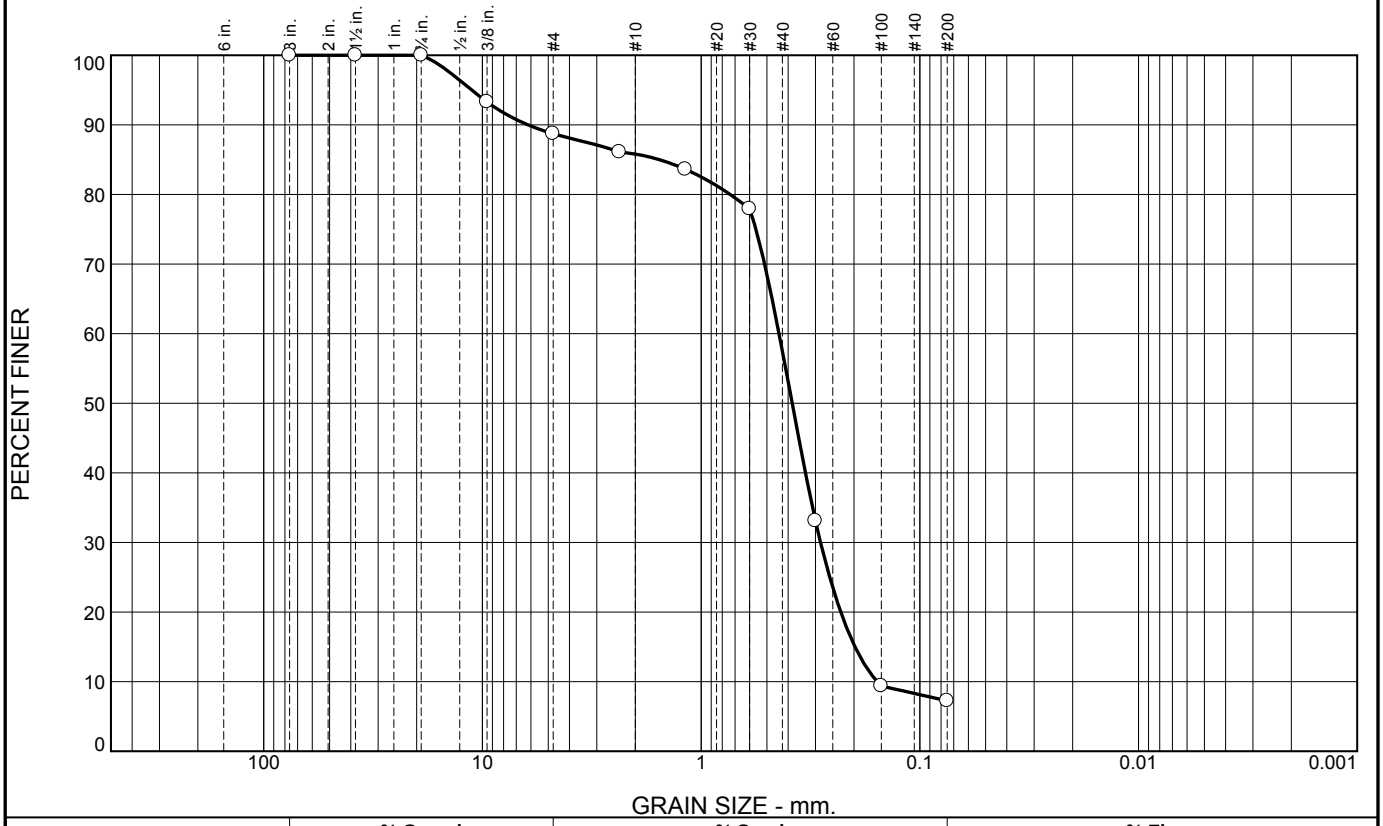
Combination of samples from SVE-DEEP-03 & SVE-EXT-DEEP

Source of Sample: SVE-OBS-DEEP-03 & SVE-EXT-DEEP **Depth:** 8-28
Sample Number: 087-2 **Date:**

GeoCon Laboratories, Inc.
Hattiesburg, MS

Client: EMS
Project: SVE Pilot Design and Install
KUHO-11-006
Project No: 0005.09 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	11	3	29	50	7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100		
1.5	100		
.75	100		
.375	93		
#4	89		
#8	86		
#16	84		
#30	78		
#50	33		
#100	9		
#200	7.3		

* (no specification provided)

Material Description

Grayish brown poorly graded sand with silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 6.1947 D_{85}= 1.5538 D_{60}= 0.4403
D_{50}= 0.3834 D_{30}= 0.2844 D_{15}= 0.1978
D_{10}= 0.1566 C_u= 2.81 C_c= 1.17

Classification

USCS= SP-SM AASHTO= A-3

Remarks

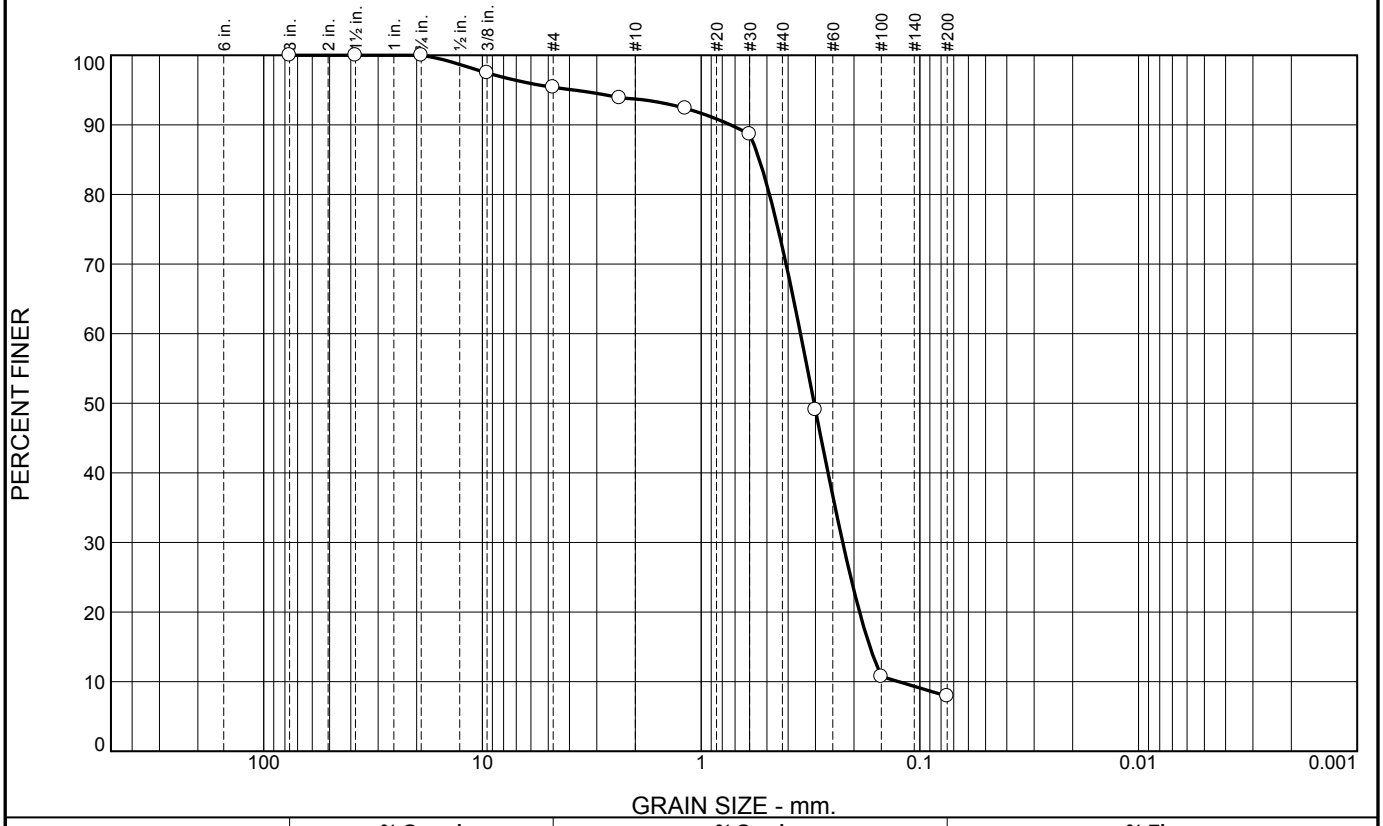
Combination of all samples from 28'-68'

Source of Sample: SVE-OBS-DEEP-03 **Depth:** 28-68
Sample Number: 12-087-4 **Date:**

GeoCon Laboratories, Inc.
Hattiesburg, MS

Client: EMS
Project: SVE Pilot Design and Install
KUHO-11-006
Project No: 0005.09 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	5	1	22	64	8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3	100		
1.5	100		
.75	100		
.375	97		
#4	95		
#8	94		
#16	92		
#30	89		
#50	49		
#100	11		
#200	7.9		

* (no specification provided)

Material Description

Brownish gray poorly graded sand with silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.7341 D_{85}= 0.5418 D_{60}= 0.3513
D_{50}= 0.3041 D_{30}= 0.2252 D_{15}= 0.1691
D_{10}= 0.1247 C_u= 2.82 C_c= 1.16

Classification

USCS= SP-SM AASHTO= A-3

Remarks

Combination of samples from 40'-72'

Source of Sample: SVE-EXT-DEEP **Depth:** 40-72
Sample Number: 12-087-5 **Date:**

GeoCon Laboratories, Inc.
Hattiesburg, MS

Client: EMS
Project: SVE Pilot Design and Install
KUHO-11-006
Project No: 0005.09 **Figure**

APPENDIX E

ENVIRONMENTAL
Analytical Service Inc.

May 29, 2012
Sample Delivery Groups (SDG): 212213

Ethan Allen
Environmental Management Services
7350 Highway 98
Hattiesburg, MS 39402

Dear Ethan,

Enclosed is the analytical data for the samples received and analyzed by Environmental Analytical Service, Inc. for the following project:

Project Name:	KEC SVE PILOT
Project Number:	KVH0-11-006
Sample Date:	5/12/12 & 5/13/12

The report consists of the following sections:

I. Sample Description
II. Laboratory Narrative and Chain of Custody Forms
III. Laboratory Certification
IV. Quality Control Reports
V. Analytical Results

If you have any questions on the report or the analytical data please contact me at (805) 781-3585.

Sincerely,

Steven D. Hoyt Ph.D.
Laboratory Director

COPY: Tom Card/Environmental Management Consulting

SDH/lims

Analytical Report

SDG Number: 212213 **Project Number:** 16397

Client: Environmental Management Services **Received:** 5/15/2012

I. SAMPLE DESCRIPTION AND ANALYSIS REQUESTED

Client Sample No.	EAS Lab No.	Analysis Requested	Date Sampled
SVE-SP15-03	212213 1	EPA TO15 Volatile Organics	5/13/2012
SVE-OBS-DEEP-40'-POST	212213 2	EPA TO15 Volatile Organics	5/13/2012
SVE-SP15-04	212213 3	EPA TO15 Volatile Organics	5/13/2012
SVE-Areal-051312	212213 4	EPA TO15 Volatile Organics	5/13/2012
SVE CARBON-POSF01	212213 5	EPA TO15 Volatile Organics	5/12/2012
SVE-EXT-SHAL-POST	212213 6	EPA TO15 Volatile Organics	5/12/2012
SVE-SP15-02	212213 7	EPA TO15 Volatile Organics	5/12/2012
SVE-SP15-01	212213 8	EPA TO15 Volatile Organics	5/12/2012
SVE-OBS-SHAL-40'-PRE	212213 9	EPA TO15 Volatile Organics	5/12/2012
SVE-AREA 1-051212	212213 10	EPA TO15 Expanded SIM List	5/12/2012
SVE-AREA 1-051212	212213 10	EPA TO15 Volatile Organics	5/12/2012
SVE-AREA 2-051212	212213 11	EPA TO15 Expanded SIM List	5/12/2012
SVE-AREA 2-051212	212213 11	EPA TO15 Volatile Organics	5/12/2012
SVE-OBS-SHAL-40'-POST	212213 12	EPA TO15 Volatile Organics	5/12/2012
SVE-EXT-DEEP-PRE	212213 13	EPA TO15 Volatile Organics	5/12/2012
SVE-SP15-PRE	212213 14	EPA TO15 Volatile Organics	5/12/2012
SVE-EXT-SHAL-PRE	212213 15	EPA TO15 Volatile Organics	5/12/2012
SVE-OBS-DEEP-40'-PRE	212213 16	EPA TO15 Volatile Organics	5/13/2012
SVE-EXT-DEEP-POST	212213 17	EPA TO15 Volatile Organics	5/13/2012
SVE-AREA 2-51312	212213 18	EPA TO15 Expanded SIM List	5/13/2012
SVE-AREA 2-51312	212213 18	EPA TO15 Volatile Organics	5/13/2012
SVE-CARBON-POST-02	212213 19	EPA TO15 Volatile Organics	5/13/2012
Can # 318	212213 20	DO NOT ANALYZE-UNUSED	

II. LABORATORY CASE NARRATIVE and CHAIN OF CUSTODY FORMS

SDG Numbers: 212213
Analysis performed for: Environmental Management Services

III. LABORATORY CERTIFICATION

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the condition noted above.

Steven D. Hoyt Ph.D.
Laboratory Director

AN SBPA

MPS# 7983 9291 4757

ENVIRONMENTAL
Analytical Service, Inc.

173 Cross Street
San Luis Obispo, CA
93401 - 7597
805.781.3585
Fax 805.541.4550

CHAIN OF CUSTODY RECORD

N_2

Project Number: KUH 0 11-006 | Project Name: KEC SVE Pilot | Quote Number:

REPORT TO:

Company: EMS
Address: P.O. Box 15369
City/State/Zip: Hattiesburg MS 39404
Phone: 601 544 3674 (FAX) 601 544 0504
ATTENTION: Chris Johnson

MATRIX LEGEND
A - Ambient Air, Low Level
I - Indoor Air
S - Source Air, High Level
G - Gas/Product

SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	CANISTER NUMBER	COMP	GRAB	MATRIX A	MATRIX I	MATRIX S	MATRIX G	INITIAL PRESSURE	FINAL PRESSURE	EAS LABORATORY ID	ANALYTICAL TESTS: VOC's + 1,4-Dioxane			P_1	P_2	Leak	REMARKS
SVE-SP15-03	5/13/12	10:20	356		X			X		-30	0	21213-01	X			738	978	I	
SVE-OBS-Deep-40'-04	5/13/12	14:40	363		X			X		-30	0	21213-02	X			738	960	I	
SVE-SP15-04	5/13/12	13:32	323		X			X		-30	0	-03	X			738	998	I	
SVE-Area1-051312	5/13/12	8:28	935		X			X		-30	0	-04	X			315	984	I	

COMMENTS: FC Returned #2508

BILLING INFORMATION

Company: EMS
Address: P.O. Box 15369
City/State/Zip: Hattiesburg MS 39404
ATTENTION: Chris Johnson
Purchase Order/Billing Reference: Kuh 0-11-006

SAMPLED BY:	Date	Time	Received by:	Date	Time
Relinquished By:	5/13/12		Received by:		
Relinquished By:			Received by:		
Relinquished By:			Received for lab by:	5/15/12	9:30am

ENVIRONMENTAL
Analytical Service, Inc.

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San Luis Obispo, CA
93401 - 7597
805.781.3585
Fax 805.541.4550

Tracking MPS# 7983 9271 4780
ANSBPA

CHAIN OF CUSTODY RECORD

Project Number: KUH0-11-006 | Project Name: KEC SVE PILOT | Quote Number:

REPORT TO:

Company: EMS
Address: PO Box 15369
City/State/Zip: HATTIESBURG MS 39404
Phone: 601-544-3674 (FAX) 601-544-0504
ATTENTION: CHRIS JOHNSON

MATRIX LEGEND: A - Ambient Air, Low Level; I - Indoor Air; S - Source Air, High Level; G - Gas/Product

SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	CANISTER NUMBER	COMP	GRAB	MATRIX A	MATRIX I	MATRIX S	MATRIX G	INITIAL PRESSURE	FINAL PRESSURE	EAS LABORATORY ID	VOC's + 1,4-Dioxane TO-15 Full	ANALYTICAL TESTS				REMARKS
													NA	P_1	P_2	Shelf		
SVE CARBON-POST-01	~~1900~~ 5/12/12 CT	1900	319		X			X		-30	Ø	212213-05	X	740	973	R		
SVE-EXT-SHAL-POST	5/12/12	1925	305		X			X		-30	Ø	-06	X	731	966	R		
SVE-SPLS-02	5/12/12	1738	315		X			X		-30	Ø	-07	X	758	974	R		
SVE-SPLS-01	5/12/12	1242	316		X			X		-30	Ø	-08	X	700	967	R		

COMMENTS

BILLING INFORMATION

Company: EMS
Address: PO Box 15369
City/State/Zip: HATTIESBURG MS 39484
ATTENTION: CHRIS JOHNSON
Purchase Order/Billing Reference: KUH0-11-006

	Date	Time		Date	Time
SAMPLED BY:	5/12/12		Received by:		
Relinquished By:	5/14/12	1130	Received by:		
Relinquished By:			Received by:		
Relinquished By:			Received for lab by:	5/15/12	9:30 am

AN SBPA MPS # 7983 9271 4654

ENVIRONMENTAL
Analytical Service, Inc.

173 Cross Street
San Luis Obispo, CA
93401 - 7597
805.781.3585
Fax 805.541.4550

CHAIN OF CUSTODY RECORD

Project Number	Project Name	Quote Number:
KUH0-11-006	KEC SVE PILOT	

REPORT TO:

Company EMS
Address PO Box 15369
City/State/Zip HATTIESBURG MS 39404
Phone 601-544-3674 (FAX) 601-544-0504
ATTENTION Chris Johnson

MATRIX LEGEND: A = Ambient Air (Low Level); I = Indoor Air; S = Source Air (High Level); G = Gas (Petrol)

SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	CANISTER NUMBER	COMP	GRAB	MATRIX A	MATRIX I	MATRIX S	MATRIX G	INITIAL PRESSURE	FINAL PRESSURE	LAB SAMPLE ID	ANALYTICAL TESTS: VOC's + 1,4-DIOXANE	VOC's + 1,4-DIOXANE SIM	70-15 FULL	P_1	P_2	Yield	REMARKS
SVE-OBS-SHAL-40-AREA	5/12/12	0937	317		X			X		-30	0	212213-09	X			740	907	X	
SVE-AREA 1-05/12/12	5/12/12	0955	352	X		X				-28	-12	-10	X	X		465	957	X	
SVE-AREA 2-05/12/12	5/12/12	0952	351	X		X				-28	-10	-11	X	X		440	968	X	

COMMENTS: Returned FC 2562; can 318 (DO NOT ANALYZE) UNUSED

BILLING INFORMATION

Company EMS
Address PO BOX 15369
City/State/Zip HATTIESBURG MS 39404
ATTENTION CHRIS JOHNSON
Purchase Order/Billing Reference KUH0-11-006

SAMPLED BY:		Date / Time: 5/12/12	Received by:		Date / Time
Relinquished By:		Date / Time: 5/14/12 1130	Received by:		Date / Time
Relinquished By:		Date / Time	Received by:		Date / Time
Relinquished By:		Date / Time	Received for lab by:		Date / Time: 5/15/12 9:30am

ANSBPA

MPS# 7983 9271 4356

ENVIRONMENTAL
Analytical Service, Inc.

173 Cross Street
San Luis Obispo, CA
93401 - 7597
805.781.3585
Fax 805.541.4550

CHAIN OF CUSTODY RECORD

Project Number: KUH011-0006 | Project Name: KEC SVE Pilot | Quote Number:

REPORT TO:

Company: EMS
Address: P.O. Box 153169
City/State/Zip: Hattiesburg MS 39404
Phone: 601 544 3674 (FAX) 601 544 0504
ATTENTION: Chris Johnson

MATRIX LEGEND
A - Ambient Air, Low Level
I - Indoor Air
S - Source Air, High Level
G - Gas/Product

SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	CANISTER NUMBER	COMP	GRAB	MATRIX A	MATRIX I	MATRIX S	MATRIX G	INITIAL PRESSURE	FINAL PRESSURE	EAS LABORATORY ID	ANALYTICAL TESTS: VOC + 1,4-Dioxane TO-15 (full)			P1	P2	Soil	REMARKS
SVE-OBS-Shal-40-Post	5/12/12	19:45	343		X			X		-30	D	212213-12	X			10	976	X	
SVE-EXT-Deep-Pre	5/12/12	8:47	330		X			X		-30	D	-13	X			755	976	X	V
SVE-SP15-Pre	5/12/12	10:16	369		X			X		-30	D	-14	X			728	971	X	V
SVE-Ext-Shal-Pre	5/12/12	9:04	300		X			X		-30	D	-15	X			743	972	V	

N2

COMMENTS: Returned FC 2536

BILLING INFORMATION

Company: EMS
Address: P.O. Box 153 69
City/State/Zip: Hattiesburg MS 39404
ATTENTION: Chris Johnson
Purchase Order/Billing Reference: KUH0-11-0006

SAMPLED BY: Chris Johnson	Date: 5/12/12	Time:	Received by:	Date:	Time:
Relinquished By: Chris Johnson	Date: 5/14/12	Time: 1130	Received by:	Date:	Time:
Relinquished By:	Date:	Time:	Received by:	Date:	Time:
Relinquished By:	Date:	Time:	Received for lab by: April Cea	Date: 5/15/12	Time: 9:30am

AN SBPA
TRK # 7983 9271 4492

ENVIRONMENTAL
Analytical Service, Inc.

173 Cross Street
San Luis Obispo, CA
93401 - 7597
805.781.3585
Fax 805.541.4550

CHAIN OF CUSTODY RECORD

Project Number: KUH0-11-006 | Project Name: KEC SVE PILOT | Quote Number:

REPORT TO:

Company: EMS
Address: PO Box 15369
City/State/Zip: HATTIESBURG MS 39404
Phone: 601-544-3674 (FAX) 601-544-0504
ATTENTION: Chris Johnson

MATRIX LEGEND
A - Ambient Air, Low Level
I - Indoor Air
S - Source Air, High Level
G - Gas/Product

SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	CANISTER NUMBER	COMP	GRAB	MATRIX A	MATRIX I	MATRIX S	MATRIX G	INITIAL PRESSURE	FINAL PRESSURE	EAS LABORATORY ID (2/22/13)	ANALYTICAL TESTS: VOC's + 1,4-Dioxane TO-15 FULL	VOC's + 1,4-Dioxane SIM	P_1	P_2	Shelf	REMARKS
SVE-OBS-DEEP-40'-PRE	5/13/12	0821	345		X			X		-30	0	-16	X		735	958	V	
SVE-EXT-DEEP-POST	5/13/12	1502	332		X			X		-30	0	-17	X		710	968	Y	
SVE-AREA 2-5'-12	5/13/12	0825	308	X		X				-29	-16	-18	X	X	386	965	Y	
SVE-CARBON-POST-02	5/13/12	1350	348					X		-30	0	-19	X		762	978	Y	

N2

COMMENTS: Returned FC # 2509

BILLING INFORMATION

Company: EMS
Address: PO Box 15369
City/State/Zip: HATTIESBURG
ATTENTION: Chris Johnson
Purchase Order/Billing Reference: KUH0-11-006

SAMPLED BY: Chris Johnson	Date 5/13/12	Time [redacted]	Received by:	Date / Time
Relinquished By: Chris Johnson	Date 5/14/12	Time 1130	Received by:	Date / Time
Relinquished By:	Date	Time	Received by:	Date / Time
Relinquished By:	Date	Time	Received for lab by: April Cerda	Date 5/15/12 Time 9:30am

IV. QUALITY CONTROL REPORT

SDG Numbers: 212213
Client: Environmental Management Services

LABORATORY QC REPORT

QC NARRATIVE

Unless project specific QC was specified, these samples were analyzed with the standard EAS QC for the method as defined in the EAS Quality Manual.

STANDARD LABORATORY QC REPORT

Unless project specific QC reporting was requested, this Section contains the standard laboratory QC supplied with the analytical reports, which includes the daily method blank and the daily duplicate control samples as described below. Each day that samples are analyzed comprises a Daily Analytical Batch for a particular instrument. A Daily Analytical Batch QC report will be supplied for each method and each day samples from this SDG Group were analyzed.

METHOD BLANK

A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples. A copy of each batch Method Blank is included with the report. If a compound is detected in the Method Blank between the RL and MDL, it will be flagged with a "J". If a compound is above the RL, it will be flagged with a "B"

DUPLICATE CONTROL SAMPLES

A duplicate or duplicate control sample (DCS) was analyzed as part of each daily analytical batch. A DCS is a well-characterized matrix (blank water, ambient air, or actual sample) which may or may not be spiked and run in duplicate with your sample batch. The results are on the attached Duplicate Sample/Spike results. Precision is measured in a duplicate test by Relative Percent Difference (RPD) as in:

$$RPD = \frac{[\%\ \text{Recovery Test 1} - \%\ \text{Recovery Test 2}] \times 100}{(\text{Recovery Test 1} + \text{Recovery Test 2}) / 2}$$

METHOD BLANK REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified SIM GC/MS | **SDG:** LABQC
Analytical Method: TO15 SIM | **Laboratory ID:** B05242

Description: METHOD BLANK | **Date Sampled:** | **Time:**
Can/Tube#: 1 | **Date Received:** | **Time:**
QC_Batch: 052412-MB1 | **Date Analyzed:** 05/24/12 | **Time:** 15:19
Air Volume: 500 ml | **Can Dilution Factor:** 1.00

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	0.010	0.052	ND	0.049	0.257	ND	ND
74-87-3	Chloromethane	0.010	0.052	ND	0.021	0.107	ND	ND
76-14-2	Freon 114	0.010	0.052	ND	0.070	0.363	ND	ND
75-01-4	Vinyl chloride	0.010	0.052	ND	0.026	0.133	ND	ND
74-83-9	Bromomethane	0.010	0.052	ND	0.039	0.202	ND	ND
75-00-3	Chloroethane	0.010	0.052	ND	0.026	0.137	ND	ND
75-69-4	Trichlorofluoromethane	0.010	0.052	ND	0.056	0.292	ND	ND
75-35-4	1,1-Dichloroethene	0.010	0.052	ND	0.040	0.206	ND	ND
76-13-1	Freon 113	0.010	0.052	ND	0.077	0.398	ND	ND
75-09-2	Dichloromethane	0.010	0.052	ND	0.035	0.180	ND	ND
156-60-5	trans-1,2-Dichloroethene	0.010	0.052	ND	0.040	0.206	ND	ND
1634-04-4	Methyl tert butyl ether	0.010	0.052	ND	0.036	0.187	ND	ND
75-34-3	1,1-Dichloroethane	0.010	0.052	ND	0.040	0.210	ND	ND
156-59-2	cis-1,2-Dichloroethene	0.010	0.052	ND	0.040	0.206	ND	ND
67-66-3	Chloroform	0.010	0.052	ND	0.049	0.254	ND	ND
71-55-6	1,1,1-Trichloroethane	0.010	0.052	ND	0.055	0.284	ND	ND
107-06-2	1,2-Dichloroethane	0.010	0.052	ND	0.040	0.210	ND	ND
71-43-2	Benzene	0.010	0.052	ND	0.032	0.166	ND	ND
56-23-5	Carbon tetrachloride	0.010	0.052	ND	0.063	0.327	ND	ND
78-87-5	1,2-Dichloropropane	0.010	0.052	ND	0.046	0.240	ND	ND
79-01-6	Trichloroethene	0.010	0.052	ND	0.054	0.279	ND	ND
75-27-4	Bromodichloromethane	0.010	0.052	ND	0.067	0.348	ND	ND
10061-01-5	cis-1,3-Dichloropropene	0.010	0.052	ND	0.045	0.236	ND	ND
108-88-3	Toluene	0.010	0.052	0.020	0.038	0.196	0.074	J
10061-02-6	trans-1,3-Dichloropropene	0.010	0.052	ND	0.045	0.236	ND	ND
79-00-5	1,1,2-Trichloroethane	0.010	0.052	ND	0.055	0.284	ND	ND
106-93-4	1,2-Dibromoethane	0.010	0.052	ND	0.077	0.399	ND	ND
127-18-4	Tetrachloroethene	0.010	0.052	ND	0.068	0.352	ND	ND
108-90-7	Chlorobenzene	0.010	0.052	ND	0.046	0.239	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	0.010	0.052	ND	0.069	0.357	ND	ND
100-41-4	Ethylbenzene	0.010	0.052	ND	0.043	0.226	ND	ND
1330-20-7	m,p-Xylenes	0.010	0.052	ND	0.043	0.226	ND	ND
100-42-5	Styrene	0.010	0.052	ND	0.043	0.222	ND	ND
95-47-6	o-Xylene	0.010	0.052	ND	0.043	0.226	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	0.010	0.052	ND	0.069	0.357	ND	ND
622-96-8	4-Ethyltoluene	0.010	0.052	ND	0.049	0.256	ND	ND
108-67-8	1,3,5-Trimethylbenzene	0.010	0.052	ND	0.049	0.256	ND	ND

95-63-6	1,2,4-Trimethylbenzene	0.010	0.052	0.014	0.049	0.256	0.067	J
541-73-1	1,3-Dichlorobenzene	0.010	0.052	0.021	0.060	0.312	0.125	
100-44-7	Benzyl chloride	0.010	0.052	ND	0.052	0.269	ND	ND
106-46-7	1,4-Dichlorobenzene	0.010	0.052	0.033	0.060	0.312	0.199	J
95-50-1	1,2-Dichlorobenzene	0.010	0.052	0.033	0.060	0.312	0.198	J
91-20-3	Naphthalene	0.010	0.052	0.021	0.052	0.273	0.112	J

	Surrogate Recovery	Spike ppbV	Measured ppbV	% Rec.	QC LCL	Limits UCL	Flag * = Out
2037-26-5	Toluene-d8	0.20	0.16	78	70	130	

METHOD BLANK REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS | **SDG:** LABQC
Analytical Method: TO15 | **Laboratory ID:** B05212

Description: METHOD BLANK | **Date Sampled:** | **Time:**
Can/Tube#: | **Date Received:** | **Time:**
QC_Batch: 052112-MC1 | **Date Analyzed:** 05/21/12 | **Time:** 13:50
Air Volume: 500 ml | **Can Dilution Factor:** 1.00

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	0.21	0.53	ND	1.04	2.59	ND	ND
74-87-3	Chloromethane	0.20	0.51	ND	0.42	1.05	ND	ND
76-14-2	Freon 114	0.21	0.52	ND	1.45	3.63	ND	ND
75-01-4	Vinyl chloride	0.21	0.52	ND	0.53	1.33	ND	ND
106-99-0	1,3-Butadiene	0.21	0.54	ND	0.47	1.18	ND	ND
74-83-9	Bromomethane	0.21	0.52	ND	0.81	2.02	ND	ND
75-00-3	Chloroethane	0.21	0.52	ND	0.55	1.37	ND	ND
75-69-4	Trichlorofluoromethane	0.21	0.52	ND	1.17	2.92	ND	ND
67-64-1	Acetone	0.23	0.57	ND	0.54	1.34	ND	ND
75-35-4	1,1-Dichloroethene	0.20	0.51	ND	0.80	2.00	ND	ND
76-13-1	Freon 113	0.20	0.51	ND	1.56	3.91	ND	ND
75-09-2	Dichloromethane	0.21	0.52	ND	0.72	1.80	ND	ND
75-15-0	Carbon disulfide	0.17	0.43	ND	0.53	1.33	ND	ND
156-60-5	trans-1,2-Dichloroethene	0.13	0.33	ND	0.53	1.32	ND	ND
1634-04-4	Methyl tert butyl ether	0.14	0.34	ND	0.49	1.22	ND	ND
75-34-3	1,1-Dichloroethane	0.20	0.51	ND	0.82	2.04	ND	ND
108-05-4	Vinyl acetate	0.16	0.40	ND	0.57	1.42	ND	ND
78-93-3	2-Butanone	0.19	0.47	ND	0.55	1.38	ND	ND
110-54-3	Hexane	0.14	0.34	ND	0.48	1.20	ND	ND
126-98-7	Methacrylonitrile	0.19	0.48	ND	0.52	1.30	ND	ND
141-78-6	Ethyl acetate	0.16	0.40	ND	0.58	1.45	ND	ND
74-97-5	Bromochloromethane	0.10	0.25	ND	0.52	1.30	ND	ND
78-83-1	Isobutyl alcohol	0.15	0.38	ND	0.46	1.15	ND	ND
156-59-2	cis-1,2-Dichloroethene	0.21	0.52	ND	0.82	2.04	ND	ND
594-20-7	2,2-Dichloropropane	0.16	0.41	ND	0.76	1.89	ND	ND
67-66-3	Chloroform	0.20	0.51	ND	1.00	2.49	ND	ND
71-55-6	1,1,1-Trichloroethane	0.20	0.51	ND	1.11	2.78	ND	ND
107-06-2	1,2-Dichloroethane	0.21	0.52	ND	0.83	2.08	ND	ND
563-58-6	1,1-Dichloropropene	0.12	0.30	ND	0.55	1.37	ND	ND
110-82-7	Cyclohexane	0.14	0.35	ND	0.49	1.21	ND	ND
71-43-2	Benzene	0.21	0.52	ND	0.66	1.64	ND	ND
56-23-5	Carbon tetrachloride	0.20	0.51	ND	1.28	3.21	ND	ND
142-82-5	n-Heptane	0.11	0.28	ND	0.46	1.14	ND	ND
78-87-5	1,2-Dichloropropane	0.21	0.52	ND	0.95	2.38	ND	ND
123-91-1	1,4 Dioxane	0.38	0.94	ND	1.35	3.39	ND	ND
74-95-3	Dibromomethane	0.07	0.17	ND	0.49	1.23	ND	ND
79-01-6	Trichloroethene	0.21	0.52	ND	1.11	2.77	ND	ND

75-27-4	Bromodichloromethane	0.07	0.19	ND	0.50	1.24	ND	ND
80-62-6	Methyl methacrylate	0.12	0.31	ND	0.51	1.27	ND	ND
108-10-1	4-Methyl-2-pentanone	0.14	0.35	ND	0.57	1.43	ND	ND
10061-01-5	cis-1,3-Dichloropropene	0.21	0.53	ND	0.96	2.40	ND	ND
108-88-3	Toluene	0.21	0.52	ND	0.78	1.94	ND	ND
10061-02-6	trans-1,3-Dichloropropene	0.21	0.52	ND	0.94	2.36	ND	ND
79-00-5	1,1,2-Trichloroethane	0.20	0.51	ND	1.11	2.78	ND	ND
591-78-6	2-Hexanone	0.13	0.33	ND	0.53	1.34	ND	ND
142-28-9	1,3-Dichloropropane	0.12	0.30	ND	0.56	1.40	ND	ND
111-65-9	Octane	0.10	0.25	ND	0.47	1.17	ND	ND
124-48-1	Dibromochloromethane	0.07	0.18	ND	0.63	1.56	ND	ND
106-93-4	1,2-Dibromoethane	0.21	0.52	ND	1.60	3.99	ND	ND
127-18-4	Tetrachloroethene	0.20	0.51	ND	1.38	3.46	ND	ND
108-90-7	Chlorobenzene	0.20	0.51	ND	0.94	2.35	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	0.08	0.19	ND	0.52	1.31	ND	ND
100-41-4	Ethylbenzene	0.21	0.52	ND	0.90	2.26	ND	ND
1330-20-7	m,p-Xylenes	0.41	1.03	ND	1.79	4.47	ND	ND
111-84-2	Nonane	0.09	0.22	ND	0.46	1.15	ND	ND
100-42-5	Styrene	0.21	0.52	ND	0.88	2.19	ND	ND
75-25-2	Bromoform	0.05	0.12	ND	0.51	1.28	ND	ND
95-47-6	o-Xylene	0.20	0.51	ND	0.89	2.21	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	0.20	0.51	ND	1.40	3.50	ND	ND
96-18-4	1,2,3-Trichloropropane	0.09	0.23	ND	0.55	1.36	ND	ND
103-65-1	n-Propylbenzene	0.14	0.35	ND	0.68	1.70	ND	ND
98-82-8	Isopropylbenzene	0.14	0.35	ND	0.69	1.72	ND	ND
622-96-8	4-Ethyltoluene	0.11	0.28	ND	0.56	1.40	ND	ND
108-67-8	1,3,5-Trimethylbenzene	0.21	0.53	ND	1.04	2.60	ND	ND
124-18-5	Decane	0.09	0.23	ND	0.54	1.36	ND	ND
98-06-6	tert-butyl benzene	0.12	0.31	ND	0.67	1.67	ND	ND
95-63-6	1,2,4-Trimethylbenzene	0.20	0.51	ND	1.00	2.51	ND	ND
538-93-2	i-Butylbenzene	0.12	0.31	ND	0.67	1.67	ND	ND
135-98-8	sec-butylbenzene	0.13	0.33	ND	0.71	1.78	ND	ND
541-73-1	1,3-Dichlorobenzene	0.20	0.51	ND	1.23	3.06	ND	ND
99-87-6	Isopropyltoluene	0.13	0.32	ND	0.70	1.76	ND	ND
100-44-7	Benzyl chloride	0.12	0.29	ND	0.61	1.52	ND	ND
106-46-7	1,4-Dichlorobenzene	0.20	0.51	ND	1.23	3.06	ND	ND
104-51-8	n-Butylbenzene	0.12	0.30	ND	0.66	1.65	ND	ND
95-50-1	1,2-Dichlorobenzene	0.20	0.50	ND	1.20	3.00	ND	ND
120-82-1	1,2,4-Trichlorobenzene	0.21	0.52	0.28	1.53	3.82	2.05	J
91-20-3	Naphthalene	0.04	0.11	ND	0.23	0.58	ND	ND
87-68-3	Hexachlorobutadiene	0.21	0.52	ND	2.20	5.49	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	9.76	98	70	130	

METHOD BLANK REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS | **SDG:** LABQC
Analytical Method: TO15 | **Laboratory ID:** B05172

Description: METHOD BLANK | **Date Sampled:** | **Time:**
Can/Tube#: | **Date Received:** | **Time:**
QC_Batch: 051712-MC1 | **Date Analyzed:** 05/17/12 | **Time:** 14:34
Air Volume: 500 ml | **Can Dilution Factor:** 1.00

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	0.21	0.53	ND	1.04	2.59	ND	ND
74-87-3	Chloromethane	0.20	0.51	ND	0.42	1.05	ND	ND
76-14-2	Freon 114	0.21	0.52	ND	1.45	3.63	ND	ND
75-01-4	Vinyl chloride	0.21	0.52	ND	0.53	1.33	ND	ND
106-99-0	1,3-Butadiene	0.21	0.54	ND	0.47	1.18	ND	ND
74-83-9	Bromomethane	0.21	0.52	ND	0.81	2.02	ND	ND
75-00-3	Chloroethane	0.21	0.52	ND	0.55	1.37	ND	ND
75-69-4	Trichlorofluoromethane	0.21	0.52	ND	1.17	2.92	ND	ND
67-64-1	Acetone	0.23	0.57	0.24	0.54	1.34	0.56	J
75-35-4	1,1-Dichloroethene	0.20	0.51	ND	0.80	2.00	ND	ND
76-13-1	Freon 113	0.20	0.51	ND	1.56	3.91	ND	ND
75-09-2	Dichloromethane	0.21	0.52	ND	0.72	1.80	ND	ND
75-15-0	Carbon disulfide	0.17	0.43	ND	0.53	1.33	ND	ND
156-60-5	trans-1,2-Dichloroethene	0.13	0.33	ND	0.53	1.32	ND	ND
1634-04-4	Methyl tert butyl ether	0.14	0.34	ND	0.49	1.22	ND	ND
75-34-3	1,1-Dichloroethane	0.20	0.51	ND	0.82	2.04	ND	ND
108-05-4	Vinyl acetate	0.16	0.40	0.24	0.57	1.42	0.86	J
78-93-3	2-Butanone	0.19	0.47	ND	0.55	1.38	ND	ND
110-54-3	Hexane	0.14	0.34	0.18	0.48	1.20	0.62	J
126-98-7	Methacrylonitrile	0.19	0.48	ND	0.52	1.30	ND	ND
141-78-6	Ethyl acetate	0.16	0.40	ND	0.58	1.45	ND	ND
74-97-5	Bromochloromethane	0.10	0.25	ND	0.52	1.30	ND	ND
78-83-1	Isobutyl alcohol	0.15	0.38	ND	0.46	1.15	ND	ND
156-59-2	cis-1,2-Dichloroethene	0.21	0.52	ND	0.82	2.04	ND	ND
594-20-7	2,2-Dichloropropane	0.16	0.41	ND	0.76	1.89	ND	ND
67-66-3	Chloroform	0.20	0.51	ND	1.00	2.49	ND	ND
71-55-6	1,1,1-Trichloroethane	0.20	0.51	ND	1.11	2.78	ND	ND
107-06-2	1,2-Dichloroethane	0.21	0.52	ND	0.83	2.08	ND	ND
563-58-6	1,1-Dichloropropene	0.12	0.30	ND	0.55	1.37	ND	ND
110-82-7	Cyclohexane	0.14	0.35	ND	0.49	1.21	ND	ND
71-43-2	Benzene	0.21	0.52	ND	0.66	1.64	ND	ND
56-23-5	Carbon tetrachloride	0.20	0.51	ND	1.28	3.21	ND	ND
142-82-5	n-Heptane	0.11	0.28	ND	0.46	1.14	ND	ND
78-87-5	1,2-Dichloropropane	0.21	0.52	ND	0.95	2.38	ND	ND
123-91-1	1,4 Dioxane	0.38	0.94	ND	1.35	3.39	ND	ND
74-95-3	Dibromomethane	0.07	0.17	ND	0.49	1.23	ND	ND
79-01-6	Trichloroethene	0.21	0.52	ND	1.11	2.77	ND	ND

75-27-4	Bromodichloromethane	0.07	0.19	ND	0.50	1.24	ND	ND
80-62-6	Methyl methacrylate	0.12	0.31	ND	0.51	1.27	ND	ND
108-10-1	4-Methyl-2-pentanone	0.14	0.35	ND	0.57	1.43	ND	ND
10061-01-5	cis-1,3-Dichloropropene	0.21	0.53	ND	0.96	2.40	ND	ND
108-88-3	Toluene	0.21	0.52	ND	0.78	1.94	ND	ND
10061-02-6	trans-1,3-Dichloropropene	0.21	0.52	ND	0.94	2.36	ND	ND
79-00-5	1,1,2-Trichloroethane	0.20	0.51	ND	1.11	2.78	ND	ND
591-78-6	2-Hexanone	0.13	0.33	ND	0.53	1.34	ND	ND
142-28-9	1,3-Dichloropropane	0.12	0.30	ND	0.56	1.40	ND	ND
111-65-9	Octane	0.10	0.25	ND	0.47	1.17	ND	ND
124-48-1	Dibromochloromethane	0.07	0.18	ND	0.63	1.56	ND	ND
106-93-4	1,2-Dibromoethane	0.21	0.52	ND	1.60	3.99	ND	ND
127-18-4	Tetrachloroethene	0.20	0.51	ND	1.38	3.46	ND	ND
108-90-7	Chlorobenzene	0.20	0.51	ND	0.94	2.35	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	0.08	0.19	ND	0.52	1.31	ND	ND
100-41-4	Ethylbenzene	0.21	0.52	ND	0.90	2.26	ND	ND
1330-20-7	m,p-Xylenes	0.41	1.03	ND	1.79	4.47	ND	ND
111-84-2	Nonane	0.09	0.22	ND	0.46	1.15	ND	ND
100-42-5	Styrene	0.21	0.52	ND	0.88	2.19	ND	ND
75-25-2	Bromoform	0.05	0.12	ND	0.51	1.28	ND	ND
95-47-6	o-Xylene	0.20	0.51	ND	0.89	2.21	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	0.20	0.51	ND	1.40	3.50	ND	ND
96-18-4	1,2,3-Trichloropropane	0.09	0.23	ND	0.55	1.36	ND	ND
103-65-1	n-Propylbenzene	0.14	0.35	ND	0.68	1.70	ND	ND
98-82-8	Isopropylbenzene	0.14	0.35	ND	0.69	1.72	ND	ND
622-96-8	4-Ethyltoluene	0.11	0.28	ND	0.56	1.40	ND	ND
108-67-8	1,3,5-Trimethylbenzene	0.21	0.53	ND	1.04	2.60	ND	ND
124-18-5	Decane	0.09	0.23	ND	0.54	1.36	ND	ND
98-06-6	tert-butyl benzene	0.12	0.31	ND	0.67	1.67	ND	ND
95-63-6	1,2,4-Trimethylbenzene	0.20	0.51	ND	1.00	2.51	ND	ND
538-93-2	i-Butylbenzene	0.12	0.31	ND	0.67	1.67	ND	ND
135-98-8	sec-butylbenzene	0.13	0.33	ND	0.71	1.78	ND	ND
541-73-1	1,3-Dichlorobenzene	0.20	0.51	ND	1.23	3.06	ND	ND
99-87-6	Isopropyltoluene	0.13	0.32	ND	0.70	1.76	ND	ND
100-44-7	Benzyl chloride	0.12	0.29	ND	0.61	1.52	ND	ND
106-46-7	1,4-Dichlorobenzene	0.20	0.51	ND	1.23	3.06	ND	ND
104-51-8	n-Butylbenzene	0.12	0.30	ND	0.66	1.65	ND	ND
95-50-1	1,2-Dichlorobenzene	0.20	0.50	ND	1.20	3.00	ND	ND
120-82-1	1,2,4-Trichlorobenzene	0.21	0.52	0.21	1.53	3.82	1.57	J
91-20-3	Naphthalene	0.04	0.11	ND	0.23	0.58	ND	ND
87-68-3	Hexachlorobutadiene	0.21	0.52	ND	2.20	5.49	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	9.39	94	70	130	

METHOD BLANK REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS | **SDG:** LABQC
Analytical Method: TO15 | **Laboratory ID:** B05182

Description: METHOD BLANK | **Date Sampled:** | **Time:**
Can/Tube#: 1 | **Date Received:** | **Time:**
QC_Batch: 051812-MC1 | **Date Analyzed:** 05/18/12 | **Time:** 13:56
Air Volume: 500 ml | **Can Dilution Factor:** 1.00

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	0.21	0.53	ND	1.04	2.59	ND	ND
74-87-3	Chloromethane	0.20	0.51	ND	0.42	1.05	ND	ND
76-14-2	Freon 114	0.21	0.52	ND	1.45	3.63	ND	ND
75-01-4	Vinyl chloride	0.21	0.52	ND	0.53	1.33	ND	ND
106-99-0	1,3-Butadiene	0.21	0.54	ND	0.47	1.18	ND	ND
74-83-9	Bromomethane	0.21	0.52	ND	0.81	2.02	ND	ND
75-00-3	Chloroethane	0.21	0.52	ND	0.55	1.37	ND	ND
75-69-4	Trichlorofluoromethane	0.21	0.52	ND	1.17	2.92	ND	ND
67-64-1	Acetone	0.23	0.57	ND	0.54	1.34	ND	ND
75-35-4	1,1-Dichloroethene	0.20	0.51	ND	0.80	2.00	ND	ND
76-13-1	Freon 113	0.20	0.51	ND	1.56	3.91	ND	ND
75-09-2	Dichloromethane	0.21	0.52	ND	0.72	1.80	ND	ND
75-15-0	Carbon disulfide	0.17	0.43	ND	0.53	1.33	ND	ND
156-60-5	trans-1,2-Dichloroethene	0.13	0.33	ND	0.53	1.32	ND	ND
1634-04-4	Methyl tert butyl ether	0.14	0.34	ND	0.49	1.22	ND	ND
75-34-3	1,1-Dichloroethane	0.20	0.51	ND	0.82	2.04	ND	ND
108-05-4	Vinyl acetate	0.16	0.40	0.47	0.57	1.42	1.66	
78-93-3	2-Butanone	0.19	0.47	ND	0.55	1.38	ND	ND
110-54-3	Hexane	0.14	0.34	0.32	0.48	1.20	1.13	J
126-98-7	Methacrylonitrile	0.19	0.48	ND	0.52	1.30	ND	ND
141-78-6	Ethyl acetate	0.16	0.40	ND	0.58	1.45	ND	ND
74-97-5	Bromochloromethane	0.10	0.25	ND	0.52	1.30	ND	ND
78-83-1	Isobutyl alcohol	0.15	0.38	ND	0.46	1.15	ND	ND
156-59-2	cis-1,2-Dichloroethene	0.21	0.52	ND	0.82	2.04	ND	ND
594-20-7	2,2-Dichloropropane	0.16	0.41	ND	0.76	1.89	ND	ND
67-66-3	Chloroform	0.20	0.51	ND	1.00	2.49	ND	ND
71-55-6	1,1,1-Trichloroethane	0.20	0.51	ND	1.11	2.78	ND	ND
107-06-2	1,2-Dichloroethane	0.21	0.52	ND	0.83	2.08	ND	ND
563-58-6	1,1-Dichloropropene	0.12	0.30	ND	0.55	1.37	ND	ND
110-82-7	Cyclohexane	0.14	0.35	ND	0.49	1.21	ND	ND
71-43-2	Benzene	0.21	0.52	ND	0.66	1.64	ND	ND
56-23-5	Carbon tetrachloride	0.20	0.51	ND	1.28	3.21	ND	ND
142-82-5	n-Heptane	0.11	0.28	ND	0.46	1.14	ND	ND
78-87-5	1,2-Dichloropropane	0.21	0.52	ND	0.95	2.38	ND	ND
123-91-1	1,4 Dioxane	0.38	0.94	ND	1.35	3.39	ND	ND
74-95-3	Dibromomethane	0.07	0.17	ND	0.49	1.23	ND	ND
79-01-6	Trichloroethene	0.21	0.52	ND	1.11	2.77	ND	ND

75-27-4	Bromodichloromethane	0.07	0.19	ND	0.50	1.24	ND	ND
80-62-6	Methyl methacrylate	0.12	0.31	ND	0.51	1.27	ND	ND
108-10-1	4-Methyl-2-pentanone	0.14	0.35	ND	0.57	1.43	ND	ND
10061-01-5	cis-1,3-Dichloropropene	0.21	0.53	ND	0.96	2.40	ND	ND
108-88-3	Toluene	0.21	0.52	ND	0.78	1.94	ND	ND
10061-02-6	trans-1,3-Dichloropropene	0.21	0.52	ND	0.94	2.36	ND	ND
79-00-5	1,1,2-Trichloroethane	0.20	0.51	ND	1.11	2.78	ND	ND
591-78-6	2-Hexanone	0.13	0.33	ND	0.53	1.34	ND	ND
142-28-9	1,3-Dichloropropane	0.12	0.30	ND	0.56	1.40	ND	ND
111-65-9	Octane	0.10	0.25	ND	0.47	1.17	ND	ND
124-48-1	Dibromochloromethane	0.07	0.18	ND	0.63	1.56	ND	ND
106-93-4	1,2-Dibromoethane	0.21	0.52	ND	1.60	3.99	ND	ND
127-18-4	Tetrachloroethene	0.20	0.51	ND	1.38	3.46	ND	ND
108-90-7	Chlorobenzene	0.20	0.51	ND	0.94	2.35	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	0.08	0.19	ND	0.52	1.31	ND	ND
100-41-4	Ethylbenzene	0.21	0.52	ND	0.90	2.26	ND	ND
1330-20-7	m,p-Xylenes	0.41	1.03	ND	1.79	4.47	ND	ND
111-84-2	Nonane	0.09	0.22	ND	0.46	1.15	ND	ND
100-42-5	Styrene	0.21	0.52	ND	0.88	2.19	ND	ND
75-25-2	Bromoform	0.05	0.12	ND	0.51	1.28	ND	ND
95-47-6	o-Xylene	0.20	0.51	ND	0.89	2.21	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	0.20	0.51	ND	1.40	3.50	ND	ND
96-18-4	1,2,3-Trichloropropane	0.09	0.23	ND	0.55	1.36	ND	ND
103-65-1	n-Propylbenzene	0.14	0.35	ND	0.68	1.70	ND	ND
98-82-8	Isopropylbenzene	0.14	0.35	ND	0.69	1.72	ND	ND
622-96-8	4-Ethyltoluene	0.11	0.28	ND	0.56	1.40	ND	ND
108-67-8	1,3,5-Trimethylbenzene	0.21	0.53	ND	1.04	2.60	ND	ND
124-18-5	Decane	0.09	0.23	ND	0.54	1.36	ND	ND
98-06-6	tert-butyl benzene	0.12	0.31	ND	0.67	1.67	ND	ND
95-63-6	1,2,4-Trimethylbenzene	0.20	0.51	ND	1.00	2.51	ND	ND
538-93-2	i-Butylbenzene	0.12	0.31	ND	0.67	1.67	ND	ND
135-98-8	sec-butylbenzene	0.13	0.33	ND	0.71	1.78	ND	ND
541-73-1	1,3-Dichlorobenzene	0.20	0.51	ND	1.23	3.06	ND	ND
99-87-6	Isopropyltoluene	0.13	0.32	ND	0.70	1.76	ND	ND
100-44-7	Benzyl chloride	0.12	0.29	ND	0.61	1.52	ND	ND
106-46-7	1,4-Dichlorobenzene	0.20	0.51	ND	1.23	3.06	ND	ND
104-51-8	n-Butylbenzene	0.12	0.30	ND	0.66	1.65	ND	ND
95-50-1	1,2-Dichlorobenzene	0.20	0.50	ND	1.20	3.00	ND	ND
120-82-1	1,2,4-Trichlorobenzene	0.21	0.52	ND	1.53	3.82	ND	ND
91-20-3	Naphthalene	0.04	0.11	ND	0.23	0.58	ND	ND
87-68-3	Hexachlorobutadiene	0.21	0.52	ND	2.20	5.49	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	9.43	94	70	130	

QUALITY CONTROL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

LABORATORY CONTROL SPIKE
EPA Method TO-15 Modified SIM GC/MS
Analytical Method: **TO15 SIM**

SDG: **LABQC**
Laboratory ID: **QC05242A**

File: QC05242B.D
Description ST60025
Sam_Type: LCS
QC_Batch: 052412-MB1
Air Volume 50 ml

Date Analyzed: 05/24/12
Time: 12:03

CAS#	Compound	Spike PPBV	LCS PPBV	LCD PPBV	Rec %	LCL %	UCL %	Rec Flag	D %	Limit %	Flag %
75-01-4	Vinyl chloride	6.564	6.673	6.70	102	70	130		0	25	
75-35-4	1,1-Dichloroethene	6.850	7.050	6.73	103	70	130		5	25	
75-09-2	Dichloromethane	6.945	7.505	6.80	108	70	130		9	25	
75-34-3	1,1-Dichloroethane	7.143	7.319	7.02	102	70	130		4	25	
67-66-3	Chloroform	6.081	6.442	5.80	106	70	130		10	25	
71-55-6	1,1,1-Trichloroethane	5.605	5.584	5.47	100	70	130		2	25	
107-06-2	1,2-Dichloroethane	6.090	5.940	6.29	98	70	130		6	25	
71-43-2	Benzene	6.259	6.108	6.27	98	70	130		3	25	
56-23-5	Carbon tetrachloride	9.171	8.982	9.04	98	70	130		1	25	
79-01-6	Trichloroethene	8.439	8.227	8.29	97	70	130		1	25	
108-88-3	Toluene	7.248	7.093	7.11	98	70	130		0	25	
127-18-4	Tetrachloroethene	8.625	8.306	8.97	96	70	130		8	25	
100-41-4	Ethylbenzene	8.435	8.356	8.43	99	70	130		1	25	
1330-20-7	m,p-Xylenes	18.421	17.964	18.48	98	70	130		3	25	
95-47-6	o-Xylene	8.774	8.663	8.75	99	70	130		1	25	
108-67-8	1,3,5-Trimethylbenzene	17.071	16.203	17.43	95	70	130		8	25	

	Surrogate Recovery	Spike ppbV	Measured ppbV	Limit LCL	Limits UCL	Flag * = Out
2037-26-5	Toluene-d8	0.20	0.15	#REF!	130	=

QUALITY CONTROL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

LABORATORY CONTROL DUPLICATE
EPA Method TO-15 Modified SIM GC/MS
Analytical Method: **TO15 SIM**

SDG: **LABQC**
Laboratory ID: **QC05242B**

File: QC05242C.D
Description ST60025
Sam_Type: LCD
QC_Batch: 052412-MB1
Air Volume 50 ml

Date Analyzed: 05/24/12
Time: 12:34

CAS#	Compound	Spike PPBV	LCS PPBV	LCD PPBV	Rec %	LCL %	UCL %	Rec Flag	D %	Limit %	Flag %
75-01-4	Vinyl chloride	6.563	6.320	6.67	96	70	130		6	25	
75-35-4	1,1-Dichloroethene	6.850	6.769	7.05	99	70	130		4	25	
75-09-2	Dichloromethane	6.943	6.533	7.50	94	70	130		15	25	
75-34-3	1,1-Dichloroethane	7.143	7.088	7.32	99	70	130		3	25	
67-66-3	Chloroform	6.080	5.995	6.44	99	70	130		7	25	
71-55-6	1,1,1-Trichloroethane	5.603	5.763	5.58	103	70	130		3	25	
107-06-2	1,2-Dichloroethane	6.090	6.039	5.94	99	70	130		2	25	
71-43-2	Benzene	6.260	6.404	6.11	102	70	130		5	25	
56-23-5	Carbon tetrachloride	9.170	9.494	8.98	104	70	130		5	25	
79-01-6	Trichloroethene	8.440	8.805	8.23	104	70	130		7	25	
108-88-3	Toluene	7.247	7.540	7.09	104	70	130		6	25	
127-18-4	Tetrachloroethene	8.627	8.598	8.31	100	70	130		3	25	
100-41-4	Ethylbenzene	8.437	8.517	8.36	101	70	130		2	25	
1330-20-7	m,p-Xylenes	18.420	18.816	17.96	102	70	130		5	25	
95-47-6	o-Xylene	8.773	8.910	8.66	102	70	130		3	25	
108-67-8	1,3,5-Trimethylbenzene	17.070	17.576	16.20	103	70	130		8	25	

	Surrogate Recovery	Spike ppbV	Measured ppbV	Limit LCL	Limits UCL	Flag * = Out
2037-26-5	Toluene-d8	0.20	0.16	#REF!	130	=

QUALITY CONTROL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

Laboratory Control Spike and Spike Duplicate Report
TO15 Volatile Organic Compounds by GC/MS

QC_Batch: 052112-MC1 **Date Analyzed:** 05/21/12

CAS#	Compound	LCS %	Flag	LCD %	Flag	LCL %	UCL %	D %	Limit %	Flag %
75-01-4	Vinyl chloride	91		69	*	70	130	24	25	
75-35-4	1,1-Dichloroethene	78		72		70	130	8	25	
75-09-2	Dichloromethane	87		81		70	130	7	25	
75-34-3	1,1-Dichloroethane	83		76		70	130	9	25	
67-66-3	Chloroform	93		84		70	130	9	25	
71-55-6	1,1,1-Trichloroethane	80		82		70	130	3	25	
107-06-2	1,2-Dichloroethane	74		80		70	130	9	25	
71-43-2	Benzene	92		88		70	130	5	25	
56-23-5	Carbon tetrachloride	90		91		70	130	1	25	
79-01-6	Trichloroethene	83		86		70	130	3	25	
108-88-3	Toluene	82		84		70	130	2	25	
127-18-4	Tetrachloroethene	84		86		70	130	3	25	
100-41-4	Ethylbenzene	84		83		70	130	2	25	
1330-20-7	m,p-Xylenes	82		84		70	130	2	25	
95-47-6	o-Xylene	84		84		70	130	0	25	
108-67-8	1,3,5-Trimethylbenzene	84		81		70	130	4	25	

QUALITY CONTROL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

Laboratory Control Spike and Spike Duplicate Report
TO15 Volatile Organic Compounds by GC/MS

QC_Batch: 051712-MC1 **Date Analyzed:** 05/17/12

CAS#	Compound	LCS %	Flag	LCD %	Flag	LCL %	UCL %	D %	Limit %	Flag %
75-01-4	Vinyl chloride	90		89		70	130	0	25	
75-35-4	1,1-Dichloroethene	73		77		70	130	6	25	
75-09-2	Dichloromethane	83		85		70	130	2	25	
75-34-3	1,1-Dichloroethane	77		83		70	130	7	25	
67-66-3	Chloroform	87		88		70	130	1	25	
71-55-6	1,1,1-Trichloroethane	87		81		70	130	7	25	
107-06-2	1,2-Dichloroethane	81		72		70	130	11	25	
71-43-2	Benzene	103		90		70	130	13	25	
56-23-5	Carbon tetrachloride	94		89		70	130	5	25	
79-01-6	Trichloroethene	89		85		70	130	5	25	
108-88-3	Toluene	89		86		70	130	3	25	
127-18-4	Tetrachloroethene	92		87		70	130	5	25	
100-41-4	Ethylbenzene	87		85		70	130	3	25	
1330-20-7	m,p-Xylenes	85		85		70	130	1	25	
95-47-6	o-Xylene	84		87		70	130	4	25	
108-67-8	1,3,5-Trimethylbenzene	84		84		70	130	0	25	

QUALITY CONTROL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

Laboratory Control Spike and Spike Duplicate Report
TO15 Volatile Organic Compounds by GC/MS

QC_Batch: 051812-MC1 **Date Analyzed:** 05/18/12

CAS#	Compound	LCS %	Flag	LCD %	Flag	LCL %	UCL %	D %	Limit %	Flag %
75-01-4	Vinyl chloride	88		71		70	130	20	25	
75-35-4	1,1-Dichloroethene	75		77		70	130	3	25	
75-09-2	Dichloromethane	79		85		70	130	7	25	
75-34-3	1,1-Dichloroethane	82		77		70	130	6	25	
67-66-3	Chloroform	85		86		70	130	1	25	
71-55-6	1,1,1-Trichloroethane	78		76		70	130	2	25	
107-06-2	1,2-Dichloroethane	71		68	*	70	130	3	25	
71-43-2	Benzene	91		90		70	130	0	25	
56-23-5	Carbon tetrachloride	87		91		70	130	5	25	
79-01-6	Trichloroethene	81		87		70	130	7	25	
108-88-3	Toluene	77		83		70	130	8	25	
127-18-4	Tetrachloroethene	86		91		70	130	6	25	
100-41-4	Ethylbenzene	86		88		70	130	2	25	
1330-20-7	m,p-Xylenes	86		89		70	130	4	25	
95-47-6	o-Xylene	81		87		70	130	7	25	
108-67-8	1,3,5-Trimethylbenzene	81		90		70	130	11	25	

V. ANALYTICAL RESULTS

SDG Numbers: 212213
Client: Environmental Management Services

The following pages contain the certified reports for the analytical methods and the compounds requested. The reports are in order of analytical method then EAS ID number. A brief description of the units that appear on the reports is given below:

ppbV, ppmV, Percent

Parts per billion by volume (also known as mole ratio) and other related units. This is the primary reporting unit for all volatile organic compound analysis except the hydrocarbon speciation and total hydrocarbons. This unit is independent of temperature and pressure.

$$\text{ppbV} = \frac{\text{nanomoles of compound}}{\text{moles of air}}$$

ug/m3, mg/m3

Micrograms of compound per cubic meter of air and other related units. This is the primary reporting unit for semi volatile organic compounds. It is not a primary reporting unit for volatile organic compounds because it is temperature and pressure dependent, so the result will vary depending on the conditions when the sample was collected. EAS provides the units on its analytical reports as a convenience to the client, but they should be used with caution. The following equation can be used to convert from ppbV to ug/m3.

$$\text{ug/m3} = \frac{\text{ppbV x MW compound}}{23.68}$$

23.68 is the molar volume of a gas at 60 F and 1 atm pressure

ppbC, ppmC

Parts per billion by volume as carbon (methane) and other related units. This unit is the primary reporting unit for hydrocarbon analysis, even if it does not appear on the report. This unit is used because the flame ionization detector response is proportional to the number of carbons in the compound, so an accurate concentration can be reported even if the identification of the compound is not known.

$$\text{ppbC} = \text{ppbV x number of carbons in compound}$$

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 01**

Description: SVE-SP15-03 **Date Sampled:** 05/13/12 **Time:** 10:20
Can/Tube#: 356 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 051812-MC1 **Date Analyzed:** 05/18/12 **Time:** 16:56
Air Volume: 20 ml **Can Dilution Factor:** 1.33

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	6.98	17.46	17.06	34.51	86.27	84.32	J
74-87-3	Chloromethane	6.78	16.96	ND	14.00	35.01	ND	ND
76-14-2	Freon 114	6.92	17.29	ND	48.32	120.79	ND	ND
75-01-4	Vinyl chloride	6.92	17.29	ND	17.67	44.18	ND	ND
106-99-0	1,3-Butadiene	7.12	17.79	ND	15.74	39.34	ND	ND
74-83-9	Bromomethane	6.92	17.29	ND	26.83	67.08	ND	ND
75-00-3	Chloroethane	6.92	17.29	ND	18.24	45.59	ND	ND
75-69-4	Trichlorofluoromethane	6.92	17.29	ND	38.85	97.11	ND	ND
67-64-1	Acetone	7.53	18.82	23.12	17.88	44.70	54.91	
75-35-4	1,1-Dichloroethene	6.72	16.79	1,116.08	26.61	66.51	4,421.03	E
76-13-1	Freon 113	6.78	16.96	9.77	51.96	129.91	74.82	J
75-09-2	Dichloromethane	6.92	17.29	ND	24.00	60.01	ND	ND
75-15-0	Carbon disulfide	5.69	14.21	ND	17.69	44.22	ND	ND
156-60-5	trans-1,2-Dichloroethene	4.42	11.04	ND	17.49	43.73	ND	ND
1634-04-4	Methyl tert butyl ether	4.52	11.29	ND	16.26	40.65	ND	ND
75-34-3	1,1-Dichloroethane	6.72	16.79	228.52	27.18	67.96	924.82	
108-05-4	Vinyl acetate	5.38	13.45	117.87	18.94	47.34	414.89	
78-93-3	2-Butanone	6.23	15.58	ND	18.37	45.91	ND	ND
110-54-3	Hexane	4.52	11.31	80.45	15.93	39.84	283.49	
126-98-7	Methacrylonitrile	6.32	15.79	ND	17.33	43.32	ND	ND
141-78-6	Ethyl acetate	5.36	13.40	ND	19.30	48.26	ND	ND
74-97-5	Bromochloromethane	3.26	8.15	4.13	17.24	43.09	21.86	J
78-83-1	Isobutyl alcohol	5.05	12.64	124.04	15.31	38.27	375.75	
156-59-2	cis-1,2-Dichloroethene	6.85	17.12	13.58	27.13	67.83	53.78	J
594-20-7	2,2-Dichloropropane	5.45	13.62	ND	25.16	62.90	ND	ND
67-66-3	Chloroform	6.78	16.96	62.75	33.11	82.77	306.29	
71-55-6	1,1,1-Trichloroethane	6.78	16.96	4,843.97	36.99	92.47	26,415.68	E
107-06-2	1,2-Dichloroethane	6.85	17.12	ND	27.72	69.30	ND	ND
563-58-6	1,1-Dichloropropene	4.03	10.07	ND	18.29	45.72	ND	ND
110-82-7	Cyclohexane	4.69	11.72	ND	16.14	40.34	ND	ND
71-43-2	Benzene	6.85	17.12	10.37	21.87	54.67	33.11	J
56-23-5	Carbon tetrachloride	6.78	16.96	34.38	42.65	106.62	216.16	
142-82-5	n-Heptane	3.71	9.28	ND	15.20	38.00	ND	ND
78-87-5	1,2-Dichloropropane	6.85	17.12	ND	31.64	79.10	ND	ND
123-91-1	1,4 Dioxane	12.50	31.26	ND	45.03	112.56	ND	ND
74-95-3	Dibromomethane	2.30	5.75	ND	16.35	40.87	ND	ND
79-01-6	Trichloroethene	6.85	17.12	140.47	36.79	91.98	754.53	

75-27-4	Bromodichloromethane	2.46	6.15	ND	16.48	41.19	ND	ND
80-62-6	Methyl methacrylate	4.14	10.34	ND	16.93	42.31	ND	ND
108-10-1	4-Methyl-2-pentanone	4.63	11.57	ND	18.96	47.40	ND	ND
10061-01-5	cis-1,3-Dichloropropene	7.05	17.62	ND	31.99	79.96	ND	ND
108-88-3	Toluene	6.85	17.12	94.75	25.79	64.47	356.74	
10061-02-6	trans-1,3-Dichloropropene	6.92	17.29	ND	31.38	78.46	ND	ND
79-00-5	1,1,2-Trichloroethane	6.78	16.96	260.46	36.99	92.47	1,420.35	E
591-78-6	2-Hexanone	4.34	10.86	ND	17.79	44.47	ND	ND
142-28-9	1,3-Dichloropropane	4.02	10.06	ND	18.58	46.46	ND	ND
111-65-9	Octane	3.34	8.35	ND	15.58	38.96	ND	ND
124-48-1	Dibromochloromethane	2.44	6.10	ND	20.78	51.95	ND	ND
106-93-4	1,2-Dibromoethane	6.92	17.29	ND	53.12	132.81	ND	ND
127-18-4	Tetrachloroethene	6.78	16.96	26.42	45.97	114.93	179.05	
108-90-7	Chlorobenzene	6.78	16.96	ND	31.22	78.06	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	2.53	6.33	5.05	17.38	43.45	34.64	J
100-41-4	Ethylbenzene	6.92	17.29	16.67	30.03	75.06	72.36	J
1330-20-7	m,p-Xylenes	13.70	34.25	28.49	59.47	148.68	123.70	J
111-84-2	Nonane	2.91	7.28	ND	15.28	38.19	ND	ND
100-42-5	Styrene	6.85	17.12	ND	29.18	72.94	ND	ND
75-25-2	Bromoform	1.64	4.11	ND	16.97	42.42	ND	ND
95-47-6	o-Xylene	6.78	16.96	43.24	29.45	73.62	187.72	
79-34-5	1,1,2,2-Tetrachloroethane	6.78	16.96	ND	46.53	116.32	ND	ND
96-18-4	1,2,3-Trichloropropane	3.01	7.53	ND	18.15	45.38	ND	ND
103-65-1	n-Propylbenzene	4.59	11.47	ND	22.55	56.37	ND	ND
98-82-8	Isopropylbenzene	4.66	11.64	ND	22.87	57.18	ND	ND
622-96-8	4-Ethyltoluene	3.78	9.44	ND	18.56	46.40	ND	ND
108-67-8	1,3,5-Trimethylbenzene	7.05	17.62	ND	34.64	86.59	ND	ND
124-18-5	Decane	3.10	7.75	ND	18.03	45.07	ND	ND
98-06-6	tert-butyl benzene	4.06	10.14	ND	22.25	55.64	ND	ND
95-63-6	1,2,4-Trimethylbenzene	6.78	16.96	ND	33.33	83.32	ND	ND
538-93-2	i-Butylbenzene	4.06	10.14	ND	22.25	55.64	ND	ND
135-98-8	sec-butylbenzene	4.32	10.81	ND	23.71	59.28	ND	ND
541-73-1	1,3-Dichlorobenzene	6.78	16.96	ND	40.76	101.90	ND	ND
99-87-6	Isopropyltoluene	4.26	10.64	ND	23.35	58.37	ND	ND
100-44-7	Benzyl chloride	3.91	9.78	ND	20.24	50.59	ND	ND
106-46-7	1,4-Dichlorobenzene	6.78	16.96	ND	40.76	101.90	ND	ND
104-51-8	n-Butylbenzene	3.99	9.98	ND	21.89	54.72	ND	ND
95-50-1	1,2-Dichlorobenzene	6.65	16.63	ND	39.96	99.90	ND	ND
120-82-1	1,2,4-Trichlorobenzene	6.85	17.12	33.33	50.79	126.98	247.17	
91-20-3	Naphthalene	1.46	3.66	1.76	7.67	19.17	9.25	J
87-68-3	Hexachlorobutadiene	6.85	17.12	ND	73.02	182.56	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	8.60	86	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 02**

Description: SVE-OBS-DEEP-40'-POST **Date Sampled:** 05/13/12 **Time:** 14:40
Can/Tube#: 363 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 051812-MC1 **Date Analyzed:** 05/18/12 **Time:** 19:07
Air Volume: 20 ml **Can Dilution Factor:** 1.30

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	6.83	17.06	ND	33.73	84.33	ND	ND
74-87-3	Chloromethane	6.63	16.58	ND	13.69	34.22	ND	ND
76-14-2	Freon 114	6.76	16.90	ND	47.23	118.07	ND	ND
75-01-4	Vinyl chloride	6.76	16.90	ND	17.27	43.18	ND	ND
106-99-0	1,3-Butadiene	6.96	17.39	ND	15.38	38.45	ND	ND
74-83-9	Bromomethane	6.76	16.90	ND	26.23	65.56	ND	ND
75-00-3	Chloroethane	6.76	16.90	ND	17.82	44.56	ND	ND
75-69-4	Trichlorofluoromethane	6.76	16.90	ND	37.97	94.92	ND	ND
67-64-1	Acetone	7.36	18.40	27.79	17.48	43.69	66.01	
75-35-4	1,1-Dichloroethene	6.57	16.41	13.61	26.01	65.01	53.93	J
76-13-1	Freon 113	6.63	16.58	ND	50.79	126.98	ND	ND
75-09-2	Dichloromethane	6.76	16.90	ND	23.46	58.65	ND	ND
75-15-0	Carbon disulfide	5.56	13.89	ND	17.29	43.22	ND	ND
156-60-5	trans-1,2-Dichloroethene	4.32	10.79	ND	17.10	42.74	ND	ND
1634-04-4	Methyl tert butyl ether	4.41	11.03	ND	15.90	39.74	ND	ND
75-34-3	1,1-Dichloroethane	6.57	16.41	ND	26.57	66.42	ND	ND
108-05-4	Vinyl acetate	5.26	13.15	ND	18.51	46.27	ND	ND
78-93-3	2-Butanone	6.09	15.23	ND	17.95	44.88	ND	ND
110-54-3	Hexane	4.42	11.05	ND	15.58	38.94	ND	ND
126-98-7	Methacrylonitrile	6.18	15.44	ND	16.94	42.35	ND	ND
141-78-6	Ethyl acetate	5.24	13.10	ND	18.87	47.17	ND	ND
74-97-5	Bromochloromethane	3.19	7.96	ND	16.85	42.12	ND	ND
78-83-1	Isobutyl alcohol	4.94	12.35	ND	14.96	37.41	ND	ND
156-59-2	cis-1,2-Dichloroethene	6.70	16.74	ND	26.52	66.30	ND	ND
594-20-7	2,2-Dichloropropane	5.32	13.31	ND	24.59	61.48	ND	ND
67-66-3	Chloroform	6.63	16.58	ND	32.36	80.90	ND	ND
71-55-6	1,1,1-Trichloroethane	6.63	16.58	ND	36.16	90.39	ND	ND
107-06-2	1,2-Dichloroethane	6.70	16.74	ND	27.10	67.74	ND	ND
563-58-6	1,1-Dichloropropene	3.94	9.85	ND	17.87	44.68	ND	ND
110-82-7	Cyclohexane	4.58	11.46	ND	15.77	39.43	ND	ND
71-43-2	Benzene	6.70	16.74	ND	21.38	53.44	ND	ND
56-23-5	Carbon tetrachloride	6.63	16.58	ND	41.68	104.21	ND	ND
142-82-5	n-Heptane	3.63	9.07	ND	14.86	37.14	ND	ND
78-87-5	1,2-Dichloropropane	6.70	16.74	ND	30.93	77.32	ND	ND
123-91-1	1,4 Dioxane	12.22	30.55	ND	44.01	110.03	ND	ND
74-95-3	Dibromomethane	2.25	5.62	ND	15.98	39.95	ND	ND
79-01-6	Trichloroethene	6.70	16.74	ND	35.96	89.91	ND	ND

75-27-4	Bromodichloromethane	2.41	6.01	ND	16.10	40.26	ND	ND
80-62-6	Methyl methacrylate	4.04	10.11	ND	16.54	41.36	ND	ND
108-10-1	4-Methyl-2-pentanone	4.52	11.31	ND	18.53	46.33	ND	ND
10061-01-5	cis-1,3-Dichloropropene	6.89	17.23	ND	31.26	78.16	ND	ND
108-88-3	Toluene	6.70	16.74	ND	25.21	63.02	ND	ND
10061-02-6	trans-1,3-Dichloropropene	6.76	16.90	ND	30.67	76.69	ND	ND
79-00-5	1,1,2-Trichloroethane	6.63	16.58	ND	36.16	90.39	ND	ND
591-78-6	2-Hexanone	4.24	10.61	ND	17.39	43.46	ND	ND
142-28-9	1,3-Dichloropropane	3.93	9.83	ND	18.17	45.41	ND	ND
111-65-9	Octane	3.26	8.16	ND	15.23	38.08	ND	ND
124-48-1	Dibromochloromethane	2.39	5.96	ND	20.31	50.78	ND	ND
106-93-4	1,2-Dibromoethane	6.76	16.90	ND	51.93	129.81	ND	ND
127-18-4	Tetrachloroethene	6.63	16.58	ND	44.94	112.34	ND	ND
108-90-7	Chlorobenzene	6.63	16.58	ND	30.52	76.30	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	2.48	6.19	ND	16.99	42.47	ND	ND
100-41-4	Ethylbenzene	6.76	16.90	ND	29.35	73.37	ND	ND
1330-20-7	m,p-Xylenes	13.39	33.48	ND	58.13	145.33	ND	ND
111-84-2	Nonane	2.85	7.12	ND	14.93	37.33	ND	ND
100-42-5	Styrene	6.70	16.74	ND	28.52	71.30	ND	ND
75-25-2	Bromoform	1.61	4.01	ND	16.59	41.46	ND	ND
95-47-6	o-Xylene	6.63	16.58	ND	28.78	71.96	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	6.63	16.58	ND	45.48	113.70	ND	ND
96-18-4	1,2,3-Trichloropropane	2.94	7.36	ND	17.74	44.36	ND	ND
103-65-1	n-Propylbenzene	4.49	11.21	ND	22.04	55.09	ND	ND
98-82-8	Isopropylbenzene	4.55	11.38	ND	22.36	55.89	ND	ND
622-96-8	4-Ethyltoluene	3.69	9.23	ND	18.14	45.35	ND	ND
108-67-8	1,3,5-Trimethylbenzene	6.89	17.23	ND	33.86	84.64	ND	ND
124-18-5	Decane	3.03	7.57	19.65	17.62	44.05	114.29	
98-06-6	tert-butyl benzene	3.97	9.91	ND	21.75	54.38	ND	ND
95-63-6	1,2,4-Trimethylbenzene	6.63	16.58	ND	32.58	81.44	ND	ND
538-93-2	i-Butylbenzene	3.97	9.91	ND	21.75	54.38	ND	ND
135-98-8	sec-butylbenzene	4.23	10.56	ND	23.18	57.95	ND	ND
541-73-1	1,3-Dichlorobenzene	6.63	16.58	ND	39.84	99.60	ND	ND
99-87-6	Isopropyltoluene	4.16	10.40	ND	22.82	57.05	ND	ND
100-44-7	Benzyl chloride	3.82	9.56	ND	19.78	49.45	ND	ND
106-46-7	1,4-Dichlorobenzene	6.63	16.58	ND	39.84	99.60	ND	ND
104-51-8	n-Butylbenzene	3.90	9.75	ND	21.40	53.49	ND	ND
95-50-1	1,2-Dichlorobenzene	6.50	16.25	ND	39.06	97.65	ND	ND
120-82-1	1,2,4-Trichlorobenzene	6.70	16.74	ND	49.65	124.12	ND	ND
91-20-3	Naphthalene	1.43	3.58	ND	7.49	18.74	ND	ND
87-68-3	Hexachlorobutadiene	6.70	16.74	ND	71.38	178.44	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	9.02	90	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 03**

Description: SVE-SP15-04 **Date Sampled:** 05/13/12 **Time:** 13:32
Can/Tube#: 323 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 051812-MC1 **Date Analyzed:** 05/18/12 **Time:** 19:53
Air Volume: 20 ml **Can Dilution Factor:** 1.35

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	7.09	17.72	21.70	35.03	87.57	107.24	
74-87-3	Chloromethane	6.89	17.21	ND	14.21	35.53	ND	ND
76-14-2	Freon 114	7.02	17.55	ND	49.04	122.61	ND	ND
75-01-4	Vinyl chloride	7.02	17.55	ND	17.94	44.84	ND	ND
106-99-0	1,3-Butadiene	7.22	18.06	ND	15.97	39.93	ND	ND
74-83-9	Bromomethane	7.02	17.55	ND	27.23	68.08	ND	ND
75-00-3	Chloroethane	7.02	17.55	ND	18.51	46.27	ND	ND
75-69-4	Trichlorofluoromethane	7.02	17.55	ND	39.43	98.58	ND	ND
67-64-1	Acetone	7.64	19.10	19.57	18.15	45.37	46.49	
75-35-4	1,1-Dichloroethene	6.82	17.04	1,719.34	27.01	67.51	6,810.67	E
76-13-1	Freon 113	6.89	17.21	35.62	52.74	131.86	272.85	
75-09-2	Dichloromethane	7.02	17.55	ND	24.36	60.91	ND	ND
75-15-0	Carbon disulfide	5.77	14.43	ND	17.95	44.88	ND	ND
156-60-5	trans-1,2-Dichloroethene	4.48	11.21	ND	17.75	44.39	ND	ND
1634-04-4	Methyl tert butyl ether	4.58	11.46	ND	16.51	41.27	ND	ND
75-34-3	1,1-Dichloroethane	6.82	17.04	476.14	27.59	68.98	1,926.97	E
108-05-4	Vinyl acetate	5.46	13.65	ND	19.22	48.05	ND	ND
78-93-3	2-Butanone	6.32	15.81	ND	18.64	46.60	ND	ND
110-54-3	Hexane	4.59	11.48	ND	16.17	40.44	ND	ND
126-98-7	Methacrylonitrile	6.41	16.03	ND	17.59	43.97	ND	ND
141-78-6	Ethyl acetate	5.44	13.60	ND	19.59	48.98	ND	ND
74-97-5	Bromochloromethane	3.31	8.27	9.68	17.50	43.74	51.18	
78-83-1	Isobutyl alcohol	5.13	12.83	124.31	15.54	38.85	376.57	
156-59-2	cis-1,2-Dichloroethene	6.95	17.38	31.03	27.54	68.85	122.92	
594-20-7	2,2-Dichloropropane	5.53	13.82	ND	25.54	63.84	ND	ND
67-66-3	Chloroform	6.89	17.21	139.01	33.61	84.01	678.52	
71-55-6	1,1,1-Trichloroethane	6.89	17.21	4,295.53	37.55	93.87	23,424.88	E
107-06-2	1,2-Dichloroethane	6.95	17.38	454.00	28.14	70.34	1,837.35	E
563-58-6	1,1-Dichloropropene	4.09	10.23	ND	18.56	46.40	ND	ND
110-82-7	Cyclohexane	4.76	11.90	ND	16.38	40.95	ND	ND
71-43-2	Benzene	6.95	17.38	20.47	22.20	55.49	65.36	
56-23-5	Carbon tetrachloride	6.89	17.21	84.91	43.29	108.22	533.85	
142-82-5	n-Heptane	3.77	9.42	ND	15.43	38.57	ND	ND
78-87-5	1,2-Dichloropropane	6.95	17.38	ND	32.12	80.29	ND	ND
123-91-1	1,4 Dioxane	12.69	31.73	ND	45.70	114.26	ND	ND
74-95-3	Dibromomethane	2.34	5.84	ND	16.59	41.48	ND	ND
79-01-6	Trichloroethene	6.95	17.38	287.25	37.35	93.36	1,543.00	E

75-27-4	Bromodichloromethane	2.50	6.24	ND	16.72	41.81	ND	ND
80-62-6	Methyl methacrylate	4.20	10.50	ND	17.18	42.95	ND	ND
108-10-1	4-Methyl-2-pentanone	4.70	11.75	ND	19.24	48.11	ND	ND
10061-01-5	cis-1,3-Dichloropropene	7.16	17.89	ND	32.47	81.17	ND	ND
108-88-3	Toluene	6.95	17.38	111.69	26.18	65.44	420.53	
10061-02-6	trans-1,3-Dichloropropene	7.02	17.55	ND	31.85	79.64	ND	ND
79-00-5	1,1,2-Trichloroethane	6.89	17.21	341.14	37.55	93.87	1,860.36	
591-78-6	2-Hexanone	4.41	11.02	ND	18.05	45.14	ND	ND
142-28-9	1,3-Dichloropropane	4.08	10.21	ND	18.86	47.16	ND	ND
111-65-9	Octane	3.39	8.47	ND	15.82	39.55	ND	ND
124-48-1	Dibromochloromethane	2.48	6.19	ND	21.09	52.74	ND	ND
106-93-4	1,2-Dibromoethane	7.02	17.55	ND	53.92	134.81	ND	ND
127-18-4	Tetrachloroethene	6.89	17.21	14.98	46.67	116.66	101.51	J
108-90-7	Chlorobenzene	6.89	17.21	ND	31.69	79.23	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	2.57	6.43	ND	17.64	44.10	ND	ND
100-41-4	Ethylbenzene	7.02	17.55	23.69	30.48	76.19	102.85	
1330-20-7	m,p-Xylenes	13.91	34.76	169.34	60.37	150.92	735.19	
111-84-2	Nonane	2.96	7.39	ND	15.51	38.77	ND	ND
100-42-5	Styrene	6.95	17.38	ND	29.62	74.04	ND	ND
75-25-2	Bromoform	1.67	4.17	ND	17.22	43.06	ND	ND
95-47-6	o-Xylene	6.89	17.21	78.78	29.89	74.73	342.02	
79-34-5	1,1,2,2-Tetrachloroethane	6.89	17.21	ND	47.23	118.07	ND	ND
96-18-4	1,2,3-Trichloropropane	3.06	7.64	ND	18.42	46.06	ND	ND
103-65-1	n-Propylbenzene	4.66	11.64	9.48	22.89	57.21	46.58	J
98-82-8	Isopropylbenzene	4.73	11.81	16.38	23.22	58.04	80.47	
622-96-8	4-Ethyltoluene	3.83	9.59	13.29	18.84	47.10	65.30	
108-67-8	1,3,5-Trimethylbenzene	7.16	17.89	12.27	35.16	87.89	60.31	J
124-18-5	Decane	3.15	7.86	ND	18.30	45.74	ND	ND
98-06-6	tert-butyl benzene	4.12	10.29	9.19	22.59	56.47	50.40	J
95-63-6	1,2,4-Trimethylbenzene	6.89	17.21	52.82	33.83	84.58	259.53	
538-93-2	i-Butylbenzene	4.12	10.29	ND	22.59	56.47	ND	ND
135-98-8	sec-butylbenzene	4.39	10.97	ND	24.07	60.17	ND	ND
541-73-1	1,3-Dichlorobenzene	6.89	17.21	ND	41.37	103.43	ND	ND
99-87-6	Isopropyltoluene	4.32	10.80	ND	23.70	59.25	ND	ND
100-44-7	Benzyl chloride	3.97	9.92	ND	20.54	51.35	ND	ND
106-46-7	1,4-Dichlorobenzene	6.89	17.21	ND	41.37	103.43	ND	ND
104-51-8	n-Butylbenzene	4.05	10.13	ND	22.22	55.55	ND	ND
95-50-1	1,2-Dichlorobenzene	6.75	16.88	ND	40.56	101.41	ND	ND
120-82-1	1,2,4-Trichlorobenzene	6.95	17.38	18.03	51.56	128.89	133.67	
91-20-3	Naphthalene	1.49	3.71	63.80	7.78	19.46	334.37	
87-68-3	Hexachlorobutadiene	6.95	17.38	ND	74.12	185.31	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	8.49	85	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 04**

Description: SVE-AREAL-051312 **Date Sampled:** 05/13/12 **Time:** 08:28
Can/Tube#: 935 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 051812-MC1 **Date Analyzed:** 05/18/12 **Time:** 20:35
Air Volume: 20 ml **Can Dilution Factor:** 3.12

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	16.38	40.95	ND	80.96	202.39	ND	ND
74-87-3	Chloromethane	15.91	39.78	ND	32.85	82.12	ND	ND
76-14-2	Freon 114	16.22	40.56	ND	113.35	283.36	ND	ND
75-01-4	Vinyl chloride	16.22	40.56	ND	41.45	103.63	ND	ND
106-99-0	1,3-Butadiene	16.69	41.73	ND	36.92	92.29	ND	ND
74-83-9	Bromomethane	16.22	40.56	ND	62.94	157.35	ND	ND
75-00-3	Chloroethane	16.22	40.56	ND	42.78	106.95	ND	ND
75-69-4	Trichlorofluoromethane	16.22	40.56	ND	91.13	227.82	ND	ND
67-64-1	Acetone	17.66	44.15	ND	41.94	104.86	ND	ND
75-35-4	1,1-Dichloroethene	15.76	39.39	92.71	62.41	156.03	367.24	
76-13-1	Freon 113	15.91	39.78	ND	121.90	304.75	ND	ND
75-09-2	Dichloromethane	16.22	40.56	ND	56.31	140.77	ND	ND
75-15-0	Carbon disulfide	13.34	33.35	ND	41.49	103.73	ND	ND
156-60-5	trans-1,2-Dichloroethene	10.36	25.90	ND	41.03	102.58	ND	ND
1634-04-4	Methyl tert butyl ether	10.59	26.48	ND	38.15	95.37	ND	ND
75-34-3	1,1-Dichloroethane	15.76	39.39	ND	63.77	159.41	ND	ND
108-05-4	Vinyl acetate	12.62	31.55	ND	44.42	111.05	ND	ND
78-93-3	2-Butanone	14.62	36.54	ND	43.08	107.71	ND	ND
110-54-3	Hexane	10.61	26.52	ND	37.38	93.45	ND	ND
126-98-7	Methacrylonitrile	14.82	37.05	ND	40.65	101.63	ND	ND
141-78-6	Ethyl acetate	12.57	31.43	ND	45.28	113.21	ND	ND
74-97-5	Bromochloromethane	7.64	19.11	ND	40.44	101.09	ND	ND
78-83-1	Isobutyl alcohol	11.86	29.64	ND	35.91	89.78	ND	ND
156-59-2	cis-1,2-Dichloroethene	16.07	40.17	ND	63.65	159.12	ND	ND
594-20-7	2,2-Dichloropropane	12.78	31.94	ND	59.02	147.55	ND	ND
67-66-3	Chloroform	15.91	39.78	ND	77.67	194.17	ND	ND
71-55-6	1,1,1-Trichloroethane	15.91	39.78	68.56	86.77	216.93	373.89	
107-06-2	1,2-Dichloroethane	16.07	40.17	ND	65.03	162.57	ND	ND
563-58-6	1,1-Dichloropropene	9.45	23.63	ND	42.90	107.24	ND	ND
110-82-7	Cyclohexane	11.00	27.50	ND	37.86	94.64	ND	ND
71-43-2	Benzene	16.07	40.17	ND	51.30	128.25	ND	ND
56-23-5	Carbon tetrachloride	15.91	39.78	ND	100.04	250.11	ND	ND
142-82-5	n-Heptane	8.70	21.76	ND	35.66	89.14	ND	ND
78-87-5	1,2-Dichloropropane	16.07	40.17	ND	74.22	185.56	ND	ND
123-91-1	1,4 Dioxane	29.33	73.32	ND	105.62	264.06	ND	ND
74-95-3	Dibromomethane	5.40	13.49	ND	38.35	95.87	ND	ND
79-01-6	Trichloroethene	16.07	40.17	ND	86.31	215.78	ND	ND

75-27-4	Bromodichloromethane	5.77	14.43	ND	38.65	96.62	ND	ND
80-62-6	Methyl methacrylate	9.70	24.26	ND	39.71	99.26	ND	ND
108-10-1	4-Methyl-2-pentanone	10.86	27.14	ND	44.47	111.18	ND	ND
10061-01-5	cis-1,3-Dichloropropene	16.54	41.34	ND	75.03	187.58	ND	ND
108-88-3	Toluene	16.07	40.17	27.70	60.50	151.24	104.29	J
10061-02-6	trans-1,3-Dichloropropene	16.22	40.56	ND	73.62	184.05	ND	ND
79-00-5	1,1,2-Trichloroethane	15.91	39.78	ND	86.77	216.93	ND	ND
591-78-6	2-Hexanone	10.19	25.47	ND	41.73	104.32	ND	ND
142-28-9	1,3-Dichloropropane	9.44	23.60	ND	43.60	108.99	ND	ND
111-65-9	Octane	7.83	19.58	ND	36.56	91.40	ND	ND
124-48-1	Dibromochloromethane	5.73	14.31	ND	48.75	121.88	ND	ND
106-93-4	1,2-Dibromoethane	16.22	40.56	ND	124.62	311.55	ND	ND
127-18-4	Tetrachloroethene	15.91	39.78	ND	107.85	269.62	ND	ND
108-90-7	Chlorobenzene	15.91	39.78	ND	73.24	183.11	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	5.94	14.86	ND	40.77	101.93	ND	ND
100-41-4	Ethylbenzene	16.22	40.56	ND	70.43	176.09	ND	ND
1330-20-7	m,p-Xylenes	32.14	80.34	ND	139.51	348.79	ND	ND
111-84-2	Nonane	6.83	17.08	ND	35.84	89.59	ND	ND
100-42-5	Styrene	16.07	40.17	ND	68.44	171.11	ND	ND
75-25-2	Bromoform	3.85	9.63	ND	39.80	99.51	ND	ND
95-47-6	o-Xylene	15.91	39.78	ND	69.08	172.70	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	15.91	39.78	ND	109.15	272.87	ND	ND
96-18-4	1,2,3-Trichloropropane	7.07	17.67	ND	42.58	106.45	ND	ND
103-65-1	n-Propylbenzene	10.76	26.91	ND	52.89	132.23	ND	ND
98-82-8	Isopropylbenzene	10.92	27.30	ND	53.66	134.14	ND	ND
622-96-8	4-Ethyltoluene	8.86	22.15	ND	43.54	108.85	ND	ND
108-67-8	1,3,5-Trimethylbenzene	16.54	41.34	ND	81.25	203.13	ND	ND
124-18-5	Decane	7.27	18.17	ND	42.29	105.72	ND	ND
98-06-6	tert-butyl benzene	9.52	23.79	ND	52.20	130.51	ND	ND
95-63-6	1,2,4-Trimethylbenzene	15.91	39.78	ND	78.19	195.47	ND	ND
538-93-2	i-Butylbenzene	9.52	23.79	ND	52.20	130.51	ND	ND
135-98-8	sec-butylbenzene	10.14	25.35	ND	55.63	139.07	ND	ND
541-73-1	1,3-Dichlorobenzene	15.91	39.78	ND	95.62	239.05	ND	ND
99-87-6	Isopropyltoluene	9.98	24.96	ND	54.77	136.93	ND	ND
100-44-7	Benzyl chloride	9.17	22.93	ND	47.47	118.68	ND	ND
106-46-7	1,4-Dichlorobenzene	15.91	39.78	ND	95.62	239.05	ND	ND
104-51-8	n-Butylbenzene	9.36	23.40	ND	51.35	128.37	ND	ND
95-50-1	1,2-Dichlorobenzene	15.60	39.00	ND	93.74	234.36	ND	ND
120-82-1	1,2,4-Trichlorobenzene	16.07	40.17	ND	119.15	297.88	ND	ND
91-20-3	Naphthalene	3.43	8.58	39.54	17.99	44.97	207.22	
87-68-3	Hexachlorobutadiene	16.07	40.17	ND	171.31	428.27	ND	ND

	Surrogate Recovery		Spike ppbV	Measured ppbV	% Rec.	QC LCL	Limits UCL	Flag * = Out
2037-26-5	Toluene-d8		10.00	8.04	80	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 05**

Description: SVE-CARBON-POSF01 **Date Sampled:** 05/12/12 **Time:** 19:00
Can/Tube#: 319 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 051812-MC1 **Date Analyzed:** 05/18/12 **Time:** 21:16
Air Volume: 20 ml **Can Dilution Factor:** 1.31

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	6.88	17.19	ND	33.99	84.98	ND	ND
74-87-3	Chloromethane	6.68	16.70	38.09	13.79	34.48	78.63	
76-14-2	Freon 114	6.81	17.03	ND	47.59	118.98	ND	ND
75-01-4	Vinyl chloride	6.81	17.03	ND	17.40	43.51	ND	ND
106-99-0	1,3-Butadiene	7.01	17.52	ND	15.50	38.75	ND	ND
74-83-9	Bromomethane	6.81	17.03	ND	26.43	66.07	ND	ND
75-00-3	Chloroethane	6.81	17.03	ND	17.96	44.90	ND	ND
75-69-4	Trichlorofluoromethane	6.81	17.03	ND	38.26	95.65	ND	ND
67-64-1	Acetone	7.41	18.54	25.43	17.61	44.03	60.40	
75-35-4	1,1-Dichloroethene	6.62	16.54	14.95	26.21	65.51	59.21	J
76-13-1	Freon 113	6.68	16.70	ND	51.18	127.95	ND	ND
75-09-2	Dichloromethane	6.81	17.03	ND	23.64	59.11	ND	ND
75-15-0	Carbon disulfide	5.60	14.00	ND	17.42	43.55	ND	ND
156-60-5	trans-1,2-Dichloroethene	4.35	10.87	ND	17.23	43.07	ND	ND
1634-04-4	Methyl tert butyl ether	4.45	11.12	ND	16.02	40.04	ND	ND
75-34-3	1,1-Dichloroethane	6.62	16.54	ND	26.77	66.93	ND	ND
108-05-4	Vinyl acetate	5.30	13.25	ND	18.65	46.63	ND	ND
78-93-3	2-Butanone	6.14	15.34	ND	18.09	45.22	ND	ND
110-54-3	Hexane	4.45	11.14	ND	15.70	39.24	ND	ND
126-98-7	Methacrylonitrile	6.22	15.56	ND	17.07	42.67	ND	ND
141-78-6	Ethyl acetate	5.28	13.20	ND	19.01	47.53	ND	ND
74-97-5	Bromochloromethane	3.21	8.02	ND	16.98	42.44	ND	ND
78-83-1	Isobutyl alcohol	4.98	12.45	ND	15.08	37.70	ND	ND
156-59-2	cis-1,2-Dichloroethene	6.75	16.87	ND	26.72	66.81	ND	ND
594-20-7	2,2-Dichloropropane	5.36	13.41	ND	24.78	61.95	ND	ND
67-66-3	Chloroform	6.68	16.70	ND	32.61	81.52	ND	ND
71-55-6	1,1,1-Trichloroethane	6.68	16.70	9.38	36.43	91.08	51.15	J
107-06-2	1,2-Dichloroethane	6.75	16.87	ND	27.30	68.26	ND	ND
563-58-6	1,1-Dichloropropene	3.97	9.92	ND	18.01	45.03	ND	ND
110-82-7	Cyclohexane	4.62	11.54	ND	15.89	39.74	ND	ND
71-43-2	Benzene	6.75	16.87	6.93	21.54	53.85	22.12	J
56-23-5	Carbon tetrachloride	6.68	16.70	ND	42.01	105.01	ND	ND
142-82-5	n-Heptane	3.65	9.14	ND	14.97	37.43	ND	ND
78-87-5	1,2-Dichloropropane	6.75	16.87	ND	31.16	77.91	ND	ND
123-91-1	1,4 Dioxane	12.31	30.79	ND	44.35	110.87	ND	ND
74-95-3	Dibromomethane	2.27	5.67	ND	16.10	40.25	ND	ND
79-01-6	Trichloroethene	6.75	16.87	ND	36.24	90.60	ND	ND

75-27-4	Bromodichloromethane	2.42	6.06	ND	16.23	40.57	ND	ND
80-62-6	Methyl methacrylate	4.07	10.19	ND	16.67	41.68	ND	ND
108-10-1	4-Methyl-2-pentanone	4.56	11.40	ND	18.67	46.68	ND	ND
10061-01-5	cis-1,3-Dichloropropene	6.94	17.36	ND	31.50	78.76	ND	ND
108-88-3	Toluene	6.75	16.87	35.23	25.40	63.50	132.66	
10061-02-6	trans-1,3-Dichloropropene	6.81	17.03	ND	30.91	77.28	ND	ND
79-00-5	1,1,2-Trichloroethane	6.68	16.70	ND	36.43	91.08	ND	ND
591-78-6	2-Hexanone	4.28	10.69	ND	17.52	43.80	ND	ND
142-28-9	1,3-Dichloropropane	3.96	9.91	4.12	18.31	45.76	19.02	J
111-65-9	Octane	3.29	8.22	ND	15.35	38.38	ND	ND
124-48-1	Dibromochloromethane	2.40	6.01	ND	20.47	51.17	ND	ND
106-93-4	1,2-Dibromoethane	6.81	17.03	ND	52.32	130.81	ND	ND
127-18-4	Tetrachloroethene	6.68	16.70	ND	45.28	113.21	ND	ND
108-90-7	Chlorobenzene	6.68	16.70	ND	30.75	76.88	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	2.50	6.24	ND	17.12	42.80	ND	ND
100-41-4	Ethylbenzene	6.81	17.03	9.77	29.57	73.93	42.41	J
1330-20-7	m,p-Xylenes	13.49	33.73	52.76	58.58	146.45	229.06	
111-84-2	Nonane	2.87	7.17	ND	15.05	37.62	ND	ND
100-42-5	Styrene	6.75	16.87	ND	28.74	71.84	ND	ND
75-25-2	Bromoform	1.62	4.04	ND	16.71	41.78	ND	ND
95-47-6	o-Xylene	6.68	16.70	27.11	29.00	72.51	117.68	
79-34-5	1,1,2,2-Tetrachloroethane	6.68	16.70	ND	45.83	114.57	ND	ND
96-18-4	1,2,3-Trichloropropane	2.97	7.42	ND	17.88	44.70	ND	ND
103-65-1	n-Propylbenzene	4.52	11.30	7.26	22.21	55.52	35.68	J
98-82-8	Isopropylbenzene	4.59	11.46	29.93	22.53	56.32	147.04	
622-96-8	4-Ethyltoluene	3.72	9.30	26.57	18.28	45.70	130.54	
108-67-8	1,3,5-Trimethylbenzene	6.94	17.36	16.37	34.12	85.29	80.46	J
124-18-5	Decane	3.05	7.63	ND	17.76	44.39	ND	ND
98-06-6	tert-butyl benzene	4.00	9.99	7.58	21.92	54.80	41.60	J
95-63-6	1,2,4-Trimethylbenzene	6.68	16.70	43.42	32.83	82.07	213.36	
538-93-2	i-Butylbenzene	4.00	9.99	ND	21.92	54.80	ND	ND
135-98-8	sec-butylbenzene	4.26	10.64	ND	23.36	58.39	ND	ND
541-73-1	1,3-Dichlorobenzene	6.68	16.70	ND	40.15	100.37	ND	ND
99-87-6	Isopropyltoluene	4.19	10.48	ND	23.00	57.49	ND	ND
100-44-7	Benzyl chloride	3.85	9.63	ND	19.93	49.83	ND	ND
106-46-7	1,4-Dichlorobenzene	6.68	16.70	ND	40.15	100.37	ND	ND
104-51-8	n-Butylbenzene	3.93	9.83	ND	21.56	53.90	ND	ND
95-50-1	1,2-Dichlorobenzene	6.55	16.38	ND	39.36	98.40	ND	ND
120-82-1	1,2,4-Trichlorobenzene	6.75	16.87	ND	50.03	125.07	ND	ND
91-20-3	Naphthalene	1.44	3.60	46.31	7.55	18.88	242.67	
87-68-3	Hexachlorobutadiene	6.75	16.87	ND	71.93	179.82	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	8.07	81	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 06**

Description: SVE-EXT-SHAL-POST **Date Sampled:** 05/12/12 **Time:** 19:25
Can/Tube#: 305 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 052112-MC1 **Date Analyzed:** 05/21/12 **Time:** 15:01
Air Volume: 20 ml **Can Dilution Factor:** 1.32

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	6.93	17.33	12.95	34.25	85.63	63.98	J
74-87-3	Chloromethane	6.73	16.83	24.28	13.90	34.74	50.13	
76-14-2	Freon 114	6.86	17.16	ND	47.95	119.88	ND	ND
75-01-4	Vinyl chloride	6.86	17.16	16.47	17.54	43.84	42.08	J
106-99-0	1,3-Butadiene	7.06	17.66	15.02	15.62	39.05	33.22	J
74-83-9	Bromomethane	6.86	17.16	ND	26.63	66.57	ND	ND
75-00-3	Chloroethane	6.86	17.16	ND	18.10	45.25	ND	ND
75-69-4	Trichlorofluoromethane	6.86	17.16	ND	38.55	96.38	ND	ND
67-64-1	Acetone	7.47	18.68	18.00	17.74	44.36	42.75	J
75-35-4	1,1-Dichloroethene	6.67	16.67	159.49	26.41	66.01	631.77	
76-13-1	Freon 113	6.73	16.83	ND	51.57	128.93	ND	ND
75-09-2	Dichloromethane	6.86	17.16	ND	23.82	59.56	ND	ND
75-15-0	Carbon disulfide	5.64	14.11	ND	17.55	43.89	ND	ND
156-60-5	trans-1,2-Dichloroethene	4.38	10.96	12.54	17.36	43.40	49.65	
1634-04-4	Methyl tert butyl ether	4.48	11.20	ND	16.14	40.35	ND	ND
75-34-3	1,1-Dichloroethane	6.67	16.67	1,086.13	26.98	67.44	4,395.65	E
108-05-4	Vinyl acetate	5.34	13.35	ND	18.79	46.98	ND	ND
78-93-3	2-Butanone	6.18	15.46	ND	18.23	45.57	ND	ND
110-54-3	Hexane	4.49	11.22	ND	15.81	39.54	ND	ND
126-98-7	Methacrylonitrile	6.27	15.68	ND	17.20	43.00	ND	ND
141-78-6	Ethyl acetate	5.32	13.30	258.63	19.16	47.90	931.45	
74-97-5	Bromochloromethane	3.23	8.09	19.96	17.11	42.77	105.58	
78-83-1	Isobutyl alcohol	5.02	12.54	104.21	15.19	37.99	315.68	
156-59-2	cis-1,2-Dichloroethene	6.80	17.00	71.04	26.93	67.32	281.41	
594-20-7	2,2-Dichloropropane	5.41	13.51	ND	24.97	62.42	ND	ND
67-66-3	Chloroform	6.73	16.83	311.73	32.86	82.15	1,521.55	E
71-55-6	1,1,1-Trichloroethane	6.73	16.83	355.67	36.71	91.78	1,939.57	E
107-06-2	1,2-Dichloroethane	6.80	17.00	175.29	27.51	68.78	709.43	
563-58-6	1,1-Dichloropropene	4.00	10.00	ND	18.15	45.37	ND	ND
110-82-7	Cyclohexane	4.65	11.63	ND	16.02	40.04	ND	ND
71-43-2	Benzene	6.80	17.00	21.46	21.70	54.26	68.51	
56-23-5	Carbon tetrachloride	6.73	16.83	168.31	42.33	105.81	1,058.19	E
142-82-5	n-Heptane	3.68	9.21	ND	15.09	37.71	ND	ND
78-87-5	1,2-Dichloropropane	6.80	17.00	ND	31.40	78.51	ND	ND
123-91-1	1,4 Dioxane	12.41	31.02	92.90	44.69	111.72	334.57	
74-95-3	Dibromomethane	2.28	5.71	ND	16.22	40.56	ND	ND
79-01-6	Trichloroethene	6.80	17.00	708.43	36.52	91.29	3,805.38	E

75-27-4	Bromodichloromethane	2.44	6.11	ND	16.35	40.88	ND	ND
80-62-6	Methyl methacrylate	4.11	10.26	ND	16.80	42.00	ND	ND
108-10-1	4-Methyl-2-pentanone	4.59	11.48	ND	18.82	47.04	ND	ND
10061-01-5	cis-1,3-Dichloropropene	7.00	17.49	ND	31.75	79.36	ND	ND
108-88-3	Toluene	6.80	17.00	156.62	25.59	63.99	589.69	
10061-02-6	trans-1,3-Dichloropropene	6.86	17.16	ND	31.15	77.87	ND	ND
79-00-5	1,1,2-Trichloroethane	6.73	16.83	702.88	36.71	91.78	3,833.04	E
591-78-6	2-Hexanone	4.31	10.77	ND	17.65	44.13	ND	ND
142-28-9	1,3-Dichloropropane	3.99	9.98	ND	18.45	46.11	ND	ND
111-65-9	Octane	3.31	8.28	ND	15.47	38.67	ND	ND
124-48-1	Dibromochloromethane	2.42	6.06	ND	20.63	51.56	ND	ND
106-93-4	1,2-Dibromoethane	6.86	17.16	ND	52.72	131.81	ND	ND
127-18-4	Tetrachloroethene	6.73	16.83	23.90	45.63	114.07	161.97	
108-90-7	Chlorobenzene	6.73	16.83	8.28	30.99	77.47	38.10	J
630-20-6	1,1,1,2-Tetrachloroethane	2.51	6.29	5.30	17.25	43.12	36.35	J
100-41-4	Ethylbenzene	6.86	17.16	12.61	29.80	74.50	54.74	J
1330-20-7	m,p-Xylenes	13.60	33.99	21.72	59.03	147.56	94.30	J
111-84-2	Nonane	2.89	7.23	ND	15.16	37.90	ND	ND
100-42-5	Styrene	6.80	17.00	ND	28.96	72.39	ND	ND
75-25-2	Bromoform	1.63	4.08	ND	16.84	42.10	ND	ND
95-47-6	o-Xylene	6.73	16.83	24.48	29.23	73.07	106.26	
79-34-5	1,1,2,2-Tetrachloroethane	6.73	16.83	ND	46.18	115.45	ND	ND
96-18-4	1,2,3-Trichloropropane	2.99	7.47	ND	18.02	45.04	ND	ND
103-65-1	n-Propylbenzene	4.55	11.39	ND	22.38	55.94	ND	ND
98-82-8	Isopropylbenzene	4.62	11.55	5.45	22.70	56.75	26.76	J
622-96-8	4-Ethyltoluene	3.75	9.37	4.42	18.42	46.05	21.71	J
108-67-8	1,3,5-Trimethylbenzene	7.00	17.49	ND	34.38	85.94	ND	ND
124-18-5	Decane	3.08	7.69	ND	17.89	44.73	ND	ND
98-06-6	tert-butyl benzene	4.03	10.07	ND	22.09	55.22	ND	ND
95-63-6	1,2,4-Trimethylbenzene	6.73	16.83	ND	33.08	82.70	ND	ND
538-93-2	i-Butylbenzene	4.03	10.07	ND	22.09	55.22	ND	ND
135-98-8	sec-butylbenzene	4.29	10.73	ND	23.54	58.84	ND	ND
541-73-1	1,3-Dichlorobenzene	6.73	16.83	ND	40.45	101.14	ND	ND
99-87-6	Isopropyltoluene	4.22	10.56	ND	23.17	57.93	ND	ND
100-44-7	Benzyl chloride	3.88	9.70	ND	20.08	50.21	ND	ND
106-46-7	1,4-Dichlorobenzene	6.73	16.83	ND	40.45	101.14	ND	ND
104-51-8	n-Butylbenzene	3.96	9.90	ND	21.72	54.31	ND	ND
95-50-1	1,2-Dichlorobenzene	6.60	16.50	ND	39.66	99.15	ND	ND
120-82-1	1,2,4-Trichlorobenzene	6.80	17.00	12.26	50.41	126.03	90.93	J
91-20-3	Naphthalene	1.45	3.63	5.70	7.61	19.02	29.87	
87-68-3	Hexachlorobutadiene	6.80	17.00	ND	72.48	181.19	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	8.42	84	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 07**

Description: SVE-SP15-02 **Date Sampled:** 05/12/12 **Time:** 17:38
Can/Tube#: 315 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 052112-MC1 **Date Analyzed:** 05/21/12 **Time:** 17:01
Air Volume: 2 ml **Can Dilution Factor:** 1.28

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	67.20	168.00	ND	332.12	830.31	ND	ND
74-87-3	Chloromethane	65.28	163.20	74.54	134.76	336.91	153.88	J
76-14-2	Freon 114	66.56	166.40	ND	465.01	1,162.52	ND	ND
75-01-4	Vinyl chloride	66.56	166.40	ND	170.06	425.15	ND	ND
106-99-0	1,3-Butadiene	68.48	171.20	72.33	151.45	378.62	159.96	J
74-83-9	Bromomethane	66.56	166.40	ND	258.22	645.54	ND	ND
75-00-3	Chloroethane	66.56	166.40	ND	175.50	438.75	ND	ND
75-69-4	Trichlorofluoromethane	66.56	166.40	ND	373.86	934.64	ND	ND
67-64-1	Acetone	72.45	181.12	78.03	172.07	430.18	185.34	J
75-35-4	1,1-Dichloroethene	64.64	161.60	21,533.96	256.05	640.13	85,300.62	
76-13-1	Freon 113	65.28	163.20	ND	500.10	1,250.24	ND	ND
75-09-2	Dichloromethane	66.56	166.40	ND	231.01	577.52	ND	ND
75-15-0	Carbon disulfide	54.72	136.80	ND	170.23	425.57	ND	ND
156-60-5	trans-1,2-Dichloroethene	42.50	106.24	ND	168.34	420.84	ND	ND
1634-04-4	Methyl tert butyl ether	43.46	108.64	ND	156.51	391.26	ND	ND
75-34-3	1,1-Dichloroethane	64.64	161.60	3,715.63	261.60	654.01	15,037.36	
108-05-4	Vinyl acetate	51.78	129.44	ND	182.24	455.59	ND	ND
78-93-3	2-Butanone	59.97	149.92	ND	176.75	441.87	ND	ND
110-54-3	Hexane	43.52	108.80	195.83	153.36	383.39	690.06	
126-98-7	Methacrylonitrile	60.80	152.00	ND	166.77	416.94	ND	ND
141-78-6	Ethyl acetate	51.58	128.96	801.75	185.78	464.45	2,887.47	
74-97-5	Bromochloromethane	31.36	78.40	58.21	165.89	414.72	307.92	J
78-83-1	Isobutyl alcohol	48.64	121.60	935.39	147.34	368.35	2,833.45	
156-59-2	cis-1,2-Dichloroethene	65.92	164.80	221.14	261.12	652.81	875.99	
594-20-7	2,2-Dichloropropane	52.42	131.04	ND	242.13	605.32	ND	ND
67-66-3	Chloroform	65.28	163.20	1,021.01	318.63	796.58	4,983.57	
71-55-6	1,1,1-Trichloroethane	65.28	163.20	53,668.43	355.99	889.98	292,670.69	
107-06-2	1,2-Dichloroethane	65.92	164.80	ND	266.78	666.96	ND	ND
563-58-6	1,1-Dichloropropene	38.78	96.96	ND	175.99	439.97	ND	ND
110-82-7	Cyclohexane	45.12	112.80	65.31	155.31	388.26	224.80	J
71-43-2	Benzene	65.92	164.80	81.32	210.46	526.15	259.62	J
56-23-5	Carbon tetrachloride	65.28	163.20	746.55	410.43	1,026.08	4,693.74	
142-82-5	n-Heptane	35.71	89.28	ND	146.28	365.70	ND	ND
78-87-5	1,2-Dichloropropane	65.92	164.80	ND	304.51	761.27	ND	ND
123-91-1	1,4 Dioxane	120.32	300.80	ND	433.33	1,083.32	ND	ND
74-95-3	Dibromomethane	22.14	55.36	ND	157.33	393.32	ND	ND
79-01-6	Trichloroethene	65.92	164.80	3,045.36	354.09	885.23	16,358.34	

75-27-4	Bromodichloromethane	23.68	59.20	ND	158.56	396.41	ND	ND
80-62-6	Methyl methacrylate	39.81	99.52	ND	162.90	407.24	ND	ND
108-10-1	4-Methyl-2-pentanone	44.54	111.36	ND	182.46	456.14	ND	ND
10061-01-5	cis-1,3-Dichloropropene	67.84	169.60	ND	307.83	769.58	ND	ND
108-88-3	Toluene	65.92	164.80	965.99	248.19	620.47	3,636.95	
10061-02-6	trans-1,3-Dichloropropene	66.56	166.40	ND	302.02	755.06	ND	ND
79-00-5	1,1,2-Trichloroethane	65.28	163.20	2,640.51	355.99	889.98	14,399.50	
591-78-6	2-Hexanone	41.79	104.48	ND	171.18	427.96	ND	ND
142-28-9	1,3-Dichloropropane	38.72	96.80	ND	178.86	447.16	ND	ND
111-65-9	Octane	32.13	80.32	ND	149.99	374.97	ND	ND
124-48-1	Dibromochloromethane	23.49	58.72	ND	200.00	500.01	ND	ND
106-93-4	1,2-Dibromoethane	66.56	166.40	ND	511.26	1,278.16	ND	ND
127-18-4	Tetrachloroethene	65.28	163.20	111.11	442.46	1,106.14	753.06	J
108-90-7	Chlorobenzene	65.28	163.20	ND	300.49	751.21	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	24.38	60.96	ND	167.26	418.16	ND	ND
100-41-4	Ethylbenzene	66.56	166.40	ND	288.96	722.41	ND	ND
1330-20-7	m,p-Xylenes	131.84	329.60	ND	572.37	1,430.92	ND	ND
111-84-2	Nonane	28.03	70.08	ND	147.02	367.56	ND	ND
100-42-5	Styrene	65.92	164.80	ND	280.80	701.99	ND	ND
75-25-2	Bromoform	15.81	39.52	ND	163.30	408.25	ND	ND
95-47-6	o-Xylene	65.28	163.20	104.10	283.41	708.52	451.94	J
79-34-5	1,1,2,2-Tetrachloroethane	65.28	163.20	ND	447.79	1,119.48	ND	ND
96-18-4	1,2,3-Trichloropropane	28.99	72.48	ND	174.69	436.74	ND	ND
103-65-1	n-Propylbenzene	44.16	110.40	ND	216.99	542.47	ND	ND
98-82-8	Isopropylbenzene	44.80	112.00	ND	220.13	550.33	ND	ND
622-96-8	4-Ethyltoluene	36.35	90.88	ND	178.62	446.56	ND	ND
108-67-8	1,3,5-Trimethylbenzene	67.84	169.60	ND	333.35	833.36	ND	ND
124-18-5	Decane	29.82	74.56	ND	173.49	433.73	ND	ND
98-06-6	tert-butyl benzene	39.04	97.60	ND	214.17	535.44	ND	ND
95-63-6	1,2,4-Trimethylbenzene	65.28	163.20	ND	320.77	801.92	ND	ND
538-93-2	i-Butylbenzene	39.04	97.60	ND	214.17	535.44	ND	ND
135-98-8	sec-butylbenzene	41.60	104.00	ND	228.22	570.55	ND	ND
541-73-1	1,3-Dichlorobenzene	65.28	163.20	ND	392.29	980.71	ND	ND
99-87-6	Isopropyltoluene	40.96	102.40	ND	224.71	561.77	ND	ND
100-44-7	Benzyl chloride	37.63	94.08	ND	194.76	486.90	ND	ND
106-46-7	1,4-Dichlorobenzene	65.28	163.20	ND	392.29	980.71	ND	ND
104-51-8	n-Butylbenzene	38.40	96.00	ND	210.66	526.66	ND	ND
95-50-1	1,2-Dichlorobenzene	64.00	160.00	ND	384.59	961.48	ND	ND
120-82-1	1,2,4-Trichlorobenzene	65.92	164.80	98.20	488.83	1,222.08	728.23	J
91-20-3	Naphthalene	14.08	35.20	14.68	73.79	184.47	76.92	J
87-68-3	Hexachlorobutadiene	65.92	164.80	ND	702.80	1,756.99	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	8.86	89	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 08**

Description: SVE-SP15-01 **Date Sampled:** 05/12/12 **Time:** 12:42
Can/Tube#: 316 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 052112-MC1 **Date Analyzed:** 05/21/12 **Time:** 18:15
Air Volume: 2 ml **Can Dilution Factor:** 1.38

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	72.45	181.13	ND	358.07	895.18	ND	ND
74-87-3	Chloromethane	70.38	175.95	ND	145.29	363.23	ND	ND
76-14-2	Freon 114	71.76	179.40	ND	501.34	1,253.34	ND	ND
75-01-4	Vinyl chloride	71.76	179.40	ND	183.34	458.36	ND	ND
106-99-0	1,3-Butadiene	73.83	184.58	74.90	163.28	408.20	165.64	J
74-83-9	Bromomethane	71.76	179.40	ND	278.39	695.97	ND	ND
75-00-3	Chloroethane	71.76	179.40	ND	189.21	473.03	ND	ND
75-69-4	Trichlorofluoromethane	71.76	179.40	ND	403.06	1,007.66	ND	ND
67-64-1	Acetone	78.11	195.27	ND	185.51	463.78	ND	ND
75-35-4	1,1-Dichloroethene	69.69	174.23	35,389.59	276.06	690.14	140,185.73	E
76-13-1	Freon 113	70.38	175.95	ND	539.17	1,347.92	ND	ND
75-09-2	Dichloromethane	71.76	179.40	ND	249.05	622.64	ND	ND
75-15-0	Carbon disulfide	59.00	147.49	ND	183.53	458.82	ND	ND
156-60-5	trans-1,2-Dichloroethene	45.82	114.54	ND	181.49	453.72	ND	ND
1634-04-4	Methyl tert butyl ether	46.85	117.13	ND	168.73	421.83	ND	ND
75-34-3	1,1-Dichloroethane	69.69	174.23	1,289.40	282.04	705.10	5,218.29	E
108-05-4	Vinyl acetate	55.82	139.55	124.98	196.47	491.19	439.91	J
78-93-3	2-Butanone	64.65	161.63	ND	190.56	476.40	ND	ND
110-54-3	Hexane	46.92	117.30	87.14	165.34	413.34	307.05	J
126-98-7	Methacrylonitrile	65.55	163.88	ND	179.80	449.51	ND	ND
141-78-6	Ethyl acetate	55.61	139.04	162.46	200.29	500.73	585.11	
74-97-5	Bromochloromethane	33.81	84.53	ND	178.85	447.12	ND	ND
78-83-1	Isobutyl alcohol	52.44	131.10	ND	158.85	397.12	ND	ND
156-59-2	cis-1,2-Dichloroethene	71.07	177.68	ND	281.52	703.81	ND	ND
594-20-7	2,2-Dichloropropane	56.51	141.28	ND	261.05	652.61	ND	ND
67-66-3	Chloroform	70.38	175.95	358.82	343.52	858.81	1,751.38	E
71-55-6	1,1,1-Trichloroethane	70.38	175.95	65,107.27	383.80	959.51	355,050.29	E
107-06-2	1,2-Dichloroethane	71.07	177.68	ND	287.62	719.06	ND	ND
563-58-6	1,1-Dichloropropene	41.81	104.54	ND	189.74	474.34	ND	ND
110-82-7	Cyclohexane	48.65	121.61	ND	167.44	418.60	ND	ND
71-43-2	Benzene	71.07	177.68	ND	226.90	567.26	ND	ND
56-23-5	Carbon tetrachloride	70.38	175.95	449.63	442.50	1,106.24	2,826.95	E
142-82-5	n-Heptane	38.50	96.26	ND	157.71	394.27	ND	ND
78-87-5	1,2-Dichloropropane	71.07	177.68	ND	328.30	820.75	ND	ND
123-91-1	1,4 Dioxane	129.72	324.30	ND	467.18	1,167.96	ND	ND
74-95-3	Dibromomethane	23.87	59.69	ND	169.62	424.05	ND	ND
79-01-6	Trichloroethene	71.07	177.68	1,400.07	381.76	954.39	7,520.52	E

75-27-4	Bromodichloromethane	25.53	63.83	ND	170.95	427.38	ND	ND
80-62-6	Methyl methacrylate	42.92	107.30	ND	175.62	439.05	ND	ND
108-10-1	4-Methyl-2-pentanone	48.02	120.06	ND	196.71	491.78	ND	ND
10061-01-5	cis-1,3-Dichloropropene	73.14	182.85	ND	331.88	829.70	ND	ND
108-88-3	Toluene	71.07	177.68	97.78	267.58	668.95	368.14	J
10061-02-6	trans-1,3-Dichloropropene	71.76	179.40	ND	325.62	814.05	ND	ND
79-00-5	1,1,2-Trichloroethane	70.38	175.95	1,120.16	383.80	959.51	6,108.59	E
591-78-6	2-Hexanone	45.06	112.64	ND	184.56	461.40	ND	ND
142-28-9	1,3-Dichloropropane	41.75	104.36	ND	192.84	482.09	ND	ND
111-65-9	Octane	34.64	86.60	ND	161.70	404.26	ND	ND
124-48-1	Dibromochloromethane	25.32	63.31	ND	215.63	539.07	ND	ND
106-93-4	1,2-Dibromoethane	71.76	179.40	ND	551.21	1,378.01	ND	ND
127-18-4	Tetrachloroethene	70.38	175.95	ND	477.02	1,192.55	ND	ND
108-90-7	Chlorobenzene	70.38	175.95	ND	323.96	809.90	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	26.29	65.72	ND	180.33	450.83	ND	ND
100-41-4	Ethylbenzene	71.76	179.40	ND	311.54	778.85	ND	ND
1330-20-7	m,p-Xylenes	142.14	355.35	ND	617.09	1,542.71	ND	ND
111-84-2	Nonane	30.22	75.56	ND	158.51	396.27	ND	ND
100-42-5	Styrene	71.07	177.68	ND	302.73	756.83	ND	ND
75-25-2	Bromoform	17.04	42.61	ND	176.06	440.15	ND	ND
95-47-6	o-Xylene	70.38	175.95	ND	305.55	763.87	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	70.38	175.95	ND	482.78	1,206.94	ND	ND
96-18-4	1,2,3-Trichloropropane	31.26	78.14	ND	188.34	470.86	ND	ND
103-65-1	n-Propylbenzene	47.61	119.03	ND	233.94	584.85	ND	ND
98-82-8	Isopropylbenzene	48.30	120.75	ND	237.33	593.33	ND	ND
622-96-8	4-Ethyltoluene	39.19	97.98	ND	192.58	481.44	ND	ND
108-67-8	1,3,5-Trimethylbenzene	73.14	182.85	ND	359.39	898.47	ND	ND
124-18-5	Decane	32.15	80.39	ND	187.04	467.61	ND	ND
98-06-6	tert-butyl benzene	42.09	105.23	ND	230.91	577.27	ND	ND
95-63-6	1,2,4-Trimethylbenzene	70.38	175.95	ND	345.83	864.57	ND	ND
538-93-2	i-Butylbenzene	42.09	105.23	ND	230.91	577.27	ND	ND
135-98-8	sec-butylbenzene	44.85	112.13	ND	246.05	615.12	ND	ND
541-73-1	1,3-Dichlorobenzene	70.38	175.95	ND	422.93	1,057.33	ND	ND
99-87-6	Isopropyltoluene	44.16	110.40	ND	242.26	605.66	ND	ND
100-44-7	Benzyl chloride	40.57	101.43	ND	209.97	524.93	ND	ND
106-46-7	1,4-Dichlorobenzene	70.38	175.95	ND	422.93	1,057.33	ND	ND
104-51-8	n-Butylbenzene	41.40	103.50	ND	227.12	567.80	ND	ND
95-50-1	1,2-Dichlorobenzene	69.00	172.50	ND	414.64	1,036.60	ND	ND
120-82-1	1,2,4-Trichlorobenzene	71.07	177.68	232.35	527.02	1,317.55	1,723.03	E
91-20-3	Naphthalene	15.18	37.95	ND	79.55	198.89	ND	ND
87-68-3	Hexachlorobutadiene	71.07	177.68	ND	757.70	1,894.25	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	8.98	90	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 09**

Description: SVE-OBS-SHAL-40'-PRE **Date Sampled:** 05/12/12 **Time:** 09:37
Can/Tube#: 317 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 052112-MC1 **Date Analyzed:** 05/21/12 **Time:** 18:55
Air Volume: 20 ml **Can Dilution Factor:** 1.23

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	6.46	16.14	ND	31.92	79.79	ND	ND
74-87-3	Chloromethane	6.27	15.68	ND	12.95	32.38	ND	ND
76-14-2	Freon 114	6.40	15.99	ND	44.68	111.71	ND	ND
75-01-4	Vinyl chloride	6.40	15.99	ND	16.34	40.85	ND	ND
106-99-0	1,3-Butadiene	6.58	16.45	ND	14.55	36.38	ND	ND
74-83-9	Bromomethane	6.40	15.99	ND	24.81	62.03	ND	ND
75-00-3	Chloroethane	6.40	15.99	ND	16.86	42.16	ND	ND
75-69-4	Trichlorofluoromethane	6.40	15.99	ND	35.93	89.81	ND	ND
67-64-1	Acetone	6.96	17.40	ND	16.53	41.34	ND	ND
75-35-4	1,1-Dichloroethene	6.21	15.53	1,819.03	24.61	61.51	7,205.57	E
76-13-1	Freon 113	6.27	15.68	45.75	48.06	120.14	350.47	
75-09-2	Dichloromethane	6.40	15.99	15.18	22.20	55.50	52.67	J
75-15-0	Carbon disulfide	5.26	13.15	ND	16.36	40.90	ND	ND
156-60-5	trans-1,2-Dichloroethene	4.08	10.21	ND	16.18	40.44	ND	ND
1634-04-4	Methyl tert butyl ether	4.18	10.44	ND	15.04	37.60	ND	ND
75-34-3	1,1-Dichloroethane	6.21	15.53	138.19	25.14	62.85	559.27	
108-05-4	Vinyl acetate	4.98	12.44	ND	17.51	43.78	ND	ND
78-93-3	2-Butanone	5.76	14.41	ND	16.98	42.46	ND	ND
110-54-3	Hexane	4.18	10.46	ND	14.74	36.84	ND	ND
126-98-7	Methacrylonitrile	5.84	14.61	ND	16.03	40.07	ND	ND
141-78-6	Ethyl acetate	4.96	12.39	ND	17.85	44.63	ND	ND
74-97-5	Bromochloromethane	3.01	7.53	ND	15.94	39.85	ND	ND
78-83-1	Isobutyl alcohol	4.67	11.69	ND	14.16	35.40	ND	ND
156-59-2	cis-1,2-Dichloroethene	6.33	15.84	11.65	25.09	62.73	46.13	J
594-20-7	2,2-Dichloropropane	5.04	12.59	ND	23.27	58.17	ND	ND
67-66-3	Chloroform	6.27	15.68	19.63	30.62	76.55	95.80	
71-55-6	1,1,1-Trichloroethane	6.27	15.68	1,616.43	34.21	85.52	8,814.91	E
107-06-2	1,2-Dichloroethane	6.33	15.84	125.22	25.64	64.09	506.76	
563-58-6	1,1-Dichloropropene	3.73	9.32	ND	16.91	42.28	ND	ND
110-82-7	Cyclohexane	4.34	10.84	ND	14.92	37.31	ND	ND
71-43-2	Benzene	6.33	15.84	24.24	20.22	50.56	77.39	
56-23-5	Carbon tetrachloride	6.27	15.68	ND	39.44	98.60	ND	ND
142-82-5	n-Heptane	3.43	8.58	ND	14.06	35.14	ND	ND
78-87-5	1,2-Dichloropropane	6.33	15.84	ND	29.26	73.15	ND	ND
123-91-1	1,4 Dioxane	11.56	28.91	ND	41.64	104.10	ND	ND
74-95-3	Dibromomethane	2.13	5.32	ND	15.12	37.80	ND	ND
79-01-6	Trichloroethene	6.33	15.84	21.95	34.03	85.07	117.90	

75-27-4	Bromodichloromethane	2.28	5.69	ND	15.24	38.09	ND	ND
80-62-6	Methyl methacrylate	3.83	9.56	ND	15.65	39.13	ND	ND
108-10-1	4-Methyl-2-pentanone	4.28	10.70	ND	17.53	43.83	ND	ND
10061-01-5	cis-1,3-Dichloropropene	6.52	16.30	ND	29.58	73.95	ND	ND
108-88-3	Toluene	6.33	15.84	11.44	23.85	59.62	43.06	J
10061-02-6	trans-1,3-Dichloropropene	6.40	15.99	ND	29.02	72.56	ND	ND
79-00-5	1,1,2-Trichloroethane	6.27	15.68	11.55	34.21	85.52	62.99	J
591-78-6	2-Hexanone	4.02	10.04	ND	16.45	41.12	ND	ND
142-28-9	1,3-Dichloropropane	3.72	9.30	ND	17.19	42.97	ND	ND
111-65-9	Octane	3.09	7.72	ND	14.41	36.03	ND	ND
124-48-1	Dibromochloromethane	2.26	5.64	ND	19.22	48.05	ND	ND
106-93-4	1,2-Dibromoethane	6.40	15.99	ND	49.13	122.82	ND	ND
127-18-4	Tetrachloroethene	6.27	15.68	ND	42.52	106.29	ND	ND
108-90-7	Chlorobenzene	6.27	15.68	95.36	28.87	72.19	438.92	
630-20-6	1,1,1,2-Tetrachloroethane	2.34	5.86	ND	16.07	40.18	ND	ND
100-41-4	Ethylbenzene	6.40	15.99	ND	27.77	69.42	ND	ND
1330-20-7	m,p-Xylenes	12.67	31.67	14.54	55.00	137.50	63.13	J
111-84-2	Nonane	2.69	6.73	ND	14.13	35.32	ND	ND
100-42-5	Styrene	6.33	15.84	ND	26.98	67.46	ND	ND
75-25-2	Bromoform	1.52	3.80	ND	15.69	39.23	ND	ND
95-47-6	o-Xylene	6.27	15.68	ND	27.23	68.08	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	6.27	15.68	ND	43.03	107.58	ND	ND
96-18-4	1,2,3-Trichloropropane	2.79	6.96	ND	16.79	41.97	ND	ND
103-65-1	n-Propylbenzene	4.24	10.61	ND	20.85	52.13	ND	ND
98-82-8	Isopropylbenzene	4.31	10.76	ND	21.15	52.88	ND	ND
622-96-8	4-Ethyltoluene	3.49	8.73	ND	17.16	42.91	ND	ND
108-67-8	1,3,5-Trimethylbenzene	6.52	16.30	ND	32.03	80.08	ND	ND
124-18-5	Decane	2.87	7.16	ND	16.67	41.68	ND	ND
98-06-6	tert-butyl benzene	3.75	9.38	ND	20.58	51.45	ND	ND
95-63-6	1,2,4-Trimethylbenzene	6.27	15.68	ND	30.82	77.06	ND	ND
538-93-2	i-Butylbenzene	3.75	9.38	ND	20.58	51.45	ND	ND
135-98-8	sec-butylbenzene	4.00	9.99	ND	21.93	54.83	ND	ND
541-73-1	1,3-Dichlorobenzene	6.27	15.68	ND	37.70	94.24	ND	ND
99-87-6	Isopropyltoluene	3.94	9.84	ND	21.59	53.98	ND	ND
100-44-7	Benzyl chloride	3.62	9.04	ND	18.72	46.79	ND	ND
106-46-7	1,4-Dichlorobenzene	6.27	15.68	ND	37.70	94.24	ND	ND
104-51-8	n-Butylbenzene	3.69	9.23	ND	20.24	50.61	ND	ND
95-50-1	1,2-Dichlorobenzene	6.15	15.38	ND	36.96	92.39	ND	ND
120-82-1	1,2,4-Trichlorobenzene	6.33	15.84	ND	46.97	117.43	ND	ND
91-20-3	Naphthalene	1.35	3.38	ND	7.09	17.73	ND	ND
87-68-3	Hexachlorobutadiene	6.33	15.84	ND	67.53	168.84	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	8.77	88	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 10**

Description: SVE-AREA 1-051212 **Date Sampled:** 05/12/12 **Time:** 09:55
Can/Tube#: 352 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 052112-MC1 **Date Analyzed:** 05/21/12 **Time:** 19:36
Air Volume: 500 ml **Can Dilution Factor:** 2.06

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	0.43	1.08	0.49	2.14	5.35	2.44	J
74-87-3	Chloromethane	0.42	1.05	0.76	0.87	2.17	1.56	J
76-14-2	Freon 114	0.43	1.07	ND	2.99	7.48	ND	ND
75-01-4	Vinyl chloride	0.43	1.07	ND	1.09	2.74	ND	ND
106-99-0	1,3-Butadiene	0.44	1.10	1.26	0.97	2.44	2.78	
74-83-9	Bromomethane	0.43	1.07	ND	1.66	4.16	ND	ND
75-00-3	Chloroethane	0.43	1.07	ND	1.13	2.82	ND	ND
75-69-4	Trichlorofluoromethane	0.43	1.07	ND	2.41	6.02	ND	ND
67-64-1	Acetone	0.47	1.17	24.39	1.11	2.77	57.92	
75-35-4	1,1-Dichloroethene	0.42	1.04	3.33	1.65	4.12	13.20	
76-13-1	Freon 113	0.42	1.05	ND	3.22	8.05	ND	ND
75-09-2	Dichloromethane	0.43	1.07	0.49	1.49	3.72	1.68	J
75-15-0	Carbon disulfide	0.35	0.88	ND	1.10	2.74	ND	ND
156-60-5	trans-1,2-Dichloroethene	0.27	0.68	ND	1.08	2.71	ND	ND
1634-04-4	Methyl tert butyl ether	0.28	0.70	ND	1.01	2.52	ND	ND
75-34-3	1,1-Dichloroethane	0.42	1.04	ND	1.68	4.21	ND	ND
108-05-4	Vinyl acetate	0.33	0.83	5.63	1.17	2.93	19.81	
78-93-3	2-Butanone	0.39	0.97	0.80	1.14	2.84	2.34	J
110-54-3	Hexane	0.28	0.70	3.98	0.99	2.47	14.04	
126-98-7	Methacrylonitrile	0.39	0.98	ND	1.07	2.68	ND	ND
141-78-6	Ethyl acetate	0.33	0.83	15.68	1.20	2.99	56.47	
74-97-5	Bromochloromethane	0.20	0.50	ND	1.07	2.67	ND	ND
78-83-1	Isobutyl alcohol	0.31	0.78	ND	0.95	2.37	ND	ND
156-59-2	cis-1,2-Dichloroethene	0.42	1.06	ND	1.68	4.20	ND	ND
594-20-7	2,2-Dichloropropane	0.34	0.84	ND	1.56	3.90	ND	ND
67-66-3	Chloroform	0.42	1.05	ND	2.05	5.13	ND	ND
71-55-6	1,1,1-Trichloroethane	0.42	1.05	5.13	2.29	5.73	27.99	
107-06-2	1,2-Dichloroethane	0.42	1.06	ND	1.72	4.29	ND	ND
563-58-6	1,1-Dichloropropene	0.25	0.62	ND	1.13	2.83	ND	ND
110-82-7	Cyclohexane	0.29	0.73	2.01	1.00	2.50	6.92	
71-43-2	Benzene	0.42	1.06	1.69	1.35	3.39	5.38	
56-23-5	Carbon tetrachloride	0.42	1.05	ND	2.64	6.61	ND	ND
142-82-5	n-Heptane	0.23	0.57	0.98	0.94	2.35	4.01	
78-87-5	1,2-Dichloropropane	0.42	1.06	ND	1.96	4.90	ND	ND
123-91-1	1,4 Dioxane	0.77	1.94	ND	2.79	6.97	ND	ND
74-95-3	Dibromomethane	0.14	0.36	ND	1.01	2.53	ND	ND
79-01-6	Trichloroethene	0.42	1.06	ND	2.28	5.70	ND	ND

75-27-4	Bromodichloromethane	0.15	0.38	ND	1.02	2.55	ND	ND
80-62-6	Methyl methacrylate	0.26	0.64	0.30	1.05	2.62	1.23	J
108-10-1	4-Methyl-2-pentanone	0.29	0.72	0.90	1.17	2.94	3.67	
10061-01-5	cis-1,3-Dichloropropene	0.44	1.09	ND	1.98	4.95	ND	ND
108-88-3	Toluene	0.42	1.06	34.17	1.60	3.99	128.66	
10061-02-6	trans-1,3-Dichloropropene	0.43	1.07	ND	1.94	4.86	ND	ND
79-00-5	1,1,2-Trichloroethane	0.42	1.05	0.90	2.29	5.73	4.92	J
591-78-6	2-Hexanone	0.27	0.67	ND	1.10	2.76	ND	ND
142-28-9	1,3-Dichloropropane	0.25	0.62	ND	1.15	2.88	ND	ND
111-65-9	Octane	0.21	0.52	1.64	0.97	2.41	7.64	
124-48-1	Dibromochloromethane	0.15	0.38	ND	1.29	3.22	ND	ND
106-93-4	1,2-Dibromoethane	0.43	1.07	ND	3.29	8.23	ND	ND
127-18-4	Tetrachloroethene	0.42	1.05	0.56	2.85	7.12	3.80	J
108-90-7	Chlorobenzene	0.42	1.05	ND	1.93	4.84	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	0.16	0.39	ND	1.08	2.69	ND	ND
100-41-4	Ethylbenzene	0.43	1.07	7.63	1.86	4.65	33.12	
1330-20-7	m,p-Xylenes	0.85	2.12	28.96	3.68	9.21	125.74	
111-84-2	Nonane	0.18	0.45	0.46	0.95	2.37	2.43	
100-42-5	Styrene	0.42	1.06	ND	1.81	4.52	ND	ND
75-25-2	Bromoform	0.10	0.25	ND	1.05	2.63	ND	ND
95-47-6	o-Xylene	0.42	1.05	10.74	1.82	4.56	46.63	
79-34-5	1,1,2,2-Tetrachloroethane	0.42	1.05	ND	2.88	7.21	ND	ND
96-18-4	1,2,3-Trichloropropane	0.19	0.47	ND	1.12	2.81	ND	ND
103-65-1	n-Propylbenzene	0.28	0.71	1.37	1.40	3.49	6.72	
98-82-8	Isopropylbenzene	0.29	0.72	5.60	1.42	3.54	27.51	
622-96-8	4-Ethyltoluene	0.23	0.59	4.54	1.15	2.87	22.32	
108-67-8	1,3,5-Trimethylbenzene	0.44	1.09	1.24	2.15	5.36	6.11	
124-18-5	Decane	0.19	0.48	0.27	1.12	2.79	1.55	J
98-06-6	tert-butyl benzene	0.25	0.63	0.64	1.38	3.45	3.50	
95-63-6	1,2,4-Trimethylbenzene	0.42	1.05	3.71	2.06	5.16	18.23	
538-93-2	i-Butylbenzene	0.25	0.63	ND	1.38	3.45	ND	ND
135-98-8	sec-butylbenzene	0.27	0.67	ND	1.47	3.67	ND	ND
541-73-1	1,3-Dichlorobenzene	0.42	1.05	ND	2.53	6.31	ND	ND
99-87-6	Isopropyltoluene	0.26	0.66	ND	1.45	3.62	ND	ND
100-44-7	Benzyl chloride	0.24	0.61	ND	1.25	3.13	ND	ND
106-46-7	1,4-Dichlorobenzene	0.42	1.05	1.45	2.53	6.31	8.71	
104-51-8	n-Butylbenzene	0.25	0.62	ND	1.36	3.39	ND	ND
95-50-1	1,2-Dichlorobenzene	0.41	1.03	ND	2.48	6.19	ND	ND
120-82-1	1,2,4-Trichlorobenzene	0.42	1.06	ND	3.15	7.87	ND	ND
91-20-3	Naphthalene	0.09	0.23	0.19	0.48	1.19	1.02	J
87-68-3	Hexachlorobutadiene	0.42	1.06	ND	4.52	11.31	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	8.39	84	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified SIM GC/MS **SDG: 212213**
Analytical Method: TO15 SIM **Laboratory ID: 10**

Description: SVE-AREA 1-051212 **Date Sampled:** 05/12/12 **Time:** 09:55
Can/Tube#: 352 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 052412-MB1 **Date Analyzed:** 05/24/12 **Time:** 16:00
Air Volume: 500 ml **Can Dilution Factor:** 2.06

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	0.021	0.107	0.363	0.102	0.529	1.794	
74-87-3	Chloromethane	0.021	0.107	0.492	0.043	0.221	1.017	
76-14-2	Freon 114	0.021	0.107	0.022	0.144	0.748	0.150	J
75-01-4	Vinyl chloride	0.021	0.107	ND	0.053	0.274	ND	ND
74-83-9	Bromomethane	0.021	0.107	0.026	0.080	0.416	0.103	J
75-00-3	Chloroethane	0.021	0.107	0.060	0.054	0.282	0.159	J
75-69-4	Trichlorofluoromethane	0.021	0.107	0.164	0.116	0.602	0.924	
75-35-4	1,1-Dichloroethene	0.021	0.107	0.105	0.082	0.424	0.418	J
76-13-1	Freon 113	0.021	0.107	0.091	0.158	0.821	0.700	J
75-09-2	Dichloromethane	0.021	0.107	0.386	0.071	0.372	1.339	
156-60-5	trans-1,2-Dichloroethene	0.021	0.107	0.041	0.082	0.424	0.161	J
1634-04-4	Methyl tert butyl ether	0.021	0.107	0.063	0.074	0.386	0.227	J
75-34-3	1,1-Dichloroethane	0.021	0.107	ND	0.083	0.434	ND	ND
156-59-2	cis-1,2-Dichloroethene	0.021	0.107	ND	0.082	0.424	ND	ND
67-66-3	Chloroform	0.021	0.107	0.027	0.101	0.523	0.130	J
71-55-6	1,1,1-Trichloroethane	0.021	0.107	0.417	0.112	0.584	2.272	
107-06-2	1,2-Dichloroethane	0.021	0.107	0.034	0.083	0.434	0.138	J
71-43-2	Benzene	0.021	0.107	0.933	0.066	0.342	2.979	
56-23-5	Carbon tetrachloride	0.021	0.107	0.091	0.130	0.673	0.572	J
78-87-5	1,2-Dichloropropane	0.021	0.107	ND	0.095	0.495	ND	ND
79-01-6	Trichloroethene	0.021	0.107	0.041	0.111	0.575	0.220	J
75-27-4	Bromodichloromethane	0.021	0.107	ND	0.138	0.717	ND	ND
10061-01-5	cis-1,3-Dichloropropene	0.021	0.107	0.509	0.093	0.486	2.311	
108-88-3	Toluene	0.021	0.107	21.421	0.078	0.403	80.652	
10061-02-6	trans-1,3-Dichloropropene	0.021	0.107	0.407	0.093	0.486	1.846	
79-00-5	1,1,2-Trichloroethane	0.021	0.107	3.145	0.112	0.584	17.150	
106-93-4	1,2-Dibromoethane	0.021	0.107	ND	0.158	0.823	ND	ND
127-18-4	Tetrachloroethene	0.021	0.107	0.449	0.140	0.726	3.045	
108-90-7	Chlorobenzene	0.021	0.107	ND	0.095	0.493	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	0.021	0.107	ND	0.141	0.735	ND	ND
100-41-4	Ethylbenzene	0.021	0.107	6.250	0.089	0.465	27.135	
1330-20-7	m,p-Xylenes	0.021	0.107	21.134	0.089	0.465	91.750	
100-42-5	Styrene	0.021	0.107	0.925	0.088	0.456	3.942	
95-47-6	o-Xylene	0.021	0.107	8.033	0.089	0.465	34.873	
79-34-5	1,1,2,2-Tetrachloroethane	0.021	0.107	0.052	0.141	0.735	0.360	J
622-96-8	4-Ethyltoluene	0.021	0.107	5.145	0.101	0.526	25.283	
108-67-8	1,3,5-Trimethylbenzene	0.021	0.107	1.683	0.101	0.526	8.270	

95-63-6	1,2,4-Trimethylbenzene	0.021	0.107	5.952	0.101	0.526	29.248	
541-73-1	1,3-Dichlorobenzene	0.021	0.107	2.119	0.124	0.644	12.735	
100-44-7	Benzyl chloride	0.021	0.107	0.048	0.107	0.554	0.250	J
106-46-7	1,4-Dichlorobenzene	0.021	0.107	2.067	0.124	0.644	12.422	
95-50-1	1,2-Dichlorobenzene	0.021	0.107	0.030	0.124	0.644	0.178	J
91-20-3	Naphthalene	0.021	0.107	0.069	0.108	0.561	0.359	J

	Surrogate Recovery	Spike ppbV	Measured ppbV	% Rec.	QC LCL	Limits UCL	Flag * = Out
2037-26-5	Toluene-d8	0.20	0.16	79	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 11**

Description: SVE-AREA 2-051212 **Date Sampled:** 05/12/12 **Time:** 09:52
Can/Tube#: 351 **Date Received:** 05/15/17 **Time:** 09:30
QC_Batch: 051712-MC1 **Date Analyzed:** 05/17/12 **Time:** 15:29
Air Volume: 500 ml **Can Dilution Factor:** 1.98

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	0.42	1.04	0.77	2.06	5.14	3.83	J
74-87-3	Chloromethane	0.40	1.01	0.94	0.83	2.08	1.94	J
76-14-2	Freon 114	0.41	1.03	ND	2.88	7.19	ND	ND
75-01-4	Vinyl chloride	0.41	1.03	ND	1.05	2.63	ND	ND
106-99-0	1,3-Butadiene	0.42	1.06	1.05	0.94	2.34	2.33	J
74-83-9	Bromomethane	0.41	1.03	ND	1.60	3.99	ND	ND
75-00-3	Chloroethane	0.41	1.03	ND	1.09	2.71	ND	ND
75-69-4	Trichlorofluoromethane	0.41	1.03	ND	2.31	5.78	ND	ND
67-64-1	Acetone	0.45	1.12	16.48	1.06	2.66	39.14	
75-35-4	1,1-Dichloroethene	0.40	1.00	ND	1.58	3.96	ND	ND
76-13-1	Freon 113	0.40	1.01	ND	3.09	7.74	ND	ND
75-09-2	Dichloromethane	0.41	1.03	ND	1.43	3.57	ND	ND
75-15-0	Carbon disulfide	0.34	0.85	ND	1.05	2.63	ND	ND
156-60-5	trans-1,2-Dichloroethene	0.26	0.66	ND	1.04	2.60	ND	ND
1634-04-4	Methyl tert butyl ether	0.27	0.67	ND	0.97	2.42	ND	ND
75-34-3	1,1-Dichloroethane	0.40	1.00	ND	1.62	4.05	ND	ND
108-05-4	Vinyl acetate	0.32	0.80	3.18	1.13	2.82	11.18	
78-93-3	2-Butanone	0.37	0.93	0.93	1.09	2.73	2.74	
110-54-3	Hexane	0.27	0.67	2.36	0.95	2.37	8.31	
126-98-7	Methacrylonitrile	0.38	0.94	ND	1.03	2.58	ND	ND
141-78-6	Ethyl acetate	0.32	0.80	27.17	1.15	2.87	97.85	
74-97-5	Bromochloromethane	0.19	0.49	ND	1.03	2.57	ND	ND
78-83-1	Isobutyl alcohol	0.30	0.75	0.39	0.91	2.28	1.19	J
156-59-2	cis-1,2-Dichloroethene	0.41	1.02	ND	1.62	4.04	ND	ND
594-20-7	2,2-Dichloropropane	0.32	0.81	ND	1.50	3.75	ND	ND
67-66-3	Chloroform	0.40	1.01	ND	1.97	4.93	ND	ND
71-55-6	1,1,1-Trichloroethane	0.40	1.01	0.47	2.20	5.51	2.56	J
107-06-2	1,2-Dichloroethane	0.41	1.02	ND	1.65	4.13	ND	ND
563-58-6	1,1-Dichloropropene	0.24	0.60	ND	1.09	2.72	ND	ND
110-82-7	Cyclohexane	0.28	0.70	0.87	0.96	2.40	2.99	
71-43-2	Benzene	0.41	1.02	1.33	1.30	3.26	4.26	
56-23-5	Carbon tetrachloride	0.40	1.01	ND	2.54	6.35	ND	ND
142-82-5	n-Heptane	0.22	0.55	0.53	0.91	2.26	2.19	J
78-87-5	1,2-Dichloropropane	0.41	1.02	ND	1.88	4.71	ND	ND
123-91-1	1,4 Dioxane	0.74	1.86	ND	2.68	6.70	ND	ND
74-95-3	Dibromomethane	0.14	0.34	ND	0.97	2.43	ND	ND
79-01-6	Trichloroethene	0.41	1.02	ND	2.19	5.48	ND	ND

75-27-4	Bromodichloromethane	0.15	0.37	ND	0.98	2.45	ND	ND
80-62-6	Methyl methacrylate	0.25	0.62	0.60	1.01	2.52	2.44	J
108-10-1	4-Methyl-2-pentanone	0.28	0.69	ND	1.13	2.82	ND	ND
10061-01-5	cis-1,3-Dichloropropene	0.42	1.05	ND	1.90	4.76	ND	ND
108-88-3	Toluene	0.41	1.02	15.25	1.54	3.84	57.43	
10061-02-6	trans-1,3-Dichloropropene	0.41	1.03	ND	1.87	4.67	ND	ND
79-00-5	1,1,2-Trichloroethane	0.40	1.01	0.89	2.20	5.51	4.84	J
591-78-6	2-Hexanone	0.26	0.65	ND	1.06	2.65	ND	ND
142-28-9	1,3-Dichloropropane	0.24	0.60	ND	1.11	2.77	ND	ND
111-65-9	Octane	0.20	0.50	1.40	0.93	2.32	6.54	
124-48-1	Dibromochloromethane	0.15	0.36	ND	1.24	3.09	ND	ND
106-93-4	1,2-Dibromoethane	0.41	1.03	ND	3.16	7.91	ND	ND
127-18-4	Tetrachloroethene	0.40	1.01	ND	2.74	6.84	ND	ND
108-90-7	Chlorobenzene	0.40	1.01	ND	1.86	4.65	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	0.15	0.38	ND	1.03	2.59	ND	ND
100-41-4	Ethylbenzene	0.41	1.03	0.62	1.79	4.47	2.71	J
1330-20-7	m,p-Xylenes	0.82	2.04	1.87	3.54	8.85	8.10	J
111-84-2	Nonane	0.17	0.43	ND	0.91	2.27	ND	ND
100-42-5	Styrene	0.41	1.02	ND	1.74	4.34	ND	ND
75-25-2	Bromoform	0.10	0.24	ND	1.01	2.53	ND	ND
95-47-6	o-Xylene	0.40	1.01	0.65	1.75	4.38	2.80	J
79-34-5	1,1,2,2-Tetrachloroethane	0.40	1.01	ND	2.77	6.93	ND	ND
96-18-4	1,2,3-Trichloropropane	0.18	0.45	ND	1.08	2.70	ND	ND
103-65-1	n-Propylbenzene	0.27	0.68	ND	1.34	3.36	ND	ND
98-82-8	Isopropylbenzene	0.28	0.69	0.31	1.36	3.41	1.52	J
622-96-8	4-Ethyltoluene	0.22	0.56	0.23	1.11	2.76	1.12	J
108-67-8	1,3,5-Trimethylbenzene	0.42	1.05	ND	2.06	5.16	ND	ND
124-18-5	Decane	0.18	0.46	ND	1.07	2.68	ND	ND
98-06-6	tert-butyl benzene	0.24	0.60	ND	1.33	3.31	ND	ND
95-63-6	1,2,4-Trimethylbenzene	0.40	1.01	ND	1.98	4.96	ND	ND
538-93-2	i-Butylbenzene	0.24	0.60	ND	1.33	3.31	ND	ND
135-98-8	sec-butylbenzene	0.26	0.64	ND	1.41	3.53	ND	ND
541-73-1	1,3-Dichlorobenzene	0.40	1.01	ND	2.43	6.07	ND	ND
99-87-6	Isopropyltoluene	0.25	0.63	ND	1.39	3.48	ND	ND
100-44-7	Benzyl chloride	0.23	0.58	ND	1.21	3.01	ND	ND
106-46-7	1,4-Dichlorobenzene	0.40	1.01	ND	2.43	6.07	ND	ND
104-51-8	n-Butylbenzene	0.24	0.59	ND	1.30	3.26	ND	ND
95-50-1	1,2-Dichlorobenzene	0.40	0.99	ND	2.38	5.95	ND	ND
120-82-1	1,2,4-Trichlorobenzene	0.41	1.02	ND	3.02	7.56	ND	ND
91-20-3	Naphthalene	0.09	0.22	0.18	0.46	1.14	0.95	J
87-68-3	Hexachlorobutadiene	0.41	1.02	ND	4.35	10.87	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	7.49	75	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified SIM GC/MS **SDG: 212213**
Analytical Method: TO15 SIM **Laboratory ID: 11**

Description: SVE-AREA 2-051212 **Date Sampled:** 05/12/12 **Time:** 09:52
Can/Tube#: 351 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 052412-MB1 **Date Analyzed:** 05/24/12 **Time:** 16:33
Air Volume: 500 ml **Can Dilution Factor:** 1.98

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	0.020	0.103	0.284	0.098	0.509	1.404	
74-87-3	Chloromethane	0.020	0.103	0.350	0.041	0.213	0.723	
76-14-2	Freon 114	0.020	0.103	0.031	0.138	0.719	0.214	J
75-01-4	Vinyl chloride	0.020	0.103	ND	0.051	0.263	ND	ND
74-83-9	Bromomethane	0.020	0.103	ND	0.077	0.399	ND	ND
75-00-3	Chloroethane	0.020	0.103	0.038	0.052	0.271	0.099	J
75-69-4	Trichlorofluoromethane	0.020	0.103	0.140	0.111	0.578	0.786	
75-35-4	1,1-Dichloroethene	0.020	0.103	0.066	0.078	0.408	0.263	J
76-13-1	Freon 113	0.020	0.103	0.085	0.152	0.789	0.653	J
75-09-2	Dichloromethane	0.020	0.103	0.145	0.069	0.357	0.503	
156-60-5	trans-1,2-Dichloroethene	0.020	0.103	0.061	0.078	0.408	0.243	J
1634-04-4	Methyl tert butyl ether	0.020	0.103	0.045	0.071	0.371	0.163	J
75-34-3	1,1-Dichloroethane	0.020	0.103	ND	0.080	0.417	ND	ND
156-59-2	cis-1,2-Dichloroethene	0.020	0.103	ND	0.078	0.408	ND	ND
67-66-3	Chloroform	0.020	0.103	0.038	0.097	0.503	0.187	J
71-55-6	1,1,1-Trichloroethane	0.020	0.103	0.305	0.108	0.561	1.665	
107-06-2	1,2-Dichloroethane	0.020	0.103	0.040	0.080	0.417	0.163	J
71-43-2	Benzene	0.020	0.103	0.696	0.063	0.329	2.221	
56-23-5	Carbon tetrachloride	0.020	0.103	0.090	0.124	0.647	0.565	J
78-87-5	1,2-Dichloropropane	0.020	0.103	0.058	0.091	0.476	0.269	J
79-01-6	Trichloroethene	0.020	0.103	0.076	0.106	0.553	0.407	J
75-27-4	Bromodichloromethane	0.020	0.103	ND	0.133	0.689	ND	ND
10061-01-5	cis-1,3-Dichloropropene	0.020	0.103	ND	0.090	0.467	ND	ND
108-88-3	Toluene	0.020	0.103	11.402	0.075	0.388	42.929	
10061-02-6	trans-1,3-Dichloropropene	0.020	0.103	ND	0.090	0.467	ND	ND
79-00-5	1,1,2-Trichloroethane	0.020	0.103	0.258	0.108	0.561	1.406	
106-93-4	1,2-Dibromoethane	0.020	0.103	ND	0.152	0.791	ND	ND
127-18-4	Tetrachloroethene	0.020	0.103	0.134	0.134	0.698	0.908	
108-90-7	Chlorobenzene	0.020	0.103	0.045	0.091	0.474	0.209	J
630-20-6	1,1,1,2-Tetrachloroethane	0.020	0.103	ND	0.136	0.706	ND	ND
100-41-4	Ethylbenzene	0.020	0.103	0.644	0.086	0.447	2.795	
1330-20-7	m,p-Xylenes	0.020	0.103	2.003	0.086	0.447	8.695	
100-42-5	Styrene	0.020	0.103	0.274	0.084	0.439	1.168	
95-47-6	o-Xylene	0.020	0.103	0.691	0.086	0.447	3.000	
79-34-5	1,1,2,2-Tetrachloroethane	0.020	0.103	0.025	0.136	0.706	0.171	J
622-96-8	4-Ethyltoluene	0.020	0.103	0.372	0.097	0.506	1.828	
108-67-8	1,3,5-Trimethylbenzene	0.020	0.103	0.184	0.097	0.506	0.904	

95-63-6	1,2,4-Trimethylbenzene	0.020	0.103	0.583	0.097	0.506	2.867	
541-73-1	1,3-Dichlorobenzene	0.020	0.103	0.043	0.119	0.619	0.256	
100-44-7	Benzyl chloride	0.020	0.103	0.030	0.102	0.533	0.155	J
106-46-7	1,4-Dichlorobenzene	0.020	0.103	0.336	0.119	0.619	2.020	
95-50-1	1,2-Dichlorobenzene	0.020	0.103	0.063	0.119	0.619	0.379	J
91-20-3	Naphthalene	0.020	0.103	0.229	0.104	0.540	1.200	

	Surrogate Recovery	Spike ppbV	Measured ppbV	% Rec.	QC LCL	Limits UCL	Flag * = Out
2037-26-5	Toluene-d8	0.20	0.14	71	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 12**

Description: SVE-OBS-SHAL-40'-POST **Date Sampled:** 05/12/12 **Time:** 19:45
Can/Tube#: 343 **Date Received:** 05/15/17 **Time:** 09:30
QC_Batch: 051712-MC1 **Date Analyzed:** 05/17/12 **Time:** 16:06
Air Volume: 500 ml **Can Dilution Factor:** 1.00

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	0.21	0.53	ND	1.04	2.59	ND	ND
74-87-3	Chloromethane	0.20	0.51	ND	0.42	1.05	ND	ND
76-14-2	Freon 114	0.21	0.52	ND	1.45	3.63	ND	ND
75-01-4	Vinyl chloride	0.21	0.52	ND	0.53	1.33	ND	ND
106-99-0	1,3-Butadiene	0.21	0.54	ND	0.47	1.18	ND	ND
74-83-9	Bromomethane	0.21	0.52	ND	0.81	2.02	ND	ND
75-00-3	Chloroethane	0.21	0.52	ND	0.55	1.37	ND	ND
75-69-4	Trichlorofluoromethane	0.21	0.52	ND	1.17	2.92	ND	ND
67-64-1	Acetone	0.23	0.57	0.36	0.54	1.34	0.85	J
75-35-4	1,1-Dichloroethene	0.20	0.51	ND	0.80	2.00	ND	ND
76-13-1	Freon 113	0.20	0.51	ND	1.56	3.91	ND	ND
75-09-2	Dichloromethane	0.21	0.52	ND	0.72	1.80	ND	ND
75-15-0	Carbon disulfide	0.17	0.43	ND	0.53	1.33	ND	ND
156-60-5	trans-1,2-Dichloroethene	0.13	0.33	ND	0.53	1.32	ND	ND
1634-04-4	Methyl tert butyl ether	0.14	0.34	ND	0.49	1.22	ND	ND
75-34-3	1,1-Dichloroethane	0.20	0.51	ND	0.82	2.04	ND	ND
108-05-4	Vinyl acetate	0.16	0.40	0.34	0.57	1.42	1.21	J
78-93-3	2-Butanone	0.19	0.47	ND	0.55	1.38	ND	ND
110-54-3	Hexane	0.14	0.34	0.26	0.48	1.20	0.90	J
126-98-7	Methacrylonitrile	0.19	0.48	ND	0.52	1.30	ND	ND
141-78-6	Ethyl acetate	0.16	0.40	ND	0.58	1.45	ND	ND
74-97-5	Bromochloromethane	0.10	0.25	ND	0.52	1.30	ND	ND
78-83-1	Isobutyl alcohol	0.15	0.38	ND	0.46	1.15	ND	ND
156-59-2	cis-1,2-Dichloroethene	0.21	0.52	ND	0.82	2.04	ND	ND
594-20-7	2,2-Dichloropropane	0.16	0.41	ND	0.76	1.89	ND	ND
67-66-3	Chloroform	0.20	0.51	ND	1.00	2.49	ND	ND
71-55-6	1,1,1-Trichloroethane	0.20	0.51	3.79	1.11	2.78	20.66	
107-06-2	1,2-Dichloroethane	0.21	0.52	0.24	0.83	2.08	0.97	J
563-58-6	1,1-Dichloropropene	0.12	0.30	ND	0.55	1.37	ND	ND
110-82-7	Cyclohexane	0.14	0.35	ND	0.49	1.21	ND	ND
71-43-2	Benzene	0.21	0.52	ND	0.66	1.64	ND	ND
56-23-5	Carbon tetrachloride	0.20	0.51	ND	1.28	3.21	ND	ND
142-82-5	n-Heptane	0.11	0.28	0.11	0.46	1.14	0.46	J
78-87-5	1,2-Dichloropropane	0.21	0.52	ND	0.95	2.38	ND	ND
123-91-1	1,4 Dioxane	0.38	0.94	ND	1.35	3.39	ND	ND
74-95-3	Dibromomethane	0.07	0.17	ND	0.49	1.23	ND	ND
79-01-6	Trichloroethene	0.21	0.52	ND	1.11	2.77	ND	ND

75-27-4	Bromodichloromethane	0.07	0.19	ND	0.50	1.24	ND	ND
80-62-6	Methyl methacrylate	0.12	0.31	ND	0.51	1.27	ND	ND
108-10-1	4-Methyl-2-pentanone	0.14	0.35	ND	0.57	1.43	ND	ND
10061-01-5	cis-1,3-Dichloropropene	0.21	0.53	ND	0.96	2.40	ND	ND
108-88-3	Toluene	0.21	0.52	0.23	0.78	1.94	0.86	J
10061-02-6	trans-1,3-Dichloropropene	0.21	0.52	ND	0.94	2.36	ND	ND
79-00-5	1,1,2-Trichloroethane	0.20	0.51	ND	1.11	2.78	ND	ND
591-78-6	2-Hexanone	0.13	0.33	ND	0.53	1.34	ND	ND
142-28-9	1,3-Dichloropropane	0.12	0.30	ND	0.56	1.40	ND	ND
111-65-9	Octane	0.10	0.25	ND	0.47	1.17	ND	ND
124-48-1	Dibromochloromethane	0.07	0.18	ND	0.63	1.56	ND	ND
106-93-4	1,2-Dibromoethane	0.21	0.52	ND	1.60	3.99	ND	ND
127-18-4	Tetrachloroethene	0.20	0.51	ND	1.38	3.46	ND	ND
108-90-7	Chlorobenzene	0.20	0.51	ND	0.94	2.35	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	0.08	0.19	ND	0.52	1.31	ND	ND
100-41-4	Ethylbenzene	0.21	0.52	ND	0.90	2.26	ND	ND
1330-20-7	m,p-Xylenes	0.41	1.03	ND	1.79	4.47	ND	ND
111-84-2	Nonane	0.09	0.22	ND	0.46	1.15	ND	ND
100-42-5	Styrene	0.21	0.52	ND	0.88	2.19	ND	ND
75-25-2	Bromoform	0.05	0.12	ND	0.51	1.28	ND	ND
95-47-6	o-Xylene	0.20	0.51	ND	0.89	2.21	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	0.20	0.51	ND	1.40	3.50	ND	ND
96-18-4	1,2,3-Trichloropropane	0.09	0.23	ND	0.55	1.36	ND	ND
103-65-1	n-Propylbenzene	0.14	0.35	ND	0.68	1.70	ND	ND
98-82-8	Isopropylbenzene	0.14	0.35	ND	0.69	1.72	ND	ND
622-96-8	4-Ethyltoluene	0.11	0.28	ND	0.56	1.40	ND	ND
108-67-8	1,3,5-Trimethylbenzene	0.21	0.53	ND	1.04	2.60	ND	ND
124-18-5	Decane	0.09	0.23	ND	0.54	1.36	ND	ND
98-06-6	tert-butyl benzene	0.12	0.31	ND	0.67	1.67	ND	ND
95-63-6	1,2,4-Trimethylbenzene	0.20	0.51	ND	1.00	2.51	ND	ND
538-93-2	i-Butylbenzene	0.12	0.31	ND	0.67	1.67	ND	ND
135-98-8	sec-butylbenzene	0.13	0.33	ND	0.71	1.78	ND	ND
541-73-1	1,3-Dichlorobenzene	0.20	0.51	ND	1.23	3.06	ND	ND
99-87-6	Isopropyltoluene	0.13	0.32	ND	0.70	1.76	ND	ND
100-44-7	Benzyl chloride	0.12	0.29	ND	0.61	1.52	ND	ND
106-46-7	1,4-Dichlorobenzene	0.20	0.51	ND	1.23	3.06	ND	ND
104-51-8	n-Butylbenzene	0.12	0.30	ND	0.66	1.65	ND	ND
95-50-1	1,2-Dichlorobenzene	0.20	0.50	ND	1.20	3.00	ND	ND
120-82-1	1,2,4-Trichlorobenzene	0.21	0.52	ND	1.53	3.82	ND	ND
91-20-3	Naphthalene	0.04	0.11	ND	0.23	0.58	ND	ND
87-68-3	Hexachlorobutadiene	0.21	0.52	ND	2.20	5.49	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	7.84	78	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 13**

Description: SVE-EXT-DEEP-PRE **Date Sampled:** 05/12/12 **Time:** 08:47
Can/Tube#: 330 **Date Received:** 05/15/17 **Time:** 09:30
QC_Batch: 051712-MC1 **Date Analyzed:** 05/17/12 **Time:** 17:24
Air Volume: 20 ml **Can Dilution Factor:** 1.29

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	6.77	16.93	18.17	33.47	83.68	89.81	
74-87-3	Chloromethane	6.58	16.45	ND	13.58	33.95	ND	ND
76-14-2	Freon 114	6.71	16.77	13.87	46.86	117.16	96.90	J
75-01-4	Vinyl chloride	6.71	16.77	11.02	17.14	42.85	28.16	J
106-99-0	1,3-Butadiene	6.90	17.25	8.61	15.26	38.16	19.04	J
74-83-9	Bromomethane	6.71	16.77	ND	26.02	65.06	ND	ND
75-00-3	Chloroethane	6.71	16.77	ND	17.69	44.22	ND	ND
75-69-4	Trichlorofluoromethane	6.71	16.77	ND	37.68	94.19	ND	ND
67-64-1	Acetone	7.30	18.25	99.22	17.34	43.35	235.65	
75-35-4	1,1-Dichloroethene	6.51	16.29	ND	25.81	64.51	ND	ND
76-13-1	Freon 113	6.58	16.45	26.03	50.40	126.00	199.44	
75-09-2	Dichloromethane	6.71	16.77	ND	23.28	58.20	ND	ND
75-15-0	Carbon disulfide	5.51	13.79	ND	17.16	42.89	ND	ND
156-60-5	trans-1,2-Dichloroethene	4.28	10.71	ND	16.97	42.41	ND	ND
1634-04-4	Methyl tert butyl ether	4.38	10.95	ND	15.77	39.43	ND	ND
75-34-3	1,1-Dichloroethane	6.51	16.29	376.27	26.36	65.91	1,522.80	E
108-05-4	Vinyl acetate	5.22	13.05	11.19	18.37	45.92	39.39	J
78-93-3	2-Butanone	6.04	15.11	11.12	17.81	44.53	32.78	J
110-54-3	Hexane	4.39	10.97	9.06	15.46	38.64	31.94	J
126-98-7	Methacrylonitrile	6.13	15.32	ND	16.81	42.02	ND	ND
141-78-6	Ethyl acetate	5.20	13.00	54.42	18.72	46.81	196.00	
74-97-5	Bromochloromethane	3.16	7.90	6.85	16.72	41.80	36.21	J
78-83-1	Isobutyl alcohol	4.90	12.26	ND	14.85	37.12	ND	ND
156-59-2	cis-1,2-Dichloroethene	6.64	16.61	21.36	26.32	65.79	84.61	
594-20-7	2,2-Dichloropropane	5.28	13.21	ND	24.40	61.01	ND	ND
67-66-3	Chloroform	6.58	16.45	98.42	32.11	80.28	480.38	
71-55-6	1,1,1-Trichloroethane	6.58	16.45	4,316.09	35.88	89.69	23,537.01	E
107-06-2	1,2-Dichloroethane	6.64	16.61	ND	26.89	67.22	ND	ND
563-58-6	1,1-Dichloropropene	3.91	9.77	ND	17.74	44.34	ND	ND
110-82-7	Cyclohexane	4.55	11.37	ND	15.65	39.13	ND	ND
71-43-2	Benzene	6.64	16.61	15.88	21.21	53.03	50.71	J
56-23-5	Carbon tetrachloride	6.58	16.45	62.16	41.36	103.41	390.82	
142-82-5	n-Heptane	3.60	9.00	ND	14.74	36.86	ND	ND
78-87-5	1,2-Dichloropropane	6.64	16.61	ND	30.69	76.72	ND	ND
123-91-1	1,4 Dioxane	12.13	30.32	ND	43.67	109.18	ND	ND
74-95-3	Dibromomethane	2.23	5.58	ND	15.86	39.64	ND	ND
79-01-6	Trichloroethene	6.64	16.61	196.32	35.69	89.21	1,054.53	E

75-27-4	Bromodichloromethane	2.39	5.97	ND	15.98	39.95	ND	ND
80-62-6	Methyl methacrylate	4.01	10.03	ND	16.42	41.04	ND	ND
108-10-1	4-Methyl-2-pentanone	4.49	11.22	ND	18.39	45.97	ND	ND
10061-01-5	cis-1,3-Dichloropropene	6.84	17.09	ND	31.02	77.56	ND	ND
108-88-3	Toluene	6.64	16.61	11.00	25.01	62.53	41.41	J
10061-02-6	trans-1,3-Dichloropropene	6.71	16.77	ND	30.44	76.10	ND	ND
79-00-5	1,1,2-Trichloroethane	6.58	16.45	177.80	35.88	89.69	969.62	
591-78-6	2-Hexanone	4.21	10.53	ND	17.25	43.13	ND	ND
142-28-9	1,3-Dichloropropane	3.90	9.76	ND	18.03	45.06	ND	ND
111-65-9	Octane	3.24	8.09	ND	15.12	37.79	ND	ND
124-48-1	Dibromochloromethane	2.37	5.92	ND	20.16	50.39	ND	ND
106-93-4	1,2-Dibromoethane	6.71	16.77	ND	51.53	128.81	ND	ND
127-18-4	Tetrachloroethene	6.58	16.45	9.07	44.59	111.48	61.44	J
108-90-7	Chlorobenzene	6.58	16.45	ND	30.28	75.71	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	2.46	6.14	ND	16.86	42.14	ND	ND
100-41-4	Ethylbenzene	6.71	16.77	ND	29.12	72.81	ND	ND
1330-20-7	m,p-Xylenes	13.29	33.22	ND	57.68	144.21	ND	ND
111-84-2	Nonane	2.83	7.06	ND	14.82	37.04	ND	ND
100-42-5	Styrene	6.64	16.61	ND	28.30	70.75	ND	ND
75-25-2	Bromoform	1.59	3.98	ND	16.46	41.14	ND	ND
95-47-6	o-Xylene	6.58	16.45	ND	28.56	71.41	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	6.58	16.45	ND	45.13	112.82	ND	ND
96-18-4	1,2,3-Trichloropropane	2.92	7.30	ND	17.61	44.01	ND	ND
103-65-1	n-Propylbenzene	4.45	11.13	ND	21.87	54.67	ND	ND
98-82-8	Isopropylbenzene	4.52	11.29	ND	22.19	55.46	ND	ND
622-96-8	4-Ethyltoluene	3.66	9.16	ND	18.00	45.00	ND	ND
108-67-8	1,3,5-Trimethylbenzene	6.84	17.09	ND	33.59	83.99	ND	ND
124-18-5	Decane	3.01	7.51	ND	17.48	43.71	ND	ND
98-06-6	tert-butyl benzene	3.93	9.84	ND	21.58	53.96	ND	ND
95-63-6	1,2,4-Trimethylbenzene	6.58	16.45	ND	32.33	80.82	ND	ND
538-93-2	i-Butylbenzene	3.93	9.84	ND	21.58	53.96	ND	ND
135-98-8	sec-butylbenzene	4.19	10.48	ND	23.00	57.50	ND	ND
541-73-1	1,3-Dichlorobenzene	6.58	16.45	ND	39.54	98.84	ND	ND
99-87-6	Isopropyltoluene	4.13	10.32	ND	22.65	56.62	ND	ND
100-44-7	Benzyl chloride	3.79	9.48	ND	19.63	49.07	ND	ND
106-46-7	1,4-Dichlorobenzene	6.58	16.45	ND	39.54	98.84	ND	ND
104-51-8	n-Butylbenzene	3.87	9.68	ND	21.23	53.08	ND	ND
95-50-1	1,2-Dichlorobenzene	6.45	16.13	ND	38.76	96.90	ND	ND
120-82-1	1,2,4-Trichlorobenzene	6.64	16.61	ND	49.27	123.16	ND	ND
91-20-3	Naphthalene	1.42	3.55	2.04	7.44	18.59	10.68	J
87-68-3	Hexachlorobutadiene	6.64	16.61	ND	70.83	177.07	ND	ND

	Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	8.77	88	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 14**

Description: SVE-SP15-PRE **Date Sampled:** 05/12/12 **Time:** 10:16
Can/Tube#: 369 **Date Received:** 05/15/17 **Time:** 09:30
QC_Batch: 051712-MC1 **Date Analyzed:** 05/17/12 **Time:** 18:04
Air Volume: 20 ml **Can Dilution Factor:** 1.33

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	6.98	17.46	ND	34.51	86.27	ND	ND
74-87-3	Chloromethane	6.78	16.96	ND	14.00	35.01	ND	ND
76-14-2	Freon 114	6.92	17.29	ND	48.32	120.79	ND	ND
75-01-4	Vinyl chloride	6.92	17.29	ND	17.67	44.18	ND	ND
106-99-0	1,3-Butadiene	7.12	17.79	ND	15.74	39.34	ND	ND
74-83-9	Bromomethane	6.92	17.29	ND	26.83	67.08	ND	ND
75-00-3	Chloroethane	6.92	17.29	ND	18.24	45.59	ND	ND
75-69-4	Trichlorofluoromethane	6.92	17.29	ND	38.85	97.11	ND	ND
67-64-1	Acetone	7.53	18.82	260.20	17.88	44.70	618.00	
75-35-4	1,1-Dichloroethene	6.72	16.79	558.82	26.61	66.51	2,213.63	E
76-13-1	Freon 113	6.78	16.96	ND	51.96	129.91	ND	ND
75-09-2	Dichloromethane	6.92	17.29	ND	24.00	60.01	ND	ND
75-15-0	Carbon disulfide	5.69	14.21	ND	17.69	44.22	ND	ND
156-60-5	trans-1,2-Dichloroethene	4.42	11.04	ND	17.49	43.73	ND	ND
1634-04-4	Methyl tert butyl ether	4.52	11.29	ND	16.26	40.65	ND	ND
75-34-3	1,1-Dichloroethane	6.72	16.79	ND	27.18	67.96	ND	ND
108-05-4	Vinyl acetate	5.38	13.45	5.90	18.94	47.34	20.78	J
78-93-3	2-Butanone	6.23	15.58	ND	18.37	45.91	ND	ND
110-54-3	Hexane	4.52	11.31	5.10	15.93	39.84	17.96	J
126-98-7	Methacrylonitrile	6.32	15.79	ND	17.33	43.32	ND	ND
141-78-6	Ethyl acetate	5.36	13.40	ND	19.30	48.26	ND	ND
74-97-5	Bromochloromethane	3.26	8.15	ND	17.24	43.09	ND	ND
78-83-1	Isobutyl alcohol	5.05	12.64	ND	15.31	38.27	ND	ND
156-59-2	cis-1,2-Dichloroethene	6.85	17.12	ND	27.13	67.83	ND	ND
594-20-7	2,2-Dichloropropane	5.45	13.62	ND	25.16	62.90	ND	ND
67-66-3	Chloroform	6.78	16.96	ND	33.11	82.77	ND	ND
71-55-6	1,1,1-Trichloroethane	6.78	16.96	324.11	36.99	92.47	1,767.47	E
107-06-2	1,2-Dichloroethane	6.85	17.12	23.46	27.72	69.30	94.95	
563-58-6	1,1-Dichloropropene	4.03	10.07	ND	18.29	45.72	ND	ND
110-82-7	Cyclohexane	4.69	11.72	11.96	16.14	40.34	41.17	
71-43-2	Benzene	6.85	17.12	ND	21.87	54.67	ND	ND
56-23-5	Carbon tetrachloride	6.78	16.96	ND	42.65	106.62	ND	ND
142-82-5	n-Heptane	3.71	9.28	ND	15.20	38.00	ND	ND
78-87-5	1,2-Dichloropropane	6.85	17.12	ND	31.64	79.10	ND	ND
123-91-1	1,4 Dioxane	12.50	31.26	ND	45.03	112.56	ND	ND
74-95-3	Dibromomethane	2.30	5.75	ND	16.35	40.87	ND	ND
79-01-6	Trichloroethene	6.85	17.12	ND	36.79	91.98	ND	ND

75-27-4	Bromodichloromethane	2.46	6.15	ND	16.48	41.19	ND	ND
80-62-6	Methyl methacrylate	4.14	10.34	ND	16.93	42.31	ND	ND
108-10-1	4-Methyl-2-pentanone	4.63	11.57	ND	18.96	47.40	ND	ND
10061-01-5	cis-1,3-Dichloropropene	7.05	17.62	ND	31.99	79.96	ND	ND
108-88-3	Toluene	6.85	17.12	24.13	25.79	64.47	90.85	
10061-02-6	trans-1,3-Dichloropropene	6.92	17.29	ND	31.38	78.46	ND	ND
79-00-5	1,1,2-Trichloroethane	6.78	16.96	8.40	36.99	92.47	45.79	J
591-78-6	2-Hexanone	4.34	10.86	ND	17.79	44.47	ND	ND
142-28-9	1,3-Dichloropropane	4.02	10.06	ND	18.58	46.46	ND	ND
111-65-9	Octane	3.34	8.35	ND	15.58	38.96	ND	ND
124-48-1	Dibromochloromethane	2.44	6.10	ND	20.78	51.95	ND	ND
106-93-4	1,2-Dibromoethane	6.92	17.29	ND	53.12	132.81	ND	ND
127-18-4	Tetrachloroethene	6.78	16.96	82.69	45.97	114.93	560.43	
108-90-7	Chlorobenzene	6.78	16.96	ND	31.22	78.06	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	2.53	6.33	ND	17.38	43.45	ND	ND
100-41-4	Ethylbenzene	6.92	17.29	10.14	30.03	75.06	44.04	J
1330-20-7	m,p-Xylenes	13.70	34.25	43.02	59.47	148.68	186.78	
111-84-2	Nonane	2.91	7.28	ND	15.28	38.19	ND	ND
100-42-5	Styrene	6.85	17.12	ND	29.18	72.94	ND	ND
75-25-2	Bromoform	1.64	4.11	ND	16.97	42.42	ND	ND
95-47-6	o-Xylene	6.78	16.96	14.49	29.45	73.62	62.93	J
79-34-5	1,1,2,2-Tetrachloroethane	6.78	16.96	ND	46.53	116.32	ND	ND
96-18-4	1,2,3-Trichloropropane	3.01	7.53	ND	18.15	45.38	ND	ND
103-65-1	n-Propylbenzene	4.59	11.47	ND	22.55	56.37	ND	ND
98-82-8	Isopropylbenzene	4.66	11.64	ND	22.87	57.18	ND	ND
622-96-8	4-Ethyltoluene	3.78	9.44	ND	18.56	46.40	ND	ND
108-67-8	1,3,5-Trimethylbenzene	7.05	17.62	ND	34.64	86.59	ND	ND
124-18-5	Decane	3.10	7.75	ND	18.03	45.07	ND	ND
98-06-6	tert-butyl benzene	4.06	10.14	ND	22.25	55.64	ND	ND
95-63-6	1,2,4-Trimethylbenzene	6.78	16.96	ND	33.33	83.32	ND	ND
538-93-2	i-Butylbenzene	4.06	10.14	ND	22.25	55.64	ND	ND
135-98-8	sec-butylbenzene	4.32	10.81	ND	23.71	59.28	ND	ND
541-73-1	1,3-Dichlorobenzene	6.78	16.96	ND	40.76	101.90	ND	ND
99-87-6	Isopropyltoluene	4.26	10.64	6.96	23.35	58.37	38.17	J
100-44-7	Benzyl chloride	3.91	9.78	ND	20.24	50.59	ND	ND
106-46-7	1,4-Dichlorobenzene	6.78	16.96	ND	40.76	101.90	ND	ND
104-51-8	n-Butylbenzene	3.99	9.98	ND	21.89	54.72	ND	ND
95-50-1	1,2-Dichlorobenzene	6.65	16.63	ND	39.96	99.90	ND	ND
120-82-1	1,2,4-Trichlorobenzene	6.85	17.12	73.72	50.79	126.98	546.67	
91-20-3	Naphthalene	1.46	3.66	6.03	7.67	19.17	31.61	
87-68-3	Hexachlorobutadiene	6.85	17.12	ND	73.02	182.56	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	8.23	82	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 15**

Description: SVE-EXT-SHAL-PRE **Date Sampled:** 05/12/12 **Time:** 09:04
Can/Tube#: 300 **Date Received:** 05/15/17 **Time:** 09:30
QC_Batch: 051712-MC1 **Date Analyzed:** 05/17/12 **Time:** 18:43
Air Volume: 20 ml **Can Dilution Factor:** 1.24

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	6.51	16.28	14.33	32.17	80.44	70.82	J
74-87-3	Chloromethane	6.32	15.81	27.46	13.06	32.64	56.69	
76-14-2	Freon 114	6.45	16.12	ND	45.05	112.62	ND	ND
75-01-4	Vinyl chloride	6.45	16.12	185.83	16.47	41.19	474.80	
106-99-0	1,3-Butadiene	6.63	16.59	33.83	14.67	36.68	74.81	
74-83-9	Bromomethane	6.45	16.12	6.48	25.01	62.54	25.14	J
75-00-3	Chloroethane	6.45	16.12	ND	17.00	42.50	ND	ND
75-69-4	Trichlorofluoromethane	6.45	16.12	ND	36.22	90.54	ND	ND
67-64-1	Acetone	7.02	17.55	71.14	16.67	41.67	168.97	
75-35-4	1,1-Dichloroethene	6.26	15.66	49.71	24.81	62.01	196.92	
76-13-1	Freon 113	6.32	15.81	ND	48.45	121.12	ND	ND
75-09-2	Dichloromethane	6.45	16.12	8.92	22.38	55.95	30.97	J
75-15-0	Carbon disulfide	5.30	13.25	ND	16.49	41.23	ND	ND
156-60-5	trans-1,2-Dichloroethene	4.12	10.29	17.46	16.31	40.77	69.15	
1634-04-4	Methyl tert butyl ether	4.21	10.52	ND	15.16	37.90	ND	ND
75-34-3	1,1-Dichloroethane	6.26	15.66	2,250.49	25.34	63.36	9,107.86	E
108-05-4	Vinyl acetate	5.02	12.54	ND	17.65	44.14	ND	ND
78-93-3	2-Butanone	5.81	14.52	ND	17.12	42.81	ND	ND
110-54-3	Hexane	4.22	10.54	15.11	14.86	37.14	53.24	
126-98-7	Methacrylonitrile	5.89	14.73	ND	16.16	40.39	ND	ND
141-78-6	Ethyl acetate	5.00	12.49	510.17	18.00	44.99	1,837.36	E
74-97-5	Bromochloromethane	3.04	7.60	39.69	16.07	40.18	209.93	
78-83-1	Isobutyl alcohol	4.71	11.78	ND	14.27	35.68	ND	ND
156-59-2	cis-1,2-Dichloroethene	6.39	15.97	158.48	25.30	63.24	627.77	
594-20-7	2,2-Dichloropropane	5.08	12.69	ND	23.46	58.64	ND	ND
67-66-3	Chloroform	6.32	15.81	581.04	30.87	77.17	2,836.05	E
71-55-6	1,1,1-Trichloroethane	6.32	15.81	2,014.65	34.49	86.22	10,986.49	E
107-06-2	1,2-Dichloroethane	6.39	15.97	190.04	25.84	64.61	769.11	
563-58-6	1,1-Dichloropropene	3.76	9.39	ND	17.05	42.62	ND	ND
110-82-7	Cyclohexane	4.37	10.93	ND	15.05	37.61	ND	ND
71-43-2	Benzene	6.39	15.97	31.98	20.39	50.97	102.11	
56-23-5	Carbon tetrachloride	6.32	15.81	327.81	39.76	99.40	2,061.00	E
142-82-5	n-Heptane	3.46	8.65	ND	14.17	35.43	ND	ND
78-87-5	1,2-Dichloropropane	6.39	15.97	13.44	29.50	73.75	62.06	J
123-91-1	1,4 Dioxane	11.66	29.14	62.12	41.98	104.95	223.73	
74-95-3	Dibromomethane	2.15	5.36	ND	15.24	38.10	ND	ND
79-01-6	Trichloroethene	6.39	15.97	916.28	34.30	85.76	4,921.85	E

75-27-4	Bromodichloromethane	2.29	5.74	ND	15.36	38.40	ND	ND
80-62-6	Methyl methacrylate	3.86	9.64	ND	15.78	39.45	ND	ND
108-10-1	4-Methyl-2-pentanone	4.32	10.79	ND	17.68	44.19	ND	ND
10061-01-5	cis-1,3-Dichloropropene	6.57	16.43	ND	29.82	74.55	ND	ND
108-88-3	Toluene	6.39	15.97	105.63	24.04	60.11	397.70	
10061-02-6	trans-1,3-Dichloropropene	6.45	16.12	ND	29.26	73.15	ND	ND
79-00-5	1,1,2-Trichloroethane	6.32	15.81	971.35	34.49	86.22	5,297.08	E
591-78-6	2-Hexanone	4.05	10.12	4.72	16.58	41.46	19.32	J
142-28-9	1,3-Dichloropropane	3.75	9.38	ND	17.33	43.32	ND	ND
111-65-9	Octane	3.11	7.78	ND	14.53	36.33	ND	ND
124-48-1	Dibromochloromethane	2.28	5.69	15.81	19.38	48.44	134.60	
106-93-4	1,2-Dibromoethane	6.45	16.12	ND	49.53	123.82	ND	ND
127-18-4	Tetrachloroethene	6.32	15.81	30.67	42.86	107.16	207.85	
108-90-7	Chlorobenzene	6.32	15.81	9.70	29.11	72.77	44.64	J
630-20-6	1,1,1,2-Tetrachloroethane	2.36	5.91	6.61	16.20	40.51	45.34	
100-41-4	Ethylbenzene	6.45	16.12	31.38	27.99	69.98	136.25	
1330-20-7	m,p-Xylenes	12.77	31.93	131.95	55.45	138.62	572.85	
111-84-2	Nonane	2.72	6.79	ND	14.24	35.61	ND	ND
100-42-5	Styrene	6.39	15.97	ND	27.20	68.01	ND	ND
75-25-2	Bromoform	1.53	3.83	ND	15.82	39.55	ND	ND
95-47-6	o-Xylene	6.32	15.81	61.74	27.45	68.64	268.04	
79-34-5	1,1,2,2-Tetrachloroethane	6.32	15.81	ND	43.38	108.45	ND	ND
96-18-4	1,2,3-Trichloropropane	2.81	7.02	ND	16.92	42.31	ND	ND
103-65-1	n-Propylbenzene	4.28	10.70	9.90	21.02	52.55	48.67	J
98-82-8	Isopropylbenzene	4.34	10.85	42.33	21.33	53.31	207.98	
622-96-8	4-Ethyltoluene	3.52	8.80	34.28	17.30	43.26	168.44	
108-67-8	1,3,5-Trimethylbenzene	6.57	16.43	14.40	32.29	80.73	70.76	J
124-18-5	Decane	2.89	7.22	4.94	16.81	42.02	28.75	J
98-06-6	tert-butyl benzene	3.78	9.46	7.86	20.75	51.87	43.14	J
95-63-6	1,2,4-Trimethylbenzene	6.32	15.81	45.43	31.07	77.69	223.23	
538-93-2	i-Butylbenzene	3.78	9.46	ND	20.75	51.87	ND	ND
135-98-8	sec-butylbenzene	4.03	10.08	ND	22.11	55.27	ND	ND
541-73-1	1,3-Dichlorobenzene	6.32	15.81	ND	38.00	95.01	ND	ND
99-87-6	Isopropyltoluene	3.97	9.92	ND	21.77	54.42	ND	ND
100-44-7	Benzyl chloride	3.65	9.11	ND	18.87	47.17	ND	ND
106-46-7	1,4-Dichlorobenzene	6.32	15.81	ND	38.00	95.01	ND	ND
104-51-8	n-Butylbenzene	3.72	9.30	5.55	20.41	51.02	30.45	J
95-50-1	1,2-Dichlorobenzene	6.20	15.50	ND	37.26	93.14	ND	ND
120-82-1	1,2,4-Trichlorobenzene	6.39	15.97	11.23	47.36	118.39	83.30	J
91-20-3	Naphthalene	1.36	3.41	30.13	7.15	17.87	157.91	
87-68-3	Hexachlorobutadiene	6.39	15.97	ND	68.08	170.21	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	8.84	88	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 16**

Description: SVE-OBS-DEEP-40'-PRE **Date Sampled:** 05/13/12 **Time:** 08:21
Can/Tube#: 345 **Date Received:** 05/15/17 **Time:** 09:30
QC_Batch: 051712-MC1 **Date Analyzed:** 05/17/12 **Time:** 19:50
Air Volume: 20 ml **Can Dilution Factor:** 1.36

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	7.14	17.85	ND	35.29	88.22	ND	ND
74-87-3	Chloromethane	6.94	17.34	ND	14.32	35.80	ND	ND
76-14-2	Freon 114	7.07	17.68	ND	49.41	123.52	ND	ND
75-01-4	Vinyl chloride	7.07	17.68	ND	18.07	45.17	ND	ND
106-99-0	1,3-Butadiene	7.28	18.19	ND	16.09	40.23	ND	ND
74-83-9	Bromomethane	7.07	17.68	ND	27.44	68.59	ND	ND
75-00-3	Chloroethane	7.07	17.68	ND	18.65	46.62	ND	ND
75-69-4	Trichlorofluoromethane	7.07	17.68	ND	39.72	99.31	ND	ND
67-64-1	Acetone	7.70	19.24	ND	18.28	45.71	ND	ND
75-35-4	1,1-Dichloroethene	6.87	17.17	296.64	27.21	68.01	1,175.07	E
76-13-1	Freon 113	6.94	17.34	ND	53.14	132.84	ND	ND
75-09-2	Dichloromethane	7.07	17.68	ND	24.54	61.36	ND	ND
75-15-0	Carbon disulfide	5.81	14.54	ND	18.09	45.22	ND	ND
156-60-5	trans-1,2-Dichloroethene	4.52	11.29	ND	17.89	44.71	ND	ND
1634-04-4	Methyl tert butyl ether	4.62	11.54	ND	16.63	41.57	ND	ND
75-34-3	1,1-Dichloroethane	6.87	17.17	ND	27.80	69.49	ND	ND
108-05-4	Vinyl acetate	5.50	13.75	10.98	19.36	48.41	38.65	J
78-93-3	2-Butanone	6.37	15.93	ND	18.78	46.95	ND	ND
110-54-3	Hexane	4.62	11.56	9.18	16.29	40.74	32.35	J
126-98-7	Methacrylonitrile	6.46	16.15	ND	17.72	44.30	ND	ND
141-78-6	Ethyl acetate	5.48	13.70	ND	19.74	49.35	ND	ND
74-97-5	Bromochloromethane	3.33	8.33	ND	17.63	44.06	ND	ND
78-83-1	Isobutyl alcohol	5.17	12.92	ND	15.65	39.14	ND	ND
156-59-2	cis-1,2-Dichloroethene	7.00	17.51	ND	27.74	69.36	ND	ND
594-20-7	2,2-Dichloropropane	5.57	13.92	ND	25.73	64.32	ND	ND
67-66-3	Chloroform	6.94	17.34	ND	33.85	84.64	ND	ND
71-55-6	1,1,1-Trichloroethane	6.94	17.34	216.12	37.82	94.56	1,178.55	E
107-06-2	1,2-Dichloroethane	7.00	17.51	17.13	28.35	70.86	69.32	J
563-58-6	1,1-Dichloropropene	4.12	10.30	ND	18.70	46.75	ND	ND
110-82-7	Cyclohexane	4.79	11.99	ND	16.50	41.25	ND	ND
71-43-2	Benzene	7.00	17.51	7.25	22.36	55.90	23.15	J
56-23-5	Carbon tetrachloride	6.94	17.34	ND	43.61	109.02	ND	ND
142-82-5	n-Heptane	3.79	9.49	ND	15.54	38.86	ND	ND
78-87-5	1,2-Dichloropropane	7.00	17.51	ND	32.35	80.89	ND	ND
123-91-1	1,4 Dioxane	12.78	31.96	ND	46.04	115.10	ND	ND
74-95-3	Dibromomethane	2.35	5.88	ND	16.72	41.79	ND	ND
79-01-6	Trichloroethene	7.00	17.51	ND	37.62	94.06	ND	ND

75-27-4	Bromodichloromethane	2.52	6.29	ND	16.85	42.12	ND	ND
80-62-6	Methyl methacrylate	4.23	10.57	ND	17.31	43.27	ND	ND
108-10-1	4-Methyl-2-pentanone	4.73	11.83	ND	19.39	48.47	ND	ND
10061-01-5	cis-1,3-Dichloropropene	7.21	18.02	ND	32.71	81.77	ND	ND
108-88-3	Toluene	7.00	17.51	ND	26.37	65.93	ND	ND
10061-02-6	trans-1,3-Dichloropropene	7.07	17.68	ND	32.09	80.23	ND	ND
79-00-5	1,1,2-Trichloroethane	6.94	17.34	ND	37.82	94.56	ND	ND
591-78-6	2-Hexanone	4.44	11.10	ND	18.19	45.47	ND	ND
142-28-9	1,3-Dichloropropane	4.11	10.29	ND	19.00	47.51	ND	ND
111-65-9	Octane	3.41	8.53	ND	15.94	39.84	ND	ND
124-48-1	Dibromochloromethane	2.50	6.24	ND	21.25	53.13	ND	ND
106-93-4	1,2-Dibromoethane	7.07	17.68	ND	54.32	135.80	ND	ND
127-18-4	Tetrachloroethene	6.94	17.34	ND	47.01	117.53	ND	ND
108-90-7	Chlorobenzene	6.94	17.34	ND	31.93	79.82	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	2.59	6.48	ND	17.77	44.43	ND	ND
100-41-4	Ethylbenzene	7.07	17.68	ND	30.70	76.76	ND	ND
1330-20-7	m,p-Xylenes	14.01	35.02	ND	60.81	152.04	ND	ND
111-84-2	Nonane	2.98	7.45	ND	15.62	39.05	ND	ND
100-42-5	Styrene	7.00	17.51	ND	29.83	74.59	ND	ND
75-25-2	Bromoform	1.68	4.20	ND	17.35	43.38	ND	ND
95-47-6	o-Xylene	6.94	17.34	ND	30.11	75.28	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	6.94	17.34	ND	47.58	118.94	ND	ND
96-18-4	1,2,3-Trichloropropane	3.08	7.70	ND	18.56	46.40	ND	ND
103-65-1	n-Propylbenzene	4.69	11.73	ND	23.06	57.64	ND	ND
98-82-8	Isopropylbenzene	4.76	11.90	ND	23.39	58.47	ND	ND
622-96-8	4-Ethyltoluene	3.86	9.66	ND	18.98	47.45	ND	ND
108-67-8	1,3,5-Trimethylbenzene	7.21	18.02	ND	35.42	88.54	ND	ND
124-18-5	Decane	3.17	7.92	23.40	18.43	46.08	136.12	
98-06-6	tert-butyl benzene	4.15	10.37	ND	22.76	56.89	ND	ND
95-63-6	1,2,4-Trimethylbenzene	6.94	17.34	ND	34.08	85.20	ND	ND
538-93-2	i-Butylbenzene	4.15	10.37	ND	22.76	56.89	ND	ND
135-98-8	sec-butylbenzene	4.42	11.05	ND	24.25	60.62	ND	ND
541-73-1	1,3-Dichlorobenzene	6.94	17.34	ND	41.68	104.20	ND	ND
99-87-6	Isopropyltoluene	4.35	10.88	ND	23.88	59.69	ND	ND
100-44-7	Benzyl chloride	4.00	10.00	ND	20.69	51.73	ND	ND
106-46-7	1,4-Dichlorobenzene	6.94	17.34	ND	41.68	104.20	ND	ND
104-51-8	n-Butylbenzene	4.08	10.20	ND	22.38	55.96	ND	ND
95-50-1	1,2-Dichlorobenzene	6.80	17.00	ND	40.86	102.16	ND	ND
120-82-1	1,2,4-Trichlorobenzene	7.00	17.51	ND	51.94	129.85	ND	ND
91-20-3	Naphthalene	1.50	3.74	3.57	7.84	19.60	18.69	J
87-68-3	Hexachlorobutadiene	7.00	17.51	ND	74.67	186.68	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	8.86	89	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 17**

Description: SVE-EXT-DEEP-POST **Date Sampled:** 05/13/12 **Time:** 15:02
Can/Tube#: 332 **Date Received:** 05/15/17 **Time:** 09:30
QC_Batch: 051712-MC1 **Date Analyzed:** 05/17/12 **Time:** 21:29
Air Volume: 20 ml **Can Dilution Factor:** 1.36

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	7.14	17.85	9.78	35.29	88.22	48.32	J
74-87-3	Chloromethane	6.94	17.34	ND	14.32	35.80	ND	ND
76-14-2	Freon 114	7.07	17.68	ND	49.41	123.52	ND	ND
75-01-4	Vinyl chloride	7.07	17.68	ND	18.07	45.17	ND	ND
106-99-0	1,3-Butadiene	7.28	18.19	ND	16.09	40.23	ND	ND
74-83-9	Bromomethane	7.07	17.68	ND	27.44	68.59	ND	ND
75-00-3	Chloroethane	7.07	17.68	ND	18.65	46.62	ND	ND
75-69-4	Trichlorofluoromethane	7.07	17.68	ND	39.72	99.31	ND	ND
67-64-1	Acetone	7.70	19.24	70.44	18.28	45.71	167.30	
75-35-4	1,1-Dichloroethene	6.87	17.17	2,979.36	27.21	68.01	11,801.86	E
76-13-1	Freon 113	6.94	17.34	ND	53.14	132.84	ND	ND
75-09-2	Dichloromethane	7.07	17.68	ND	24.54	61.36	ND	ND
75-15-0	Carbon disulfide	5.81	14.54	ND	18.09	45.22	ND	ND
156-60-5	trans-1,2-Dichloroethene	4.52	11.29	ND	17.89	44.71	ND	ND
1634-04-4	Methyl tert butyl ether	4.62	11.54	ND	16.63	41.57	ND	ND
75-34-3	1,1-Dichloroethane	6.87	17.17	101.81	27.80	69.49	412.02	
108-05-4	Vinyl acetate	5.50	13.75	70.68	19.36	48.41	248.79	
78-93-3	2-Butanone	6.37	15.93	12.06	18.78	46.95	35.54	J
110-54-3	Hexane	4.62	11.56	48.84	16.29	40.74	172.10	
126-98-7	Methacrylonitrile	6.46	16.15	ND	17.72	44.30	ND	ND
141-78-6	Ethyl acetate	5.48	13.70	ND	19.74	49.35	ND	ND
74-97-5	Bromochloromethane	3.33	8.33	ND	17.63	44.06	ND	ND
78-83-1	Isobutyl alcohol	5.17	12.92	ND	15.65	39.14	ND	ND
156-59-2	cis-1,2-Dichloroethene	7.00	17.51	ND	27.74	69.36	ND	ND
594-20-7	2,2-Dichloropropane	5.57	13.92	ND	25.73	64.32	ND	ND
67-66-3	Chloroform	6.94	17.34	25.73	33.85	84.64	125.59	
71-55-6	1,1,1-Trichloroethane	6.94	17.34	2,793.20	37.82	94.56	15,232.18	E
107-06-2	1,2-Dichloroethane	7.00	17.51	232.14	28.35	70.86	939.48	
563-58-6	1,1-Dichloropropene	4.12	10.30	ND	18.70	46.75	ND	ND
110-82-7	Cyclohexane	4.79	11.99	ND	16.50	41.25	ND	ND
71-43-2	Benzene	7.00	17.51	9.37	22.36	55.90	29.93	J
56-23-5	Carbon tetrachloride	6.94	17.34	9.87	43.61	109.02	62.06	J
142-82-5	n-Heptane	3.79	9.49	ND	15.54	38.86	ND	ND
78-87-5	1,2-Dichloropropane	7.00	17.51	ND	32.35	80.89	ND	ND
123-91-1	1,4 Dioxane	12.78	31.96	ND	46.04	115.10	ND	ND
74-95-3	Dibromomethane	2.35	5.88	ND	16.72	41.79	ND	ND
79-01-6	Trichloroethene	7.00	17.51	35.82	37.62	94.06	192.43	

75-27-4	Bromodichloromethane	2.52	6.29	ND	16.85	42.12	ND	ND
80-62-6	Methyl methacrylate	4.23	10.57	ND	17.31	43.27	ND	ND
108-10-1	4-Methyl-2-pentanone	4.73	11.83	ND	19.39	48.47	ND	ND
10061-01-5	cis-1,3-Dichloropropene	7.21	18.02	ND	32.71	81.77	ND	ND
108-88-3	Toluene	7.00	17.51	9.70	26.37	65.93	36.51	J
10061-02-6	trans-1,3-Dichloropropene	7.07	17.68	ND	32.09	80.23	ND	ND
79-00-5	1,1,2-Trichloroethane	6.94	17.34	36.49	37.82	94.56	198.98	
591-78-6	2-Hexanone	4.44	11.10	ND	18.19	45.47	ND	ND
142-28-9	1,3-Dichloropropane	4.11	10.29	ND	19.00	47.51	ND	ND
111-65-9	Octane	3.41	8.53	ND	15.94	39.84	ND	ND
124-48-1	Dibromochloromethane	2.50	6.24	ND	21.25	53.13	ND	ND
106-93-4	1,2-Dibromoethane	7.07	17.68	ND	54.32	135.80	ND	ND
127-18-4	Tetrachloroethene	6.94	17.34	ND	47.01	117.53	ND	ND
108-90-7	Chlorobenzene	6.94	17.34	ND	31.93	79.82	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	2.59	6.48	ND	17.77	44.43	ND	ND
100-41-4	Ethylbenzene	7.07	17.68	ND	30.70	76.76	ND	ND
1330-20-7	m,p-Xylenes	14.01	35.02	ND	60.81	152.04	ND	ND
111-84-2	Nonane	2.98	7.45	ND	15.62	39.05	ND	ND
100-42-5	Styrene	7.00	17.51	ND	29.83	74.59	ND	ND
75-25-2	Bromoform	1.68	4.20	ND	17.35	43.38	ND	ND
95-47-6	o-Xylene	6.94	17.34	ND	30.11	75.28	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	6.94	17.34	ND	47.58	118.94	ND	ND
96-18-4	1,2,3-Trichloropropane	3.08	7.70	ND	18.56	46.40	ND	ND
103-65-1	n-Propylbenzene	4.69	11.73	ND	23.06	57.64	ND	ND
98-82-8	Isopropylbenzene	4.76	11.90	ND	23.39	58.47	ND	ND
622-96-8	4-Ethyltoluene	3.86	9.66	ND	18.98	47.45	ND	ND
108-67-8	1,3,5-Trimethylbenzene	7.21	18.02	ND	35.42	88.54	ND	ND
124-18-5	Decane	3.17	7.92	ND	18.43	46.08	ND	ND
98-06-6	tert-butyl benzene	4.15	10.37	ND	22.76	56.89	ND	ND
95-63-6	1,2,4-Trimethylbenzene	6.94	17.34	ND	34.08	85.20	ND	ND
538-93-2	i-Butylbenzene	4.15	10.37	ND	22.76	56.89	ND	ND
135-98-8	sec-butylbenzene	4.42	11.05	ND	24.25	60.62	ND	ND
541-73-1	1,3-Dichlorobenzene	6.94	17.34	ND	41.68	104.20	ND	ND
99-87-6	Isopropyltoluene	4.35	10.88	ND	23.88	59.69	ND	ND
100-44-7	Benzyl chloride	4.00	10.00	ND	20.69	51.73	ND	ND
106-46-7	1,4-Dichlorobenzene	6.94	17.34	ND	41.68	104.20	ND	ND
104-51-8	n-Butylbenzene	4.08	10.20	ND	22.38	55.96	ND	ND
95-50-1	1,2-Dichlorobenzene	6.80	17.00	ND	40.86	102.16	ND	ND
120-82-1	1,2,4-Trichlorobenzene	7.00	17.51	ND	51.94	129.85	ND	ND
91-20-3	Naphthalene	1.50	3.74	10.19	7.84	19.60	53.42	
87-68-3	Hexachlorobutadiene	7.00	17.51	ND	74.67	186.68	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	9.26	93	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 18**

Description: SVE-AREA 2-51312 **Date Sampled:** 05/13/12 **Time:** 08:25
Can/Tube#: 308 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 051812-MC1 **Date Analyzed:** 05/18/12 **Time:** 14:58
Air Volume: 500 ml **Can Dilution Factor:** 2.50

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	0.53	1.31	0.79	2.59	6.49	3.89	J
74-87-3	Chloromethane	0.51	1.28	1.01	1.05	2.63	2.09	J
76-14-2	Freon 114	0.52	1.30	ND	3.63	9.08	ND	ND
75-01-4	Vinyl chloride	0.52	1.30	ND	1.33	3.32	ND	ND
106-99-0	1,3-Butadiene	0.54	1.34	0.67	1.18	2.96	1.48	J
74-83-9	Bromomethane	0.52	1.30	ND	2.02	5.04	ND	ND
75-00-3	Chloroethane	0.52	1.30	ND	1.37	3.43	ND	ND
75-69-4	Trichlorofluoromethane	0.52	1.30	ND	2.92	7.30	ND	ND
67-64-1	Acetone	0.57	1.42	13.37	1.34	3.36	31.74	
75-35-4	1,1-Dichloroethene	0.51	1.26	0.77	2.00	5.00	3.06	J
76-13-1	Freon 113	0.51	1.28	ND	3.91	9.77	ND	ND
75-09-2	Dichloromethane	0.52	1.30	ND	1.80	4.51	ND	ND
75-15-0	Carbon disulfide	0.43	1.07	ND	1.33	3.32	ND	ND
156-60-5	trans-1,2-Dichloroethene	0.33	0.83	ND	1.32	3.29	ND	ND
1634-04-4	Methyl tert butyl ether	0.34	0.85	ND	1.22	3.06	ND	ND
75-34-3	1,1-Dichloroethane	0.51	1.26	ND	2.04	5.11	ND	ND
108-05-4	Vinyl acetate	0.40	1.01	7.18	1.42	3.56	25.27	
78-93-3	2-Butanone	0.47	1.17	10.91	1.38	3.45	32.14	
110-54-3	Hexane	0.34	0.85	6.04	1.20	3.00	21.28	
126-98-7	Methacrylonitrile	0.48	1.19	ND	1.30	3.26	ND	ND
141-78-6	Ethyl acetate	0.40	1.01	16.86	1.45	3.63	60.73	
74-97-5	Bromochloromethane	0.25	0.61	ND	1.30	3.24	ND	ND
78-83-1	Isobutyl alcohol	0.38	0.95	2.41	1.15	2.88	7.30	
156-59-2	cis-1,2-Dichloroethene	0.52	1.29	ND	2.04	5.10	ND	ND
594-20-7	2,2-Dichloropropane	0.41	1.02	ND	1.89	4.73	ND	ND
67-66-3	Chloroform	0.51	1.28	ND	2.49	6.22	ND	ND
71-55-6	1,1,1-Trichloroethane	0.51	1.28	0.65	2.78	6.95	3.53	J
107-06-2	1,2-Dichloroethane	0.52	1.29	ND	2.08	5.21	ND	ND
563-58-6	1,1-Dichloropropene	0.30	0.76	ND	1.37	3.44	ND	ND
110-82-7	Cyclohexane	0.35	0.88	ND	1.21	3.03	ND	ND
71-43-2	Benzene	0.52	1.29	0.79	1.64	4.11	2.51	J
56-23-5	Carbon tetrachloride	0.51	1.28	ND	3.21	8.02	ND	ND
142-82-5	n-Heptane	0.28	0.70	ND	1.14	2.86	ND	ND
78-87-5	1,2-Dichloropropane	0.52	1.29	ND	2.38	5.95	ND	ND
123-91-1	1,4 Dioxane	0.94	2.35	ND	3.39	8.46	ND	ND
74-95-3	Dibromomethane	0.17	0.43	ND	1.23	3.07	ND	ND
79-01-6	Trichloroethene	0.52	1.29	ND	2.77	6.92	ND	ND

75-27-4	Bromodichloromethane	0.19	0.46	ND	1.24	3.10	ND	ND
80-62-6	Methyl methacrylate	0.31	0.78	ND	1.27	3.18	ND	ND
108-10-1	4-Methyl-2-pentanone	0.35	0.87	1.99	1.43	3.56	8.14	
10061-01-5	cis-1,3-Dichloropropene	0.53	1.33	ND	2.40	6.01	ND	ND
108-88-3	Toluene	0.52	1.29	7.37	1.94	4.85	27.76	
10061-02-6	trans-1,3-Dichloropropene	0.52	1.30	ND	2.36	5.90	ND	ND
79-00-5	1,1,2-Trichloroethane	0.51	1.28	ND	2.78	6.95	ND	ND
591-78-6	2-Hexanone	0.33	0.82	ND	1.34	3.34	ND	ND
142-28-9	1,3-Dichloropropane	0.30	0.76	ND	1.40	3.49	ND	ND
111-65-9	Octane	0.25	0.63	ND	1.17	2.93	ND	ND
124-48-1	Dibromochloromethane	0.18	0.46	ND	1.56	3.91	ND	ND
106-93-4	1,2-Dibromoethane	0.52	1.30	ND	3.99	9.99	ND	ND
127-18-4	Tetrachloroethene	0.51	1.28	ND	3.46	8.64	ND	ND
108-90-7	Chlorobenzene	0.51	1.28	ND	2.35	5.87	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	0.19	0.48	ND	1.31	3.27	ND	ND
100-41-4	Ethylbenzene	0.52	1.30	ND	2.26	5.64	ND	ND
1330-20-7	m,p-Xylenes	1.03	2.58	ND	4.47	11.18	ND	ND
111-84-2	Nonane	0.22	0.55	1.56	1.15	2.87	8.16	
100-42-5	Styrene	0.52	1.29	ND	2.19	5.48	ND	ND
75-25-2	Bromoform	0.12	0.31	ND	1.28	3.19	ND	ND
95-47-6	o-Xylene	0.51	1.28	ND	2.21	5.54	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	0.51	1.28	ND	3.50	8.75	ND	ND
96-18-4	1,2,3-Trichloropropane	0.23	0.57	ND	1.36	3.41	ND	ND
103-65-1	n-Propylbenzene	0.35	0.86	ND	1.70	4.24	ND	ND
98-82-8	Isopropylbenzene	0.35	0.88	ND	1.72	4.30	ND	ND
622-96-8	4-Ethyltoluene	0.28	0.71	ND	1.40	3.49	ND	ND
108-67-8	1,3,5-Trimethylbenzene	0.53	1.33	ND	2.60	6.51	ND	ND
124-18-5	Decane	0.23	0.58	ND	1.36	3.39	ND	ND
98-06-6	tert-butyl benzene	0.31	0.76	ND	1.67	4.18	ND	ND
95-63-6	1,2,4-Trimethylbenzene	0.51	1.28	ND	2.51	6.26	ND	ND
538-93-2	i-Butylbenzene	0.31	0.76	ND	1.67	4.18	ND	ND
135-98-8	sec-butylbenzene	0.33	0.81	ND	1.78	4.46	ND	ND
541-73-1	1,3-Dichlorobenzene	0.51	1.28	ND	3.06	7.66	ND	ND
99-87-6	Isopropyltoluene	0.32	0.80	ND	1.76	4.39	ND	ND
100-44-7	Benzyl chloride	0.29	0.74	ND	1.52	3.80	ND	ND
106-46-7	1,4-Dichlorobenzene	0.51	1.28	ND	3.06	7.66	ND	ND
104-51-8	n-Butylbenzene	0.30	0.75	ND	1.65	4.11	ND	ND
95-50-1	1,2-Dichlorobenzene	0.50	1.25	ND	3.00	7.51	ND	ND
120-82-1	1,2,4-Trichlorobenzene	0.52	1.29	0.71	3.82	9.55	5.25	J
91-20-3	Naphthalene	0.11	0.28	0.22	0.58	1.44	1.15	J
87-68-3	Hexachlorobutadiene	0.52	1.29	ND	5.49	13.73	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	7.87	79	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified SIM GC/MS **SDG: 212213**
Analytical Method: TO15 SIM **Laboratory ID: 18**

Description: SVE-AREA 2-051312 **Date Sampled:** 05/13/12 **Time:** 08:25
Can/Tube#: 308 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 052412-MB1 **Date Analyzed:** 05/24/12 **Time:** 17:05
Air Volume: 500 ml **Can Dilution Factor:** 2.50

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	0.025	0.130	0.188	0.124	0.643	0.928	
74-87-3	Chloromethane	0.025	0.130	0.254	0.052	0.268	0.524	
76-14-2	Freon 114	0.025	0.130	ND	0.175	0.908	ND	ND
75-01-4	Vinyl chloride	0.025	0.130	ND	0.064	0.332	ND	ND
74-83-9	Bromomethane	0.025	0.130	0.046	0.097	0.504	0.180	J
75-00-3	Chloroethane	0.025	0.130	0.033	0.066	0.343	0.087	J
75-69-4	Trichlorofluoromethane	0.025	0.130	0.107	0.140	0.730	0.603	J
75-35-4	1,1-Dichloroethene	0.025	0.130	0.033	0.099	0.515	0.130	J
76-13-1	Freon 113	0.025	0.130	0.084	0.192	0.996	0.645	J
75-09-2	Dichloromethane	0.025	0.130	0.084	0.087	0.451	0.290	J
156-60-5	trans-1,2-Dichloroethene	0.025	0.130	0.107	0.099	0.515	0.423	J
1634-04-4	Methyl tert butyl ether	0.025	0.130	ND	0.090	0.468	ND	ND
75-34-3	1,1-Dichloroethane	0.025	0.130	ND	0.101	0.526	ND	ND
156-59-2	cis-1,2-Dichloroethene	0.025	0.130	ND	0.099	0.515	ND	ND
67-66-3	Chloroform	0.025	0.130	ND	0.122	0.635	ND	ND
71-55-6	1,1,1-Trichloroethane	0.025	0.130	0.307	0.136	0.709	1.676	
107-06-2	1,2-Dichloroethane	0.025	0.130	ND	0.101	0.526	ND	ND
71-43-2	Benzene	0.025	0.130	0.316	0.080	0.415	1.008	
56-23-5	Carbon tetrachloride	0.025	0.130	0.094	0.157	0.817	0.594	J
78-87-5	1,2-Dichloropropane	0.025	0.130	ND	0.115	0.601	ND	ND
79-01-6	Trichloroethene	0.025	0.130	ND	0.134	0.698	ND	ND
75-27-4	Bromodichloromethane	0.025	0.130	ND	0.167	0.870	ND	ND
10061-01-5	cis-1,3-Dichloropropene	0.025	0.130	ND	0.113	0.590	ND	ND
108-88-3	Toluene	0.025	0.130	6.096	0.094	0.489	22.952	
10061-02-6	trans-1,3-Dichloropropene	0.025	0.130	ND	0.113	0.590	ND	ND
79-00-5	1,1,2-Trichloroethane	0.025	0.130	ND	0.136	0.709	ND	ND
106-93-4	1,2-Dibromoethane	0.025	0.130	ND	0.192	0.999	ND	ND
127-18-4	Tetrachloroethene	0.025	0.130	0.074	0.169	0.881	0.502	J
108-90-7	Chlorobenzene	0.025	0.130	ND	0.115	0.598	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	0.025	0.130	ND	0.171	0.892	ND	ND
100-41-4	Ethylbenzene	0.025	0.130	0.303	0.109	0.564	1.316	
1330-20-7	m,p-Xylenes	0.025	0.130	0.751	0.109	0.564	3.260	
100-42-5	Styrene	0.025	0.130	0.164	0.106	0.554	0.698	
95-47-6	o-Xylene	0.025	0.130	0.254	0.109	0.564	1.103	
79-34-5	1,1,2,2-Tetrachloroethane	0.025	0.130	ND	0.171	0.892	ND	ND
622-96-8	4-Ethyltoluene	0.025	0.130	0.213	0.123	0.639	1.048	
108-67-8	1,3,5-Trimethylbenzene	0.025	0.130	0.091	0.123	0.639	0.449	J

95-63-6	1,2,4-Trimethylbenzene	0.025	0.130	0.306	0.123	0.639	1.502	
541-73-1	1,3-Dichlorobenzene	0.025	0.130	0.025	0.150	0.781	0.150	
100-44-7	Benzyl chloride	0.025	0.130	ND	0.129	0.673	ND	ND
106-46-7	1,4-Dichlorobenzene	0.025	0.130	0.074	0.150	0.781	0.445	J
95-50-1	1,2-Dichlorobenzene	0.025	0.130	ND	0.150	0.781	ND	ND
91-20-3	Naphthalene	0.025	0.130	0.220	0.131	0.681	1.154	

	Surrogate Recovery	Spike ppbV	Measured ppbV	% Rec.	QC LCL	Limits UCL	Flag * = Out
2037-26-5	Toluene-d8	0.20	0.19	94	70	130	

ANALYTICAL REPORT

ENVIRONMENTAL
Analytical Service, Inc.

EPA Method TO-15 Modified Full Scan GC/MS **SDG: 212213**
Analytical Method: TO15 **Laboratory ID: 19**

Description: SVE-CARBON-POST-02 **Date Sampled:** 05/13/12 **Time:** 13:50
Can/Tube#: 348 **Date Received:** 05/15/12 **Time:** 09:30
QC_Batch: 051812-MC1 **Date Analyzed:** 05/18/12 **Time:** 18:20
Air Volume: 20 ml **Can Dilution Factor:** 1.36

CAS#	Compound	MDL PPBV	RL PPBV	Amount PPBV	MDL UG/M3	RL UG/M3	Amount UG/M3	Flag
75-71-8	Dichlorodifluoromethane	7.14	17.85	ND	35.29	88.22	ND	ND
74-87-3	Chloromethane	6.94	17.34	21.11	14.32	35.80	43.58	
76-14-2	Freon 114	7.07	17.68	ND	49.41	123.52	ND	ND
75-01-4	Vinyl chloride	7.07	17.68	ND	18.07	45.17	ND	ND
106-99-0	1,3-Butadiene	7.28	18.19	ND	16.09	40.23	ND	ND
74-83-9	Bromomethane	7.07	17.68	ND	27.44	68.59	ND	ND
75-00-3	Chloroethane	7.07	17.68	ND	18.65	46.62	ND	ND
75-69-4	Trichlorofluoromethane	7.07	17.68	ND	39.72	99.31	ND	ND
67-64-1	Acetone	7.70	19.24	25.22	18.28	45.71	59.89	
75-35-4	1,1-Dichloroethene	6.87	17.17	15.47	27.21	68.01	61.27	J
76-13-1	Freon 113	6.94	17.34	ND	53.14	132.84	ND	ND
75-09-2	Dichloromethane	7.07	17.68	ND	24.54	61.36	ND	ND
75-15-0	Carbon disulfide	5.81	14.54	ND	18.09	45.22	ND	ND
156-60-5	trans-1,2-Dichloroethene	4.52	11.29	ND	17.89	44.71	ND	ND
1634-04-4	Methyl tert butyl ether	4.62	11.54	ND	16.63	41.57	ND	ND
75-34-3	1,1-Dichloroethane	6.87	17.17	ND	27.80	69.49	ND	ND
108-05-4	Vinyl acetate	5.50	13.75	ND	19.36	48.41	ND	ND
78-93-3	2-Butanone	6.37	15.93	13.10	18.78	46.95	38.62	J
110-54-3	Hexane	4.62	11.56	ND	16.29	40.74	ND	ND
126-98-7	Methacrylonitrile	6.46	16.15	ND	17.72	44.30	ND	ND
141-78-6	Ethyl acetate	5.48	13.70	7.19	19.74	49.35	25.90	J
74-97-5	Bromochloromethane	3.33	8.33	ND	17.63	44.06	ND	ND
78-83-1	Isobutyl alcohol	5.17	12.92	ND	15.65	39.14	ND	ND
156-59-2	cis-1,2-Dichloroethene	7.00	17.51	ND	27.74	69.36	ND	ND
594-20-7	2,2-Dichloropropane	5.57	13.92	ND	25.73	64.32	ND	ND
67-66-3	Chloroform	6.94	17.34	ND	33.85	84.64	ND	ND
71-55-6	1,1,1-Trichloroethane	6.94	17.34	7.24	37.82	94.56	39.47	J
107-06-2	1,2-Dichloroethane	7.00	17.51	ND	28.35	70.86	ND	ND
563-58-6	1,1-Dichloropropene	4.12	10.30	ND	18.70	46.75	ND	ND
110-82-7	Cyclohexane	4.79	11.99	ND	16.50	41.25	ND	ND
71-43-2	Benzene	7.00	17.51	ND	22.36	55.90	ND	ND
56-23-5	Carbon tetrachloride	6.94	17.34	ND	43.61	109.02	ND	ND
142-82-5	n-Heptane	3.79	9.49	ND	15.54	38.86	ND	ND
78-87-5	1,2-Dichloropropane	7.00	17.51	ND	32.35	80.89	ND	ND
123-91-1	1,4 Dioxane	12.78	31.96	ND	46.04	115.10	ND	ND
74-95-3	Dibromomethane	2.35	5.88	ND	16.72	41.79	ND	ND
79-01-6	Trichloroethene	7.00	17.51	ND	37.62	94.06	ND	ND

75-27-4	Bromodichloromethane	2.52	6.29	ND	16.85	42.12	ND	ND
80-62-6	Methyl methacrylate	4.23	10.57	ND	17.31	43.27	ND	ND
108-10-1	4-Methyl-2-pentanone	4.73	11.83	ND	19.39	48.47	ND	ND
10061-01-5	cis-1,3-Dichloropropene	7.21	18.02	ND	32.71	81.77	ND	ND
108-88-3	Toluene	7.00	17.51	7.79	26.37	65.93	29.34	J
10061-02-6	trans-1,3-Dichloropropene	7.07	17.68	ND	32.09	80.23	ND	ND
79-00-5	1,1,2-Trichloroethane	6.94	17.34	ND	37.82	94.56	ND	ND
591-78-6	2-Hexanone	4.44	11.10	ND	18.19	45.47	ND	ND
142-28-9	1,3-Dichloropropane	4.11	10.29	4.12	19.00	47.51	19.03	J
111-65-9	Octane	3.41	8.53	ND	15.94	39.84	ND	ND
124-48-1	Dibromochloromethane	2.50	6.24	ND	21.25	53.13	ND	ND
106-93-4	1,2-Dibromoethane	7.07	17.68	ND	54.32	135.80	ND	ND
127-18-4	Tetrachloroethene	6.94	17.34	ND	47.01	117.53	ND	ND
108-90-7	Chlorobenzene	6.94	17.34	ND	31.93	79.82	ND	ND
630-20-6	1,1,1,2-Tetrachloroethane	2.59	6.48	ND	17.77	44.43	ND	ND
100-41-4	Ethylbenzene	7.07	17.68	ND	30.70	76.76	ND	ND
1330-20-7	m,p-Xylenes	14.01	35.02	ND	60.81	152.04	ND	ND
111-84-2	Nonane	2.98	7.45	ND	15.62	39.05	ND	ND
100-42-5	Styrene	7.00	17.51	ND	29.83	74.59	ND	ND
75-25-2	Bromoform	1.68	4.20	ND	17.35	43.38	ND	ND
95-47-6	o-Xylene	6.94	17.34	ND	30.11	75.28	ND	ND
79-34-5	1,1,2,2-Tetrachloroethane	6.94	17.34	ND	47.58	118.94	ND	ND
96-18-4	1,2,3-Trichloropropane	3.08	7.70	ND	18.56	46.40	ND	ND
103-65-1	n-Propylbenzene	4.69	11.73	ND	23.06	57.64	ND	ND
98-82-8	Isopropylbenzene	4.76	11.90	ND	23.39	58.47	ND	ND
622-96-8	4-Ethyltoluene	3.86	9.66	ND	18.98	47.45	ND	ND
108-67-8	1,3,5-Trimethylbenzene	7.21	18.02	ND	35.42	88.54	ND	ND
124-18-5	Decane	3.17	7.92	ND	18.43	46.08	ND	ND
98-06-6	tert-butyl benzene	4.15	10.37	ND	22.76	56.89	ND	ND
95-63-6	1,2,4-Trimethylbenzene	6.94	17.34	ND	34.08	85.20	ND	ND
538-93-2	i-Butylbenzene	4.15	10.37	ND	22.76	56.89	ND	ND
135-98-8	sec-butylbenzene	4.42	11.05	ND	24.25	60.62	ND	ND
541-73-1	1,3-Dichlorobenzene	6.94	17.34	ND	41.68	104.20	ND	ND
99-87-6	Isopropyltoluene	4.35	10.88	ND	23.88	59.69	ND	ND
100-44-7	Benzyl chloride	4.00	10.00	ND	20.69	51.73	ND	ND
106-46-7	1,4-Dichlorobenzene	6.94	17.34	ND	41.68	104.20	ND	ND
104-51-8	n-Butylbenzene	4.08	10.20	ND	22.38	55.96	ND	ND
95-50-1	1,2-Dichlorobenzene	6.80	17.00	ND	40.86	102.16	ND	ND
120-82-1	1,2,4-Trichlorobenzene	7.00	17.51	ND	51.94	129.85	ND	ND
91-20-3	Naphthalene	1.50	3.74	4.97	7.84	19.60	26.04	
87-68-3	Hexachlorobutadiene	7.00	17.51	ND	74.67	186.68	ND	ND

		Spike	Measured		QC	Limits	Flag
	Surrogate Recovery	ppbV	ppbV	% Rec.	LCL	UCL	* = Out
2037-26-5	Toluene-d8	10.00	9.24	92	70	130	

Data Qualifiers, Abbreviations and Definitions

ENVIRONMENTAL
Analytical Service, Inc.

Qualifiers

*	See Case Narrative
B	This compound was detected in the blank above the Reporting Limit (RL)
D	This report was calculated from a secondary dilution factor
E	Compound exceeds the calibration range and is an estimated value
J	The amount reported is an estimated value because it is between the Reporting Limit (RL) and the Method Detection Limit (MDL)
F	Higher detection limit due to sample matrix
G	Higher detection limit due to limited sample size
Q	Compound secondary ion ratio qualifiers are outside the standard acceptance criteria
R	Compound secondary retention time (RT) is outside the acceptance criteria for the method
U	Compound is less than the Method Detection Limit (MDL)

Abbreviations

MDL Minimum Detection Limit – Instrument detection limit

The minimum detectable level (MDL) is the lowest concentration of a substance that can be measured with confidence. The MDL is calculated at the 99% confidence level from seven repetitive measurements on a sample whose concentration does not exceed 10 times the estimated MDL (Glasser et. al. 1981; Long and Winefordner, 1983). Generating an MDL study, a sample is prepared in the appropriate matrix with components near the estimated MDL, which is about 3 times the instrument noise level. This sample is run seven consecutive times and the standard deviation (S) is calculated. The MDL is determined using the following formula: MDL = 3.14*S

ND Not Detected – a reported limit
NA Not Applicable
RPD Relative Percent Difference

The relative percent difference for a pair of duplicate samples is calculated from repetitive runs on sample pairs representative of the types of samples that are analyzed. The RPD provides information on the precision or reproducibility of the actual measurement process. The RPD is calculated for a particular compound from the average using the following formula:

$$RPD(\%) = \frac{\text{Difference} * 100}{\text{Average}}$$

RSD Relative Standard Deviation

The relative standard deviation is reported as a percentage deviation at a particular concentration using the following equation:

$$RSD\ (\%) = \frac{S * 100}{\text{Average}}$$

Definitions

ppbV $= \frac{\text{\# nanomoles cmpd}}{\text{\# moles air}} = \frac{\text{ppbC}}{\text{\# carbons in cmpd}}$

Compound is reported as ppb of compound by Volume

This unit is temperature independent

ug/m^3 $= \text{ppbV} \times \frac{\text{MW compound}}{23.68}$

Compound is reported as ug of a compound in a m^3 of air

23.68 is the molar volume of a gas at 60 ° F and 1 atm pressure

MW = molecular weight

This unit is temperature dependent

ppbC = ppbV x # carbons in compound

APPENDIX F

June 1, 2012 Analytical Report for Service Request No: K1204618

Ethan Allen
Environmental Management Services, Inc.
7350 Hwy 98
P.O. Box 15369
Hattiesburg, MS 39402

RE: SVE PILOT/KUH0-11-006

Dear Ethan:

Enclosed are the results of the samples submitted to our laboratory on May 15, 2012. For your reference, these analyses have been assigned our service request number K1204618.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3260. You may also contact me via Email at Rani.Senkbeil@alsglobal.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Rani Senkbeil
Project Manager

RS/jw

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Columbia Analytical Services, Inc. - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2286
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L12-28
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Georgia DNR	http://www.gaepd.org/Documents/techguide_pcb.html#cel	881
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
Indiana DOH	http://www.in.gov/isdh/24859.htm	C-WA-01
ISO 17025	http://www.pjlabs.com/	L12-27
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	3016
Louisiana DHH	Not available	LA110003
Maine DHS	Not available	WA0035
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-368
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA35
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
New Mexico ED	http://www.nmenv.state.nm.us/dwb/Index.htm	-
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA200001
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427-08-TX
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C1203
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.caslab.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.caslab.com or at the accreditation bodies web site

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Environmental Management Services, Inc.	**Service Request No.:**	K1204618
Project:	SVE PILOT	**Date Received:**	05/15/12
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Laboratory Control Sample (LCS).

Sample Receipt

One water sample and one trip blank were received for analysis at Columbia Analytical Services on 05/15/12. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Volatile Organic Compounds by EPA Method 8260

Calibration Verification Exceptions:
The following analytes were flagged as outside the lower control criterion for Continuing Calibration Verification (CCV) J:\MS18\0523F003.D: Acetone, 2-Butanone (MEK), Dibromofluoromethane, 4-Methyl-2-pentanone (MIBK), 2-Hexanone, and 1,2-Dibromo-3-chloropropane. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The CAS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

No other anomalies associated with the analysis of these samples were observed.

1,4-Dioxane by GC/MS

Sample Notes and Discussion:
Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Matrix Spike (MS) and Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

No other anomalies associated with the analysis of these samples were observed.

Approved by _____ **Date** 06/04/12

Columbia Analytical Services

31454 CHAIN OF CUSTODY

SR# K1204618

COC Set 1 of 1

Page 1 OF 1 COC#

1317 South 13th Ave, Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

Project Name	SVE PILOT
Project Number	KUHO-11-0006
Project Manager	CHRIS JOHNSON
Company Name	ENVIRONMENTAL MANAGEMENT SVCS
Comany Address	PO BOX 15369
City/State/Zip	HATTIESBURG, MS 39404
E-Mail Address	cjohnson@env-mgt.com
Phone #	601-544-3674
FAX #	601-544-0504
Sampler Signature	Chris Johnson

	Sample ID	Date	Time	Lab ID	Matrix	Number of Containers	7D	14D	8270D / 1,4-Dioxane	8260C / VOC FP			Remarks
1	SVE-EXT-DEEP	5/12/12	19:30		H_2O	4			3				1
2	TB1 47002	5/8/12	12:00			2			✓				2
3													3
4													4
5													5
6													6
7													7
8													8
9													9
10													10
11													11

[redacted]

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required

✓ II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes all raw data)

___ IV. CLP Deliverable Report

___ V. EDD

Invoice Information

P.O.# KEC SVE (KUHO-11-006)

Bill To: EMS

PO Box 15369

HATTIESBURG, MS 39404

Turnaround Requirements

___ 24 hr. ___ 48 hr.

___ 5 Day

✓ Standard (10-15 working days)

___ Provide Fax Results

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: Chris Johnson	Signature: [illegible]	Signature:	Signature:
Date/Time: 5/14/12 1140	Date/Time: 5/16/12 0845	Date/Time:	Date/Time:
Printed Name: CHRIS T. JOHNSON	Printed Name: [illegible]	Printed Name:	Printed Name:
Firm: EMS	Firm: ALS	Firm:	Firm:

6

PC Rani

Cooler Receipt and Preservation Form

Client / Project: EMS Service Request *K12* 04618

Received: 5/15/12 Opened: 5/15/12 By: SMW Unloaded: 5/15/12 By: SMW

1. Samples were received via? *Mail* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA Y (N) If yes, how many and where?_____

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Cooler Temp °C	Temp Blank °C	Thermometer ID	Cooler/COC ID (NA)	Tracking Number	NA	Filed
-0.4	1.9	316		7983 9269 5837		

7. Packing material: *Inserts* (*Baggies*) (*Bubble Wrap*) (*Gel Packs*) (*Wet Ice*) *Dry Ice* *Sleeves* _____
8. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA (Y) N
10. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
11. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
12. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
13. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
14. Were VOA vials received without headspace? *Indicate in the table below.* NA (Y) N
15. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

*Notes, Discrepancies, & Resolutions:*_____

Client: Environmental Management Services, Inc.
Project: SVE PILOT/KUH0-11-006
Sample Matrix: Water

Service Request: K1204618
Date Collected: 05/12/2012
Date Received: 05/15/2012

Volatile Organic Compounds

Sample Name: SVE-EXT-DEEP
Lab Code: K1204618-001

Units: ug/L
Basis: NA

Extraction Method: EPA 5030B
Analysis Method: 8260C

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.13	1	05/23/12	05/23/12	KWG1205397	
Chloromethane	ND	U	0.50	0.068	1	05/23/12	05/23/12	KWG1205397	
Vinyl Chloride	ND	U	0.50	0.075	1	05/23/12	05/23/12	KWG1205397	
Bromomethane	ND	U	0.50	0.10	1	05/23/12	05/23/12	KWG1205397	
Chloroethane	ND	U	0.50	0.16	1	05/23/12	05/23/12	KWG1205397	
Trichlorofluoromethane	ND	U	0.50	0.12	1	05/23/12	05/23/12	KWG1205397	
Methyl Acetate	ND	U	1.0	0.38	1	05/23/12	05/23/12	KWG1205397	
1,1-Dichloroethene	**140**	D	5.0	0.80	10	05/23/12	05/23/12	KWG1205397	
Acetone	ND	U	20	3.3	1	05/23/12	05/23/12	KWG1205397	*
Carbon Disulfide	**0.070**	J	0.50	0.069	1	05/23/12	05/23/12	KWG1205397	
Methylene Chloride	ND	U	2.0	0.10	1	05/23/12	05/23/12	KWG1205397	
Methyl tert-Butyl Ether	ND	U	0.50	0.11	1	05/23/12	05/23/12	KWG1205397	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	05/23/12	05/23/12	KWG1205397	
1,1-Dichloroethane	**6.2**		0.50	0.077	1	05/23/12	05/23/12	KWG1205397	
cis-1,2-Dichloroethene	**0.27**	J	0.50	0.067	1	05/23/12	05/23/12	KWG1205397	
2-Butanone (MEK)	ND	U	20	1.9	1	05/23/12	05/23/12	KWG1205397	*
Chloroform	**1.6**		0.50	0.072	1	05/23/12	05/23/12	KWG1205397	
1,1,1-Trichloroethane (TCA)	**110**	D	5.0	0.75	10	05/23/12	05/23/12	KWG1205397	
Carbon Tetrachloride	ND	U	0.50	0.096	1	05/23/12	05/23/12	KWG1205397	
Benzene	**0.15**	J	0.50	0.062	1	05/23/12	05/23/12	KWG1205397	
1,2-Dichloroethane (EDC)	**5.2**		0.50	0.080	1	05/23/12	05/23/12	KWG1205397	
Trichloroethene (TCE)	**1.3**		0.50	0.10	1	05/23/12	05/23/12	KWG1205397	
1,2-Dichloropropane	ND	U	0.50	0.095	1	05/23/12	05/23/12	KWG1205397	
Bromodichloromethane	ND	U	0.50	0.091	1	05/23/12	05/23/12	KWG1205397	
cis-1,3-Dichloropropene	ND	U	0.50	0.18	1	05/23/12	05/23/12	KWG1205397	
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	05/23/12	05/23/12	KWG1205397	*
Toluene	**0.15**	J	0.50	0.054	1	05/23/12	05/23/12	KWG1205397	
trans-1,3-Dichloropropene	ND	U	0.50	0.068	1	05/23/12	05/23/12	KWG1205397	
1,1,2-Trichloroethane	**13**		0.50	0.14	1	05/23/12	05/23/12	KWG1205397	
Tetrachloroethene (PCE)	**0.18**	J	0.50	0.099	1	05/23/12	05/23/12	KWG1205397	
2-Hexanone	ND	U	20	2.7	1	05/23/12	05/23/12	KWG1205397	*
Dibromochloromethane	ND	U	0.50	0.14	1	05/23/12	05/23/12	KWG1205397	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.10	1	05/23/12	05/23/12	KWG1205397	

Comments:

Client: Environmental Management Services, Inc.
Project: SVE PILOT/KUH0-11-006
Sample Matrix: Water

Service Request: K1204618
Date Collected: 05/12/2012
Date Received: 05/15/2012

Volatile Organic Compounds

Sample Name: SVE-EXT-DEEP
Lab Code: K1204618-001

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chlorobenzene	ND	U	0.50	0.11	1	05/23/12	05/23/12	KWG1205397	
Ethylbenzene	ND	U	0.50	0.050	1	05/23/12	05/23/12	KWG1205397	
m,p-Xylenes	**0.11**	J	0.50	0.11	1	05/23/12	05/23/12	KWG1205397	
o-Xylene	ND	U	0.50	0.074	1	05/23/12	05/23/12	KWG1205397	
Styrene	ND	U	0.50	0.089	1	05/23/12	05/23/12	KWG1205397	
Bromoform	ND	U	0.50	0.16	1	05/23/12	05/23/12	KWG1205397	
Isopropylbenzene	ND	U	2.0	0.051	1	05/23/12	05/23/12	KWG1205397	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	05/23/12	05/23/12	KWG1205397	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.20	1	05/23/12	05/23/12	KWG1205397	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	83	73-122	05/23/12	Acceptable
Toluene-d8	88	65-144	05/23/12	Acceptable
4-Bromofluorobenzene	81	68-117	05/23/12	Acceptable

Comments:

Client: Environmental Management Services, Inc.
Project: SVE PILOT/KUH0-11-006
Sample Matrix: Water

Service Request: K1204618
Date Collected: 05/12/2012
Date Received: 05/15/2012

Volatile Organic Compounds

Sample Name: TB1 47602
Lab Code: K1204618-002

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.13	1	05/23/12	05/23/12	KWG1205397	
Chloromethane	ND	U	0.50	0.068	1	05/23/12	05/23/12	KWG1205397	
Vinyl Chloride	ND	U	0.50	0.075	1	05/23/12	05/23/12	KWG1205397	
Bromomethane	ND	U	0.50	0.10	1	05/23/12	05/23/12	KWG1205397	
Chloroethane	ND	U	0.50	0.16	1	05/23/12	05/23/12	KWG1205397	
Trichlorofluoromethane	ND	U	0.50	0.12	1	05/23/12	05/23/12	KWG1205397	
Methyl Acetate	ND	U	1.0	0.38	1	05/23/12	05/23/12	KWG1205397	
1,1-Dichloroethene	ND	U	0.50	0.080	1	05/23/12	05/23/12	KWG1205397	
Acetone	ND	U	20	3.3	1	05/23/12	05/23/12	KWG1205397	*
Carbon Disulfide	ND	U	0.50	0.069	1	05/23/12	05/23/12	KWG1205397	
Methylene Chloride	**0.32**	J	2.0	0.10	1	05/23/12	05/23/12	KWG1205397	
Methyl tert-Butyl Ether	ND	U	0.50	0.11	1	05/23/12	05/23/12	KWG1205397	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	05/23/12	05/23/12	KWG1205397	
1,1-Dichloroethane	ND	U	0.50	0.077	1	05/23/12	05/23/12	KWG1205397	
cis-1,2-Dichloroethene	ND	U	0.50	0.067	1	05/23/12	05/23/12	KWG1205397	
2-Butanone (MEK)	ND	U	20	1.9	1	05/23/12	05/23/12	KWG1205397	*
Chloroform	ND	U	0.50	0.072	1	05/23/12	05/23/12	KWG1205397	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	05/23/12	05/23/12	KWG1205397	
Carbon Tetrachloride	ND	U	0.50	0.096	1	05/23/12	05/23/12	KWG1205397	
Benzene	ND	U	0.50	0.062	1	05/23/12	05/23/12	KWG1205397	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	05/23/12	05/23/12	KWG1205397	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	05/23/12	05/23/12	KWG1205397	
1,2-Dichloropropane	ND	U	0.50	0.095	1	05/23/12	05/23/12	KWG1205397	
Bromodichloromethane	ND	U	0.50	0.091	1	05/23/12	05/23/12	KWG1205397	
cis-1,3-Dichloropropene	ND	U	0.50	0.18	1	05/23/12	05/23/12	KWG1205397	
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	05/23/12	05/23/12	KWG1205397	*
Toluene	**0.16**	J	0.50	0.054	1	05/23/12	05/23/12	KWG1205397	
trans-1,3-Dichloropropene	ND	U	0.50	0.068	1	05/23/12	05/23/12	KWG1205397	
1,1,2-Trichloroethane	ND	U	0.50	0.14	1	05/23/12	05/23/12	KWG1205397	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	05/23/12	05/23/12	KWG1205397	
2-Hexanone	ND	U	20	2.7	1	05/23/12	05/23/12	KWG1205397	*
Dibromochloromethane	ND	U	0.50	0.14	1	05/23/12	05/23/12	KWG1205397	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.10	1	05/23/12	05/23/12	KWG1205397	

Comments:

Client:	Environmental Management Services, Inc.	**Service Request:**	K1204618
Project:	SVE PILOT/KUH0-11-006	**Date Collected:**	05/12/2012
Sample Matrix:	Water	**Date Received:**	05/15/2012

Volatile Organic Compounds

Sample Name:	TB1 47602	**Units:**	ug/L
Lab Code:	K1204618-002	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chlorobenzene	ND	U	0.50	0.11	1	05/23/12	05/23/12	KWG1205397	
Ethylbenzene	ND	U	0.50	0.050	1	05/23/12	05/23/12	KWG1205397	
m,p-Xylenes	**0.11**	J	0.50	0.11	1	05/23/12	05/23/12	KWG1205397	
o-Xylene	ND	U	0.50	0.074	1	05/23/12	05/23/12	KWG1205397	
Styrene	ND	U	0.50	0.089	1	05/23/12	05/23/12	KWG1205397	
Bromoform	ND	U	0.50	0.16	1	05/23/12	05/23/12	KWG1205397	
Isopropylbenzene	ND	U	2.0	0.051	1	05/23/12	05/23/12	KWG1205397	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	05/23/12	05/23/12	KWG1205397	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.20	1	05/23/12	05/23/12	KWG1205397	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	79	73-122	05/23/12	Acceptable
Toluene-d8	89	65-144	05/23/12	Acceptable
4-Bromofluorobenzene	84	68-117	05/23/12	Acceptable

Comments:

Client: Environmental Management Services, Inc.
Project: SVE PILOT/KUH0-11-006
Sample Matrix: Water

Service Request: K1204618
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1205397-5

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.13	1	05/23/12	05/23/12	KWG1205397	
Chloromethane	ND	U	0.50	0.068	1	05/23/12	05/23/12	KWG1205397	
Vinyl Chloride	ND	U	0.50	0.075	1	05/23/12	05/23/12	KWG1205397	
Bromomethane	ND	U	0.50	0.10	1	05/23/12	05/23/12	KWG1205397	
Chloroethane	ND	U	0.50	0.16	1	05/23/12	05/23/12	KWG1205397	
Trichlorofluoromethane	ND	U	0.50	0.12	1	05/23/12	05/23/12	KWG1205397	
Methyl Acetate	ND	U	1.0	0.38	1	05/23/12	05/23/12	KWG1205397	
1,1-Dichloroethene	ND	U	0.50	0.080	1	05/23/12	05/23/12	KWG1205397	
Acetone	ND	U	20	3.3	1	05/23/12	05/23/12	KWG1205397	*
Carbon Disulfide	ND	U	0.50	0.069	1	05/23/12	05/23/12	KWG1205397	
Methylene Chloride	**0.18**	J	2.0	0.10	1	05/23/12	05/23/12	KWG1205397	
Methyl tert-Butyl Ether	ND	U	0.50	0.11	1	05/23/12	05/23/12	KWG1205397	
trans-1,2-Dichloroethene	ND	U	0.50	0.072	1	05/23/12	05/23/12	KWG1205397	
1,1-Dichloroethane	ND	U	0.50	0.077	1	05/23/12	05/23/12	KWG1205397	
cis-1,2-Dichloroethene	ND	U	0.50	0.067	1	05/23/12	05/23/12	KWG1205397	
2-Butanone (MEK)	ND	U	20	1.9	1	05/23/12	05/23/12	KWG1205397	*
Chloroform	ND	U	0.50	0.072	1	05/23/12	05/23/12	KWG1205397	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.075	1	05/23/12	05/23/12	KWG1205397	
Carbon Tetrachloride	ND	U	0.50	0.096	1	05/23/12	05/23/12	KWG1205397	
Benzene	ND	U	0.50	0.062	1	05/23/12	05/23/12	KWG1205397	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.080	1	05/23/12	05/23/12	KWG1205397	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	05/23/12	05/23/12	KWG1205397	
1,2-Dichloropropane	ND	U	0.50	0.095	1	05/23/12	05/23/12	KWG1205397	
Bromodichloromethane	ND	U	0.50	0.091	1	05/23/12	05/23/12	KWG1205397	
cis-1,3-Dichloropropene	ND	U	0.50	0.18	1	05/23/12	05/23/12	KWG1205397	
4-Methyl-2-pentanone (MIBK)	ND	U	20	2.6	1	05/23/12	05/23/12	KWG1205397	*
Toluene	ND	U	0.50	0.054	1	05/23/12	05/23/12	KWG1205397	
trans-1,3-Dichloropropene	ND	U	0.50	0.068	1	05/23/12	05/23/12	KWG1205397	
1,1,2-Trichloroethane	ND	U	0.50	0.14	1	05/23/12	05/23/12	KWG1205397	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	05/23/12	05/23/12	KWG1205397	
2-Hexanone	ND	U	20	2.7	1	05/23/12	05/23/12	KWG1205397	*
Dibromochloromethane	ND	U	0.50	0.14	1	05/23/12	05/23/12	KWG1205397	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.10	1	05/23/12	05/23/12	KWG1205397	

Comments:

Client: Environmental Management Services, Inc.
Project: SVE PILOT/KUH0-11-006
Sample Matrix: Water

Service Request: K1204618
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1205397-5

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chlorobenzene	ND	U	0.50	0.11	1	05/23/12	05/23/12	KWG1205397	
Ethylbenzene	ND	U	0.50	0.050	1	05/23/12	05/23/12	KWG1205397	
m,p-Xylenes	ND	U	0.50	0.11	1	05/23/12	05/23/12	KWG1205397	
o-Xylene	ND	U	0.50	0.074	1	05/23/12	05/23/12	KWG1205397	
Styrene	ND	U	0.50	0.089	1	05/23/12	05/23/12	KWG1205397	
Bromoform	ND	U	0.50	0.16	1	05/23/12	05/23/12	KWG1205397	
Isopropylbenzene	ND	U	2.0	0.051	1	05/23/12	05/23/12	KWG1205397	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.16	1	05/23/12	05/23/12	KWG1205397	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.20	1	05/23/12	05/23/12	KWG1205397	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	79	73-122	05/23/12	Acceptable
Toluene-d8	87	65-144	05/23/12	Acceptable
4-Bromofluorobenzene	83	68-117	05/23/12	Acceptable

Comments:

Client: Environmental Management Services, Inc. **Service Request:** K1204618
Project: SVE PILOT/KUH0-11-006
Sample Matrix: Water

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B **Units:** PERCENT
Analysis Method: 8260C **Level:** Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
SVE-EXT-DEEP	K1204618-001	83	88	81
TB1 47602	K1204618-002	79	89	84
Batch QC	K1204691-001	80	88	83
Method Blank	KWG1205397-5	79	87	83
Batch QCMS	KWG1205397-1	81	89	81
Batch QCDMS	KWG1205397-2	81	88	81
Lab Control Sample	KWG1205397-3	80	87	81
Duplicate Lab Control Sample	KWG1205397-4	81	88	82

Surrogate Recovery Control Limits (%)

Sur1 =	Dibromofluoromethane	73-122
Sur2 =	Toluene-d8	65-144
Sur3 =	4-Bromofluorobenzene	68-117

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

Client:	Environmental Management Services, Inc.	**Service Request:**	K1204618
Project:	SVE PILOT/KUH0-11-006	**Date Extracted:**	05/23/2012
Sample Matrix:	Water	**Date Analyzed:**	05/23/2012

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1204691-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	8260C	**Extraction Lot:**	KWG1205397

Analyte Name	Sample Result	Batch QCMS KWG1205397-1 Matrix Spike			Batch QCDMS KWG1205397-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
Vinyl Chloride	ND	9.42	10.0	94	8.84	10.0	88	49-136	6	30
1,1-Dichloroethene	0.21	11.4	10.0	112	11.0	10.0	108	59-171	4	30
Chloroform	ND	9.59	10.0	96	9.11	10.0	91	64-133	5	30
Carbon Tetrachloride	ND	9.93	10.0	99	9.30	10.0	93	53-161	7	30
Benzene	ND	9.65	10.0	97	9.16	10.0	92	63-144	5	30
Trichloroethene (TCE)	ND	9.61	10.0	96	9.06	10.0	91	53-139	6	30
Bromodichloromethane	ND	9.27	10.0	93	8.77	10.0	88	61-134	6	30
Toluene	0.070	9.63	10.0	96	9.09	10.0	90	71-136	6	30
1,1,2-Trichloroethane	ND	9.04	10.0	90	8.78	10.0	88	74-124	3	30
2-Hexanone	ND	43.7	50.0	87	42.6	50.0	85	53-132	3	30
Chlorobenzene	ND	9.79	10.0	98	9.45	10.0	95	69-126	4	30
Ethylbenzene	ND	9.42	10.0	94	9.10	10.0	91	66-136	3	30

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

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

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

Client: Environmental Management Services, Inc.
Project: SVE PILOT/KUH0-11-006
Sample Matrix: Water

Service Request: K1204618
Date Extracted: 05/23/2012
Date Analyzed: 05/23/2012

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1205397

	Lab Control Sample KWG1205397-3 Lab Control Spike			Duplicate Lab Control Sample KWG1205397-4 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Dichlorodifluoromethane	10.4	10.0	104	10.4	10.0	104	32-124	0	30
Chloromethane	9.30	10.0	93	8.90	10.0	89	34-130	4	30
Vinyl Chloride	9.07	10.0	91	8.94	10.0	89	55-123	1	30
Bromomethane	4.79	10.0	48	4.95	10.0	50	35-113	3	30
Chloroethane	9.92	10.0	99	9.47	10.0	95	58-134	5	30
Trichlorofluoromethane	8.01	10.0	80	7.99	10.0	80	52-141	0	30
Methyl Acetate	7.62	10.0	76	7.92	10.0	79	70-130	4	30
1,1-Dichloroethene	11.0	10.0	110	10.9	10.0	109	66-129	1	30
Acetone	45.7	50.0	91	48.1	50.0	96	68-135	5	30
Carbon Disulfide	16.5	20.0	83	16.3	20.0	82	46-144	1	30
Methylene Chloride	9.86	10.0	99	9.85	10.0	99	71-122	0	30
Methyl tert-Butyl Ether	8.58	10.0	86	8.92	10.0	89	54-126	4	30
trans-1,2-Dichloroethene	10.1	10.0	101	10.0	10.0	100	67-125	1	30
1,1-Dichloroethane	9.77	10.0	98	9.84	10.0	98	68-132	1	30
cis-1,2-Dichloroethene	9.44	10.0	94	9.35	10.0	94	71-118	1	30
2-Butanone (MEK)	41.3	50.0	83	43.3	50.0	87	71-149	5	30
Chloroform	9.53	10.0	95	9.48	10.0	95	70-129	1	30
1,1,1-Trichloroethane (TCA)	9.42	10.0	94	9.24	10.0	92	59-136	2	30
Carbon Tetrachloride	9.43	10.0	94	9.47	10.0	95	55-140	0	30
Benzene	9.53	10.0	95	9.50	10.0	95	69-124	0	30
1,2-Dichloroethane (EDC)	9.10	10.0	91	9.41	10.0	94	56-142	3	30
Trichloroethene (TCE)	9.33	10.0	93	9.34	10.0	93	67-128	0	30
1,2-Dichloropropane	9.32	10.0	93	9.42	10.0	94	67-126	1	30
Bromodichloromethane	9.17	10.0	92	9.10	10.0	91	63-129	1	30
cis-1,3-Dichloropropene	9.28	10.0	93	9.39	10.0	94	62-132	1	30
4-Methyl-2-pentanone (MIBK)	42.9	50.0	86	44.8	50.0	90	64-134	4	30
Toluene	9.51	10.0	95	9.44	10.0	94	69-124	1	30
trans-1,3-Dichloropropene	8.71	10.0	87	8.62	10.0	86	59-125	1	30
1,1,2-Trichloroethane	9.02	10.0	90	9.28	10.0	93	74-118	3	30
Tetrachloroethene (PCE)	9.74	10.0	97	9.39	10.0	94	62-126	4	30
2-Hexanone	41.9	50.0	84	43.9	50.0	88	59-131	5	30
Dibromochloromethane	9.22	10.0	92	9.11	10.0	91	67-126	1	30
1,2-Dibromoethane (EDB)	9.36	10.0	94	9.49	10.0	95	74-118	1	30
Chlorobenzene	9.79	10.0	98	9.78	10.0	98	72-116	0	30
Ethylbenzene	9.42	10.0	94	9.25	10.0	93	67-121	2	30

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

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

Client: Environmental Management Services, Inc.
Project: SVE PILOT/KUH0-11-006
Sample Matrix: Water

Service Request: K1204618
Date Extracted: 05/23/2012
Date Analyzed: 05/23/2012

Lab Control Spike/Duplicate Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1205397

Analyte Name	Lab Control Sample KWG1205397-3 Lab Control Spike Result	Expected	%Rec	Duplicate Lab Control Sample KWG1205397-4 Duplicate Lab Control Spike Result	Expected	%Rec	%Rec Limits	RPD	RPD Limit
m,p-Xylenes	19.1	20.0	96	19.1	20.0	95	69-121	0	30
o-Xylene	9.59	10.0	96	9.51	10.0	95	71-119	1	30
Styrene	10.1	10.0	101	9.88	10.0	99	74-121	2	30
Bromoform	8.50	10.0	85	8.70	10.0	87	52-144	2	30
Isopropylbenzene	9.53	10.0	95	9.46	10.0	95	67-129	1	30
1,1,2,2-Tetrachloroethane	8.33	10.0	83	8.66	10.0	87	70-127	4	30
1,2-Dibromo-3-chloropropane	8.08	10.0	81	8.54	10.0	85	55-132	6	30

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

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

Client:	Environmental Management Services, Inc.	**Service Request:**	K1204618
Project:	SVE PILOT/KUH0-11-006	**Date Collected:**	05/12/2012
Sample Matrix:	Water	**Date Received:**	05/15/2012

1,4-Dioxane by GC/MS

Sample Name:	SVE-EXT-DEEP	**Units:**	ug/L
Lab Code:	K1204618-001	**Basis:**	NA
Extraction Method:	EPA 3510C	**Level:**	Low
Analysis Method:	8270D SIM		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,4-Dioxane	**15**		1.0	0.16	1	05/15/12	05/23/12	KWG1205062	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Dioxane-d8	63	48-118	05/23/12	Acceptable

Comments:

Client: Environmental Management Services, Inc.
Project: SVE PILOT/KUH0-11-006
Sample Matrix: Water

Service Request: K1204618
Date Collected: NA
Date Received: NA

1,4-Dioxane by GC/MS

Sample Name: Method Blank
Lab Code: KWG1205062-4

Extraction Method: EPA 3510C
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
1,4-Dioxane	ND	U	1.0	0.16	1	05/15/12	05/23/12	KWG1205062	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Dioxane-d8	73	48-118	05/23/12	Acceptable

Comments:

Client: Environmental Management Services, Inc. **Service Request:** K1204618
Project: SVE PILOT/KUH0-11-006
Sample Matrix: Water

Surrogate Recovery Summary
1,4-Dioxane by GC/MS

Extraction Method: EPA 3510C **Units:** PERCENT
Analysis Method: 8270D SIM **Level:** Low

Sample Name	Lab Code	Sur1
Batch QC	K1204507-001	77
SVE-EXT-DEEP	K1204618-001	63
Method Blank	KWG1205062-4	73
Batch QCMS	KWG1205062-1	73
Lab Control Sample	KWG1205062-2	71
Duplicate Lab Control Sample	KWG1205062-3	73

Surrogate Recovery Control Limits (%)

Sur1 = 1,4-Dioxane-d8	48-118

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: Environmental Management Services, Inc.
Project: SVE PILOT/KUH0-11-006
Sample Matrix: Water

Service Request: K1204618
Date Extracted: 05/15/2012
Date Analyzed: 05/23/2012

Matrix Spike Summary
1,4-Dioxane by GC/MS

Sample Name: Batch QC
Lab Code: K1204507-001

Extraction Method: EPA 3510C
Analysis Method: 8270D SIM

Units: ug/L
Basis: NA

Level: Low
Extraction Lot: KWG1205062

Batch QCMS
KWG1205062-1

Analyte Name	Sample Result	Matrix Spike Result	Matrix Spike Expected	Matrix Spike %Rec	%Rec Limits
1,4-Dioxane	ND	20.3	25.0	81	33-127

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.
Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Environmental Management Services, Inc.	**Service Request:**	K1204618
Project:	SVE PILOT/KUH0-11-006	**Date Extracted:**	05/15/2012
Sample Matrix:	Water	**Date Analyzed:**	05/23/2012

Lab Control Spike/Duplicate Lab Control Spike Summary
1,4-Dioxane by GC/MS

Extraction Method:	EPA 3510C	**Units:**	ug/L
Analysis Method:	8270D SIM	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1205062

	Lab Control Sample KWG1205062-2 Lab Control Spike			Duplicate Lab Control Sample KWG1205062-3 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Expected**	**%Rec**	**Result**	**Expected**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,4-Dioxane	18.1	25.0	72	20.8	25.0	83	52-111	14	30

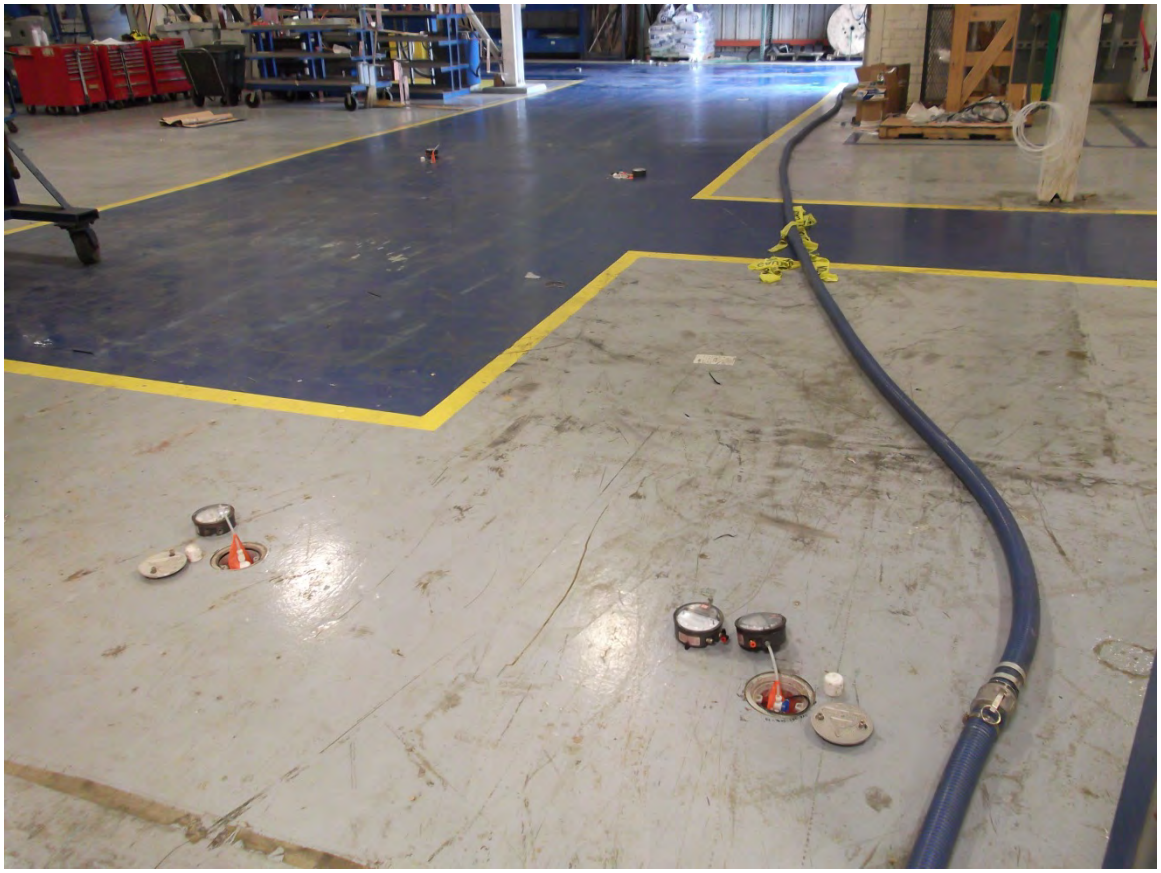
Results flagged with an asterisk (*) indicate values outside control criteria.

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

APPENDIX G

Installation of Deep Extraction Well

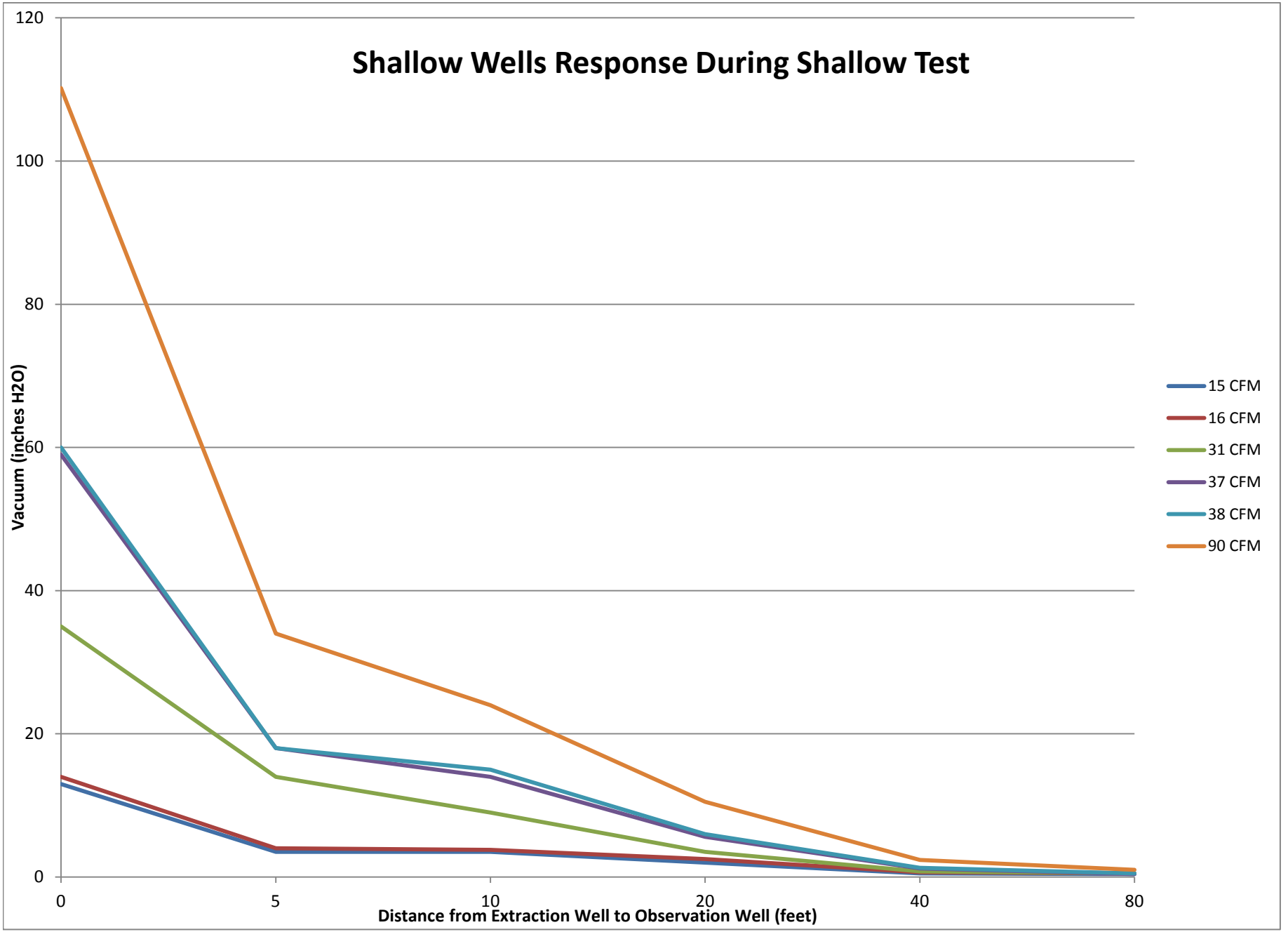
SVE Pilot System

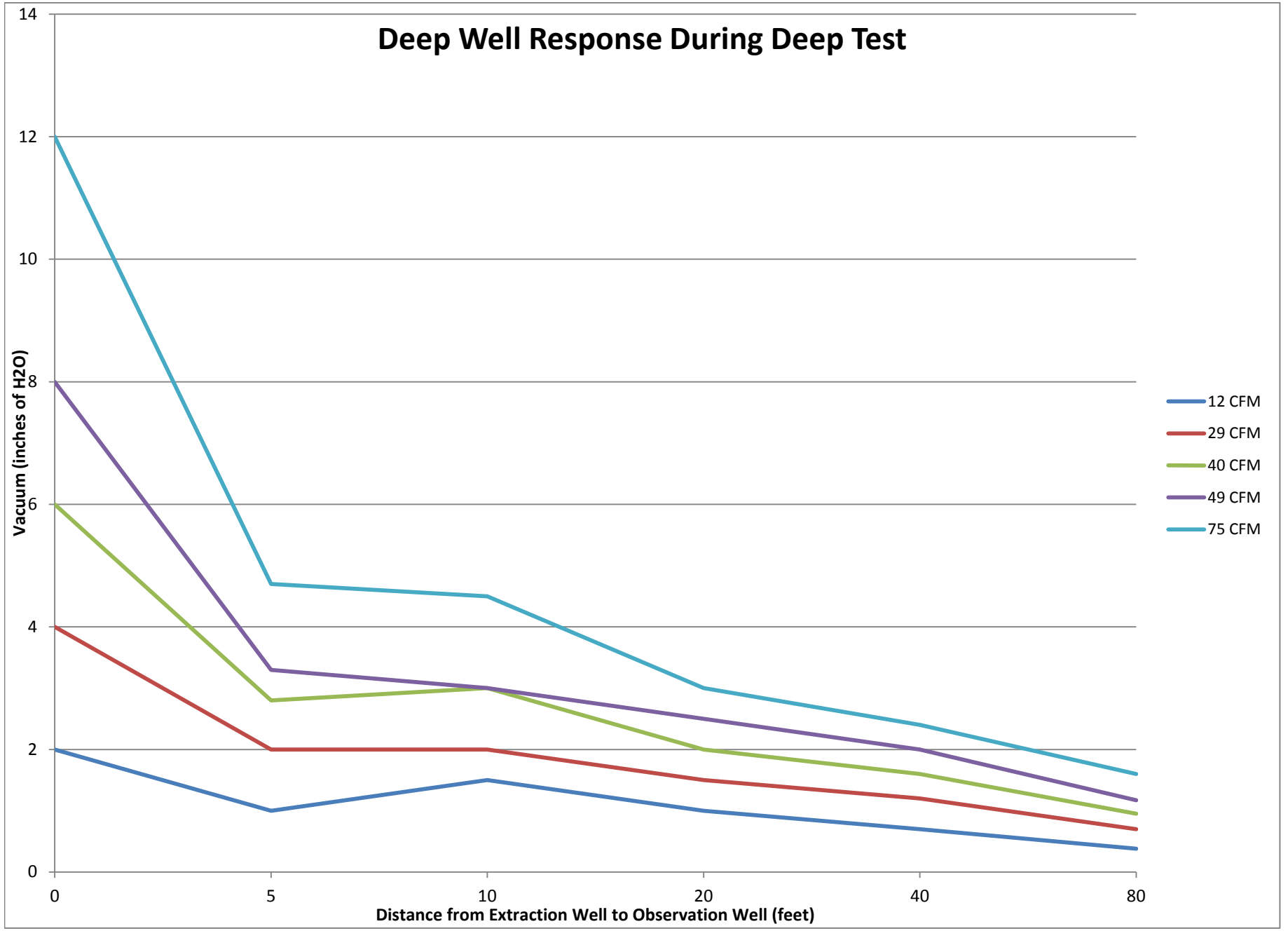


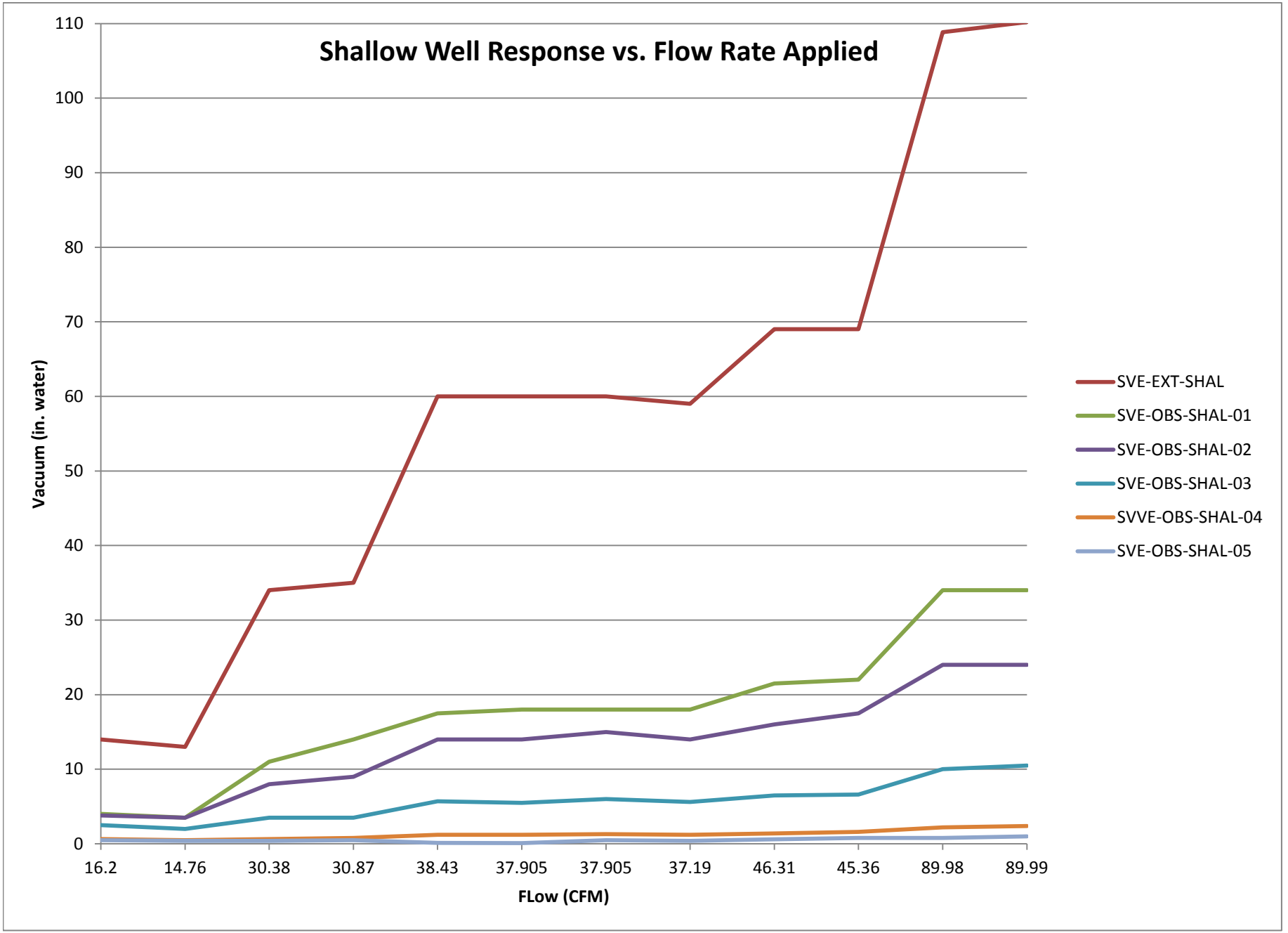
Monitoring Vacuum at Observation Wells
20 feet from extraction well

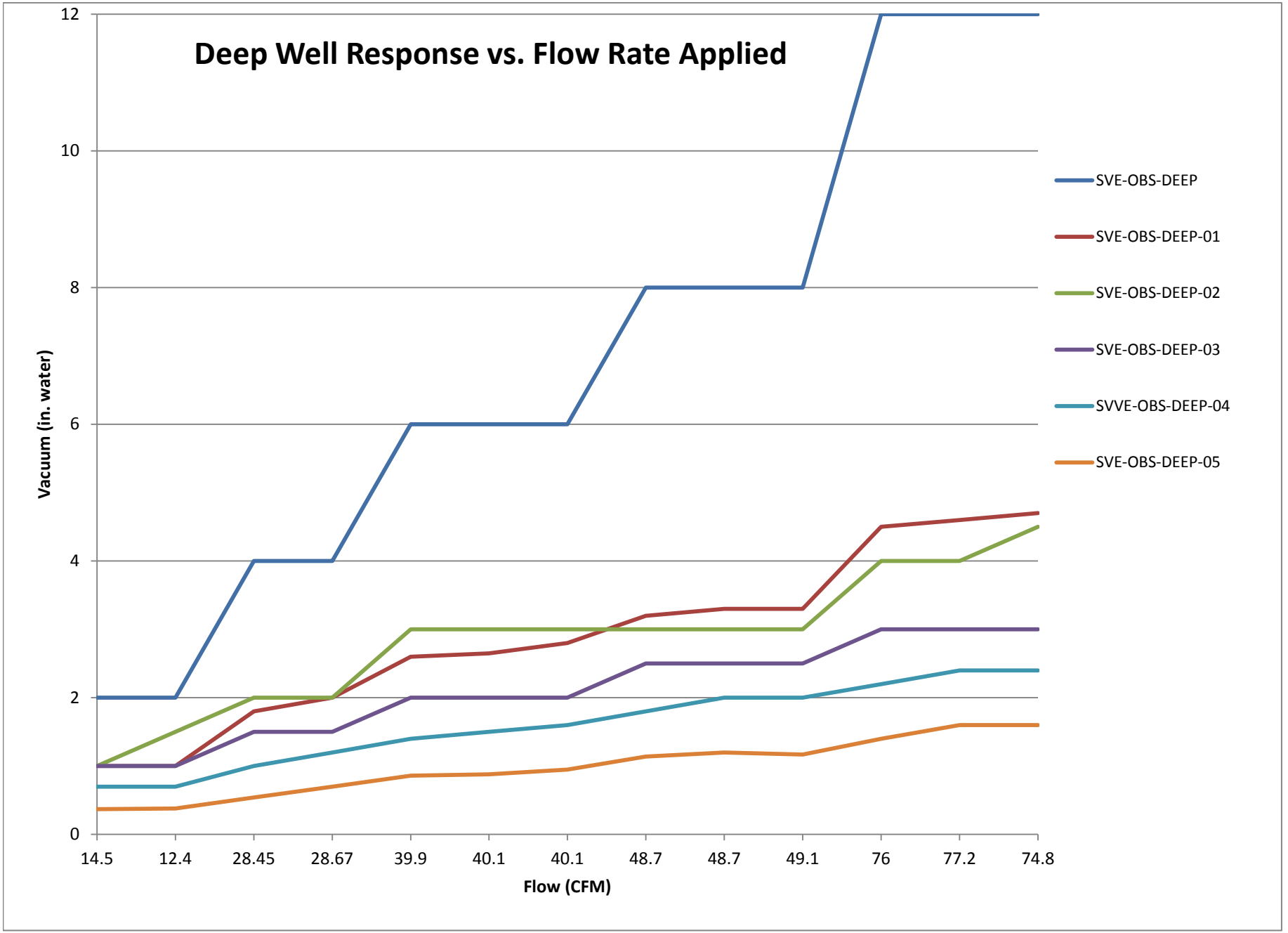
Shallow Extraction Well Test

APPENDIX H


Shallow Wells Response During Shallow Test
120
100
80
60
40
20
0
Vacuum (inches H2O)
0
5
10
20
40
80
Distance from Extraction Well to Observation Well (feet)
15 CFM
16 CFM
31 CFM
37 CFM
38 CFM
90 CFM


Deep Well Response During Deep Test
Vacuum (inches of H2O)
14
12
10
8
6
4
2
0
0
5
10
20
40
80
Distance from Extraction Well to Observation Well (feet)
12 CFM
29 CFM
40 CFM
49 CFM
75 CFM


Shallow Well Response vs. Flow Rate Applied
Vacuum (in. water)
110
100
90
80
70
60
50
40
30
20
10
0
16.2
14.76
30.38
30.87
38.43
37.905
37.905
37.19
46.31
45.36
89.98
89.99
FLow (CFM)
SVE-EXT-SHAL
SVE-OBS-SHAL-01
SVE-OBS-SHAL-02
SVE-OBS-SHAL-03
SVVE-OBS-SHAL-04
SVE-OBS-SHAL-05


Deep Well Response vs. Flow Rate Applied
Vacuum (in. water)
0
2
4
6
8
10
12
14.5
12.4
28.45
28.67
39.9
40.1
40.1
48.7
48.7
49.1
76
77.2
74.8
Flow (CFM)
SVE-OBS-DEEP
SVE-OBS-DEEP-01
SVE-OBS-DEEP-02
SVE-OBS-DEEP-03
SVVE-OBS-DEEP-04
SVE-OBS-DEEP-05